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SCIENTIFIC, MEDICAL, AND TECHNICAL BOOKS

PUBLISHED IN THE
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1930-1944

A SELECTED LIST OF TITLES IN PRINT
WITH ANNOTATIONS

EDITED BY R. R. HAWKINS


CHIEF OF THE SCIENCE AND TECHNOLOGY DIVISION
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PREFACE

THE present volume contains a selected list of medical, scientific, and technical books by citizens of this country and Canada published within the limits of the continental United States since the year 1930—books still in print and available for both domestic and foreign distribution. In 1943 the American publishers' mission to South America, becoming aware of the absence of such a compilation, brought the matter to the attention of the Department of State which immediately went on record as believing that a bibliography of this type would be a most useful means of furthering cultural relations with foreign countries. In November 1943 a formal request for aid in such an undertaking, endorsed by the Library of Congress, was forwarded to Dr. Ross G. Harrison, Chairman of the National Research Council, together with a memorandum from the Book Publishers Bureau outlining the details of the proposal and calling attention to the quarterly book list that the Library of Congress was about to undertake—an enterprise for which this larger compilation would form a valuable backlog. In March 1944 Dr. Harrison appointed a committee (the membership of which is listed on the opposite page) to formulate definite policy and procedure. He indicated that the sponsors of the project had expressed the hope that the volume, despite war-time delays and shortages, might be compiled and published within a year from 1 July 1944. A group of publishers contributed a substantial sum toward the undertaking, and the Office of the Coordinator of Inter-American Affairs made a grant of twenty-five thousand dollars with the understanding that the first printing of the book would be made available by the Department of State as an official document for distribution in Central and South American countries; it is expected that later printings will also be made available to the liberated areas of Europe and the Far East.

Dr. Harrison Craver, the Chairman of the Committee, laid his plans carefully and made the fortunate choice of Mr. R. R. Hawkins, Chief of the Science and Technology Division of The New York Public Library, as principal editor. Appeals were sent to several hundred publishers requesting them to submit to Mr. Hawkins' office a list of technical and scientific monographs still in print and published by them between 1930 and 1 January 1945. The publishers were also asked to supply annotations concerning individual titles. The majority cooperated enthusiastically, but since there was often uncertainty concerning the nature of the desired annotations, much of this phase of the work fell to Mr. Hawkins and his staff. Despite this and the heavy burden of correspondence assumed by Mr. Hawkins' office, the bibliography is only a few months behind schedule, thanks to the prompt handling of the material by the Yale University Press and the printers which the Press has employed.

The frequent changes of staff make it impossible to mention by name all persons who worked on the bibliography. Special credit is due to Daniel C. Haskell, Bibliographer of The New York Public Library, who performed the long and difficult task of marking the original copy for the printer and proofreading the entire work. The Committee was fortunate in being able to put this critical task into such capable hands. Henrietta T. Perkins of the Historical Library of the Yale University School of Medicine compiled the subject index. Elizabeth Walton served for over a year as the editor's secretary and,

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in addition to her secretarial duties, shared the responsibility of preparing copy; she is also largely responsible for the author index. Daniel J. Duffin wrote many of the best notes. Madge Scott, also of Mr. Hawkins' office, ordered and arranged the Library of Congress cards and carried out many other clerical duties. Russell Barnes, formerly of New York University, wrote in Washington, D.C., notes for books not obtainable in New York City. Nell Conway at Yale wrote many detailed notes, particularly for medical books. The following present or former members of The New York Public Library staff gave up much of their leisure time for long periods to write notes or to do other work for the Committee: Barbara Barry, Joseph C. Borden, Richard P. Breaden, Jack E. Brown, Muriel E. Burdett, Edwin B. Colburn, Robert M. Hamilton, Dorothy L. Kinne, Shirley J. Larson, Violet L. Wagener, and Arthur R. Youtz.

It was a great misfortune that the bibliography could not have benefited throughout by Dr. Craver's chairmanship. Ill health caused him to withdraw in August 1944, and at Dr. Harrison's request I agreed to serve in Dr. Craver's place until such time as he might again be able to assume the responsibility of guiding the Committee. I must take this opportunity to thank Mr. Edward M. Crane and Dr. K. K. Darrow, members of the Executive Committee which has been responsible for the majority of the decisions connected with the publication, once general policy had been crystallized by the main Committee.

To Mr. Carl P. Rollins, Printer to Yale University, we owe the typographical design of the book.

JOHN F. FULTON, M.D.

*Yale University,
November, 1945.*

INTRODUCTION

SINCE it has not previously been surveyed in its totality, the abundance of American scientific and technical literature has never been fully appreciated. Although descriptions of approximately six thousand titles are given in this work, twice as much material was available without covering subjects other than those here included. If we had embraced all technical branches, three volumes would have been necessary. It was the Committee's original intention to include in this work all the important literature that met the requirements of nationality, date of publication, and availability as stated in Dr. Fulton's preface. Only one restriction on this inclusive policy was agreed upon at the Committee's early meetings. This was the exclusion of the social sciences such as economics, sociology, education and criminology. Work had not progressed far when it became clear that further restrictions would be needed if the book was to be held within practical limits. Documents issued by the state governments were the first publications to be dropped categorically. As work progressed farther, other types of publications and other subjects were necessarily eliminated.

Most bibliographical works similar to this give much less information about individual titles; indeed, in most compilations the information is often less than that found on standard catalogue cards issued by the Library of Congress. In the present list books are described fully with complete titles, tables of contents and descriptive annotations. It is hoped that the Committee's decision to describe at length a carefully selected group of books has resulted in a more useful list than had more titles been given with less complete information.

Although the social sciences are in general omitted, the social implications of certain subjects have been included. In nursing, for example, the social service ramifications of the profession are so interwoven with technique that it has seemed inadvisable to attempt to exclude them. Many of the books under psychology will be as much at home on the shelves of a library devoted to the social sciences as on those of a psychologist's library. On the other hand, although the social aspects of medicine are of paramount interest currently in the United States, with extensive published literature on the subject, it was decided to exclude such topics as the costs of medical care, the pros and cons of socialized medicine, and forensic medicine. In the field of

technology one of the unexpected omissions is the graphic arts—printing, photoengraving, and the allied subjects are not covered. The technical aspects of the arts, such as painting and print-making, have likewise been omitted, although there are a number of excellent American books on these subjects.

Books emanating from state university presses and sold through regular book trade channels have been included. The exclusion of other publications issued by states and territories is undoubtedly the most serious omission. In the United States much important scientific and technical material comes from such agencies. This is particularly true in the fields of geology, engineering and agriculture, although important publications in the fields of the pure sciences are also sponsored by state governments. The State of Connecticut, for example, in its *Guide to the insects of Connecticut* has published several of the most important recent American entomological works. Persons wishing to investigate American publications in geology, engineering and agriculture issued under state governmental aegis will find lists of publishing bodies included in the Appendix. Also, a current list of American state publications is brought out by the Library of Congress, Washington, D.C., under the title *Monthly check-list of state publications*.

Another important group of American publications generally omitted are those issued by manufacturers. This literature has wide ramifications; much of it is directly related to the products of the issuing company, but a fair proportion of it is of an independent nature, sometimes containing scientific or technical data not readily available elsewhere. Although many American publications from this group deserve listing on the basis of merit, time was not available to sift the material and to undertake the vast correspondence necessary to determine whether selected publications were currently in print and available for distribution in foreign countries, and consequently only a few such publications are included in the present work. Unfortunately, there exists no inclusive guide to publications of this kind, but many American trade magazines list currently the publications that fall within their fields.

The series of monographs, papers and proceedings issued by American scientific and technical societies form an important group of American scientific literature. Many works by

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such societies are described in this list. However, literature of this type has not been fully covered. In some fields, such as astronomy, it is fairly represented, whereas in certain others the representation is meager. The leading scientific and technical societies are described and the titles of their series given in the National Research Council's *Handbook of scientific and technical societies and institutions of the United States and Canada*, No. 8 in this work.

The amount of bibliographical information about the books listed will be immediately apparent from the study of a few entries. In the early stages of compilation, Library of Congress printed cards were used extensively, and the form of entry owes much to them, although they have not been followed uncritically. As a general rule, when a Library of Congress card was available for a given entry, the exact form of the author's name as it appeared in the author heading was used. On the other hand, authors' names, when they are given in the title of the work, are taken from the book. Authors' dates, degrees and professional affiliations have been omitted, even in cases when the information appeared on Library of Congress cards and in the books. This was done because it was originally intended to incorporate such information in the author index. Shortage of technical assistants combined with lack of time eventually made it impossible to assemble this data. Except for unintentional editorial lapses, the titles are given in full as they occur on the title pages, save for the omission of degrees and professional affiliations, as mentioned. The place of publication and form of the publisher's name are usually cited as they occur on the title, although on occasion this information has been altered in order to conform to the current place and name of the publishing firm.

In the description of a given book, no attention has been paid to preliminary matter, only the number of pages in the body of the work being cited. In certain instances supplementary paging is indicated separately, but in most cases it has been added to the main paging. The description of illustrative matter is simple. Any graphic or pictorial matter, aside from printed text, has been considered as illustrative matter and indicated by the phrase "illus." Colored illustrations have been indicated by the abbreviation "col." Colored illustrations in books including both colored and black and white illustrative matter are indicated by the term "(part col.)." Only the height is given for size, expressed in centimeters, abbreviated "cm." The prices were, in most cases, furnished by the publishers. In a few instances they were taken from the *Cumu-*

lative book index or other standard sources. Some publishers listed separate prices for foreign sales as distinguished from sales in the United States of America. When the foreign price is higher, it usually includes shipping charges. The practices of American publishers in this particular vary, but in general it may be assumed that when a separate foreign price is not included, there will be extra shipping charges. In a few cases it was not possible for the editorial staff to obtain the price information. If a work was believed to be in print and for sale, it was listed nevertheless, and the lack of price information was indicated by "Price?". Included also are a few publications which are distributed free of charge. These are indicated by "*gratis*." In most cases these free publications are available only to libraries, learned societies and to persons having a recognized professional interest in the subject to which they pertain.

Usually the tables of contents have been copied directly from the books themselves. Abridged contents are indicated by the word "(abridged)." In making these abridgements, the editorial staff endeavored to retain the more significant headings. Contents of symposia and other collected volumes in which the individual chapters are the work of separate authors have, in general, not been abridged, although many of them run to considerable length.

The notes which follow the contents are designed to supplement the information given in them and in the title of the book. They are intended to bring out significant or unexpected features of the book and also to indicate its use or purpose when these are not readily apparent from title and contents. Considerable attention has been paid to significant changes in the edition described as compared with the preceding edition, the assumption being that many persons who use the list may be acquainted with an earlier edition of the book. Care was taken to point out substantial bibliographies and lists of literature incorporated in the books.

Although definite principles were drawn up and agreed upon before any notes were written, the notes themselves came from a variety of sources and inevitably reflect their origins. After tentative selections of books, the larger publishing houses were furnished with lists of their selected books and were asked to supply descriptive notes. These were used whenever possible, and the editor wishes to express his thanks to such firms as W. B. Saunders Company, John Wiley and Sons, Inc., D. Van Nostrand Company, Inc., and other publishing houses whose anonymous staff members consci-

Introduction

entiously composed annotations that were free of advertising superlatives and otherwise conformed to the editorial policy of this volume.

A number of descriptions have been taken from The New York Public Library's quarterly publication, *New technical books*. The editorial staff wrote half or more of the notes. The comparative length of the notes is not significant. Some writers consistently contributed short notes; others tended to crowd the space limitation. Some important books are described with extreme brevity since their nature and purpose are obvious from titles and tables of contents.

The books were selected in various ways. The first lists from which tentative selections were culled were made up by asking leading publishers and societies to submit copies of their catalogues marked to indicate the titles which they believed suited the requirements of the Committee. These suggestions in turn were carefully edited and supplemented by the editor and his immediate staff, and tentative lists compiled by subject. The tentative selections in most categories, but not in all, were then submitted to appropriate authorities who had agreed to act as referees for the Committee. Each referee was asked to examine the tentative list critically and to suggest both additions to and deletions from it. Final lists were then compiled by incorporating many of the referees' suggestions. However, let it be said that these suggestions were not followed slavishly. The final choice of books in all subjects was the responsibility of the editor.

Unfortunately, a number of books had to be omitted because copies of them, or of their latest editions, were not to be found in the libraries that were accessible to the editorial staff. In many cases where titles under consideration were thus unavailable, publishers furnished examination copies to the editor. A considerable number of books, however, were not included because, owing to war-time paper shortages, publishers were unable to submit examination copies when no library copies were available.

Throughout the selection process, the aim has been to choose the books of merit that met the gross qualifications of citizenship of their authors, date of publication, and availability. In general, the selections on a given subject represent the works that should be available in a well-stocked American library specializing in that subject. Convenient summaries of knowledge and monographs containing new and significant information were included. The work is thus not a list of the best books but rather of important and useful books. Although the selection was intentionally made on a liberal basis, fully as many

titles were rejected in the course of preparing the list as have been included.

College textbooks have been listed; high school and elementary textbooks have been omitted save for a small percentage of books used in vocational subjects in high schools, and the latter were added only when it appeared to the editor or to one of the referees that they had some significant vocational usefulness. Thus a textbook used in high school courses in machine shop work may appear in this list if it is deemed suitable also for use in self-education. Most American publishers of textbooks issue laboratory manuals, teachers' guides and other accessory literature to be used simultaneously. This material has been mentioned in the notes when it came to the editor's attention but no special effort was made to discover and include it.

In classifying the items, the main criterion has been the purpose or intended use of the volume. Thus, books on mathematics written specifically for engineers have been placed with engineering rather than with mathematics. Those on roentgenology for dentists have been classified with dentistry; theoretical works intended mainly for teachers and students have been classified separately from those intended for persons concerned with the applications of the subject, etc. It is usually agreed that this principle of classification is a sound one, but it inevitably leads anyone responsible for classifying a large list of books into many situations where his judgment can easily be disputed. Persons searching the list for a specific subject are advised not to depend upon the table of contents alone, but to use the subject index.

The war has affected the work in many ways. A large number of important books were temporarily out of print because the limited supply of paper available to the trade had to be used in technical publications ephemeral in nature but important to the demands of the war. The scarcity of trained personnel characteristic of the whole war period not only made it difficult for publishing houses to cooperate fully with the editorial staff, but also for the editor to assemble and maintain such a staff. Only a few of its members were full-time employees. The others, including the editor, carried on their regular duties while they also worked for the Committee.

The editor's task would have been much more difficult but for the help of Dr. Harrison W. Craver, first Chairman of the Committee, and Dr. John F. Fulton, who succeeded him. Dr. Craver furnished the original inspiration and many practical ideas. Dr. Fulton was a constant guide and source of encouragement when ob-

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stacles accumulated in the progress of the work. He is largely responsible also for whatever claims the bibliography may have to dignity and scholarly soundness.

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*New York Public Library,
September, 1945.*

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SCIENCE

General

BAITSELL, GEORGE ALFRED, EDITOR

Science in progress. [First series] New Haven: Yale University Press, 1939. 322 p. illus. 24 cm. (The Society of the Sigma Xi. National lectureships 1937 and 1938) \$4.00. 1

Contents: Foreword, by Harlow Shapley. Atoms, new and old, by E. O. Lawrence. The separation of isotopes and their use in chemistry and biology, by Harold C. Urey. Recent advances in the study of viruses, by W. M. Stanley. New views in virus disease research, by L. O. Kunkel. Vitamins and hormones, by Karl E. Mason. The general role of thiamin in living things, by R. R. Williams. Internal secretions in reproduction, by Edgar Allen. Recent developments in our knowledge of chromosome structure and their application to genetics, by T. S. Painter. Electrical potentials of the human brain, by E. Newton Harvey. Animal metabolism: from mouse to elephant, by Francis G. Benedict. References. Index.

Science in progress. Second series. New Haven: Yale University Press, 1940. 317 p. illus. 24 cm. (The Society of the Sigma Xi. National lectureships 1939 and 1940) \$4.00. 1a

Contents: The experimental alteration of heredity, by L. J. Stadler. The regulation of plant growth, by F. W. Went. Experimental studies on the functions of the frontal lobes in monkeys, chimpanzees, and man, by J. F. Fulton. Mysterious craters of the Carolina coast: a study in methods of research, by Douglas Johnson. How the earth shows its age, by Alfred C. Lane. The expanding universe, by H. P. Robertson. Cosmic rays and new elementary particles of matter, by Carl D. Anderson. The motions of ions and proteins in electric fields, by Duncan A. McInnes. The ultra-centrifuge, by J. W. Beams. Recent advances in aeronautics, by J. C. Hunsaker. References. Index.

Science in progress. Third series. New Haven: Yale University Press, 1942. 322 p. illus. 24 cm. (The Society of the Sigma Xi. National lectureships 1941 and 1942) \$3.00. 1b

Contents: Foreword, by W. R. Whitney. Galaxies, by Harlow Shapley. The problem of the expanding universe, by Edwin Hubble. Energy production in stars, by Hans A. Bethe. Image formation by electrons, by V. K. Zworykin. Recent work in the field of high pressures, by P. W. Bridgman. Recent developments in power generation, by Lionel S. Marks. Some fundamental aspects of photosynthesis, by James Franck. The structure of liquids, by John G. Kirkwood. The mode of action of sulfanilamide, by Perrin H. Dong. Some scientific aspects of the synthetic rubber problem, by Herman Mark. References. Index.

Note: These three volumes present essays each of which summarizes the main contributions in recent years to the knowledge of its particular field. The material is based on lectures presented in the National Sigma Xi lectureships, given annually under Society auspices by a group of five scientists who are selected on the basis of outstanding contributions in their fields of research. The works are illustrated with new drawings and photographs and there are lists of references arranged by chapter at the end of each book. Subsequent volumes are planned to appear approximately every two years.

BENNETT, JESSE LEE

The diffusion of science. Baltimore: The Johns Hopkins Press, 1942. 141 p. 22 cm. \$2.25. 2

Contents: The great and sudden world changes. The knowledge of the past and the agencies for diffusing it. The new scientific knowledge and the evolving agencies for diffusing it. The

growing realization of the changed situation. The need for broad view, scientific method, and definite plan. The possible aims of the education of the future. The possible material of the education of the future. The possible technique of the education of the future. Immediate possibilities. Notes.

Note: A plan and program for the diffusion of scientific knowledge based upon a broad study of the changed world situation, of the existing educational philosophy and educational systems, of the new devices of intercommunication, and of possible methods of deliberate and conscious procedure in a field in which existing activities are, in the author's view, largely empirical and pragmatic. Emphasis is placed on the application of the scientific method to the problem of the advancement and diffusion of science.

BLOOMFIELD, LEONARD

Linguistic aspects of science. Chicago: The University of Chicago Press, 1939. 59 p. 24 cm. (International encyclopedia of unified science. Vol. 1, No. 4) \$1.00. 3

Contents: Introduction. The function of language. The structure of language. Precision in natural language. Scientific language. Summary. Selected bibliography. Index of technical terms.

Note: An essay on the most general aspects of linguistic structure which underlie the scientist's use of language. The language of scientists is considered as only one type of specialized dialect, analogous to the jargon or dialect of craft. For grammarians as well as writers of science.

CALIFORNIA UNIVERSITY. MEMBERS OF THE FACULTIES

Science in the University. Berkeley, Calif.: University of California Press, 1944. 332 p. illus. 24 cm. \$3.75. 4

Contents: Driving back the dark, by Robert Grant Allen. Cosmic rays—report of recent progress, 1936–1941, by J. R. Oppenheimer. Molecular forces and solubility, by Joel H. Hildebrand. The chemistry of the amino acids and proteins, by Carl L. A. Schmidt. The task of the organic chemist, by G. Ross Robertson. What makes the barometric pressure rise or fall, by Jakob Bjerknes. The California current, by H. U. Sverdrup. Evolution of a Sierran landscape, by William C. Patnam. Subsidence and elevation in the Los Angeles region, by U. S. Gant. A modern conception of living material, by O. L. Spönsler. On some facts pertinent to the theory of the gene, by Richard B. Goldschmidt. Longevity in organisms, by Charles R. Lipman. The study of the sea and its relation to man, by Claude E. Zolbell. Trees and history, by Ralph W. Chaney. Ornithology of the looking glass, by Loye Miller. General aspects of the study of plant nutrition, by D. R. Hoagland. Physiology as an independent science, by J. M. D. Olmsted. The contribution of psychology, by Knight Dunlap. Life, morals, and Huxley's "Evolution and ethics," by S. J. Holmes.

Note: These papers are for the most part couched in language that is intelligible to the layman. They are of interest also to scientists. Several of them discuss only the researches made by their authors; others of them give a general account of the whole subject.

COMPTON, KARL TAYLOR, AND OTHERS

Scientists face the world of 1942; essays by Karl T. Compton, Robert William Mullinger and Vannevar Bush. New Brunswick: Rutgers University Press, 1942. 80 p. 23 cm. (Rutgers University. Publications of the one hundred seventy-fifth anniversary celebration. No. 3) \$1.25. 5

Contents: Scientists face the world of 1942, by K. T. Compton. The case for biological engineering, by Vannevar Bush. The case for agricultural engineering, by R. W. Trullinger. Commentaries, by H. N. Davis, Detlev Bronk, and S. W. Fletcher.

Note: In these essays, Dr. Compton discusses the application of the fundamental sciences, physics, chemistry, and biology, to engineering at a time when a nation mobilizes its scientific resources for a great military effort. Dr. Bush discusses the philosophy and the technique of biological engineering and shows its importance to problems of food, health, and clothing. Dr. Trullinger discusses the application of well-known principles of engineering to agriculture.

DAVIS, HAROLD THAYER

Philosophy and modern science. Bloomington, Ind.: The Principia Press, 1931. 335 p. illus. 23 cm. \$3.50. 5a

Contents: Science: the modern metaphysics. The philosophical background of modern physics. Is there an ether? Does matter drag the ether? Time, space, and the fourth dimension. What is gravitation? Is nature finite? The atom concept. The laws of chance. The metaphysics of the quantum theory and wave mechanics. The discovery and interpretation of cosmic radiation. What shall we believe? Indexes.

Note: This study attempts to set forth as simply as possible the basic postulates of physics and to trace their implications, at the same time endeavoring to humanize certain data and speculations which have emerged from a body of recent experiments. The work begins with some problems first proposed by the Greeks and traces the story of their development during subsequent centuries. The concepts of twentieth century physics are set forth as the logical culmination of past experience, and the work of Schrödinger, Dirac, Heisenberg, de Broglie, and Einstein is considered from the standpoint of a new subjective philosophy and a conceptual renaissance. The development of the concept of the ether is taken as an example of the philosophical and mystical aspect of science, being the history of man's attempt to endow ether with material properties. Technical language has been avoided as far as the subject matter will permit.

HOWLAND, HAZEL POPE, AND OTHERS

How to read in science and technology, by Hazel Pope Howland, Lawrence L. Jarvie and Leo F. Smith. New York: Harper and Brothers, 1943. 264 p. illus. 23 cm. Paper, \$2.00. 6

Contents: Introduction. Reading for details. Reading for main ideas. Reading for the organization of ideas. Reading to understand principles. Reading to follow directions. Reading to solve a problem. Reading to understand definitions. Reading to understand and interpret graphic materials.

Note: A combination text and workbook designed to train students to read scientific and technical material quickly and efficiently. Each chapter includes a number of tested exercises. The book was developed at the Rochester Athenaeum and Mechanics Institute, Rochester, N.Y.

MOULTON, FOREST RAY, EDITOR

The world and man as science sees them. Chicago: The University of Chicago Press, 1937. 533 p. illus. 23 cm. \$1.49. 7

Contents: Astronomy, by F. R. Moulton. The origin and history of the earth, by R. T. Chamberlin. Particles and waves, by H. B. Lomon and R. J. Stephenson. Chemical processes, by H. I. Schlesinger and E. J. Rosenbaum. The nature and origin of life, by H. H. Newman. The problems of life and reproduction in the plant kingdom, by M. C. Coulter. Evolution and behavior of the invertebrates, by W. C. Allee. Vertebrates, by A. S. Rømer. Physiological processes, by A. J. Carlson. Microorganisms and their roles in nature, by W. H. Taliaferro. Man, by Fay-Cooper Cole. Bibliography. Index.

Note: A collection of readable and scientifically accurate essays on important branches of science. The book is suitable for general reading and also for use in general science courses in colleges. It has essentially the same purpose as H. H. Newman, editor, *The nature of the world and man*, Chicago, 1926, and treats many of the same subjects, but it is a new work.

NATIONAL RESEARCH COUNCIL

Handbook of scientific and technical societies and institutions of the United States and Can-

ada. Fourth edition. United States section compiled for the National Research Council of the United States by Callie Hull and Mildred Pad-dock. Canadian section compiled for the National Research Council of Canada by S. J. Cook and P. A. Howard. Washington, D.C.: National Research Council of the National Academy of Sciences, 1942. 389 p. 25 cm. (Bulletin of the National Research Council. No. 106) \$4.00. 8

Contents: United States: Scientific and technical societies. Canada: Scientific and technical societies. Appendix: Notes on lists of societies and associations issued by other organizations. Indexes.

Note: A directory of those societies, associations, and similar organizations in the natural sciences and related fields which contribute to the advancement of knowledge through their meetings, publications, and other resources. In addition to organizations concerned with the natural sciences and technology, a number of more general organizations and special institutions supporting scientific research have been included, as well as affiliated societies of the American Council on Education and the Social Science Research Council. Certain trade associations which are active in research are also listed. The present edition contains 1269 organizations for the United States and 143 for Canada, representing an increase of nearly 100 per cent of those given in the previous (1927) edition. For each organization listed is given the name, president, secretary, history, object, membership, meetings, and serial publications. Subject and personnel indexes for both the United States and Canada are provided.

RIDGWAY, JOHN LIVESY

Scientific illustration. Stanford University, Calif.: Stanford University Press, 1938. 173 p. illus. (part col.) 26 cm. \$4.00. 8a

Contents (abridged): Purpose and advantages of illustrations. Kinds of illustrations. Selection of appropriate illustrative material. Photographs as illustrations. Materials used in preparing drawings. Instruments needed. Posing specimens (orientation). The drawing of specimens. Outlining from inanimate specimens. Crystal drawing. Natural history drawing. Color work and colors. Retouching photographs of specimens. Pen drawings made over unsatisfactory photographs. Landscape or outdoor sketching. Classifications of finished illustrations. Making up plates and grouping figures. Preliminary preparation of maps. Generalization of maps. Final preparation of maps. To make a scale for map of unknown scale. Symbols representing miscellaneous data used on maps. Lettering. Copying or transferring. Distinguishing areal patterns for black-and-white maps. Coloring preliminary maps. Marking reduction or enlargement of maps. Diagrammatic illustrations. Structure sections. Columnar sections. Plans of mine workings. Lithologic symbols. Proofreading illustrations. Borrowed and fragile specimens. Credit for re-use of published illustrations. Processes of reproducing illustrations. Index.

Note: A text and reference book representing up-to-date practice in all the essentials of scientific book illustrations.

THE SMITHSONIAN SERIES. Editor-in-chief, Charles Greeley Abbot. New York: The Series Publishers, Inc., 1929-32 (completely revised 1943) 12 v. illus. (part col.) 24 cm. \$59.50. 9

Contents: Volume I. The Smithsonian Institution, by Webster Prentiss True. Volume II. The sun and the welfare of man, by Charles Greeley Abbot. Volume III. Minerals from the earth and sky: Part I, The story of meteorites, by George P. Merrill. Part II, Gems and gem minerals, by William F. Foshag. Volume IV. The North American Indians—an account of the American Indians north of Mexico, compiled from the original sources, by Rose H. Palmer. Volume V. Insects, their ways and means of living, by Robert Evans Snodgrass. Volume VI. Wild animals in and out of the zoo, by William M. Mann. Volume VII. Man from the farthest past, by Carl Whiting Bishop, with the collaboration of Charles Greeley Abbot and Aleš Hydlíčka. Volume VIII. Fishes, amphibians and reptiles: Part I, Fishes, by Samuel F. Hildebrand. Parts II and III, Amphibians and reptiles, by Charles W. Gilmore and Doris M. Cochran. Volume IX. Birds and beasts: Part I, Birds, by Alexander Wetmore. Part II, Beasts, by Gerrit S. Miller, Jr. and James W. Gidley. Volume X. Shelled creatures and geological history, by Ray S. Bussler, Charles E. Reeser,

Waldo L. Schmitt, and Paul Bartsch. Volume xi. Old and new plant lore, a symposium, by Agnes Chase, A. S. Hitchcock, Earl S. Johnston, J. H. Kempton, Ellsworth P. Killip, Daniel T. MacDougal, Albert Mann, and William R. Maxon. Volume xii. Great inventions, by Charles Greeley Abbot. Bibliographies in volumes iii, vii, viii, ix, x and xi. Index in each volume.

Note: This set of volumes although published commercially is an official publication of the Smithsonian Institution, authorized by its Board of Regents. The text and illustrations supplied by the Institution reflect to a considerable extent the collections and activities of the Institution. As the contents listed above indicate, the field of science is not completely covered. There is, for example, no attempt to introduce the reader to general physics or chemistry. The material that is offered is authoritative. Although the exposition is not over-simplified, the subjects are treated for the general reader. The illustrations are abundant and interesting. There is no combined index to the set, and generally speaking, there are no references to related literature.

THOMAS, WILLIAM STEPHEN

The amateur scientist; science as a hobby. New York: W. W. Norton and Company, Inc., 1942. 291 p. illus. 21 cm. \$2.75. 10

Contents: Science and ourselves. Science as a hobby. Who is the amateur scientist? The amateur scientist and the community. Organizations of amateur scientists. Research and the amateur scientist. Sample programs for amateur research. The amateur scientist and the future.

Note: This book is both a survey of the history and activities of amateur scientists, especially in the United States of America, and a handbook for the guidance of such scientists.

WOODRUFF, LORANDE LOSS, EDITOR

The development of the sciences. Second series. New Haven: Yale University Press, 1941. 336 p. illus. 23 cm. \$3.00. 11

Contents: Mathematics, by Oystein Ore. Astronomy, by Frank Schlesinger. Physics, by Henry Margenau. Chemistry, by J. A. Timm. Geology, by C. R. Longwell. Biology, by L. L. Woodruff. Psychology, by W. R. Miles. Medicine and the sciences, by I. F. Hulton.

Note: The chapters of this book for the general reader form a short introduction to the methods, ideas, background, and trends of science. Each of the first seven chapters traces the development of one of the basic sciences from its beginnings to its recent development. The last chapter shows the interdependence of these various sciences as illustrated by specific examples in the history of medicine. The first series was published in 1923.

Dictionaries

DE VRIES, LOUIS

French-English science dictionary for students in agricultural, biological, and physical sciences, by Louis De Vries, Iowa State College, with the collaboration of members of the graduate faculty. New York: McGraw-Hill Book Company, Inc., 1940. 546 p. 18 cm. \$3.50. 11a

Note: This dictionary of 43,000 entries includes terms pertaining to bacteriology, botany, zoology, entomology, genetics, horticulture, agronomy, chemistry, physics, and mathematics. The past, present, and future tenses and the past participles of many irregular verbs are listed. About 500 idioms, most of them based on verb forms, are included and defined.

DE VRIES, LOUIS

German-English science dictionary for students in the agricultural, biological and physical sciences. New York: McGraw-Hill Book Company, Inc., 1939. 473 p. 18 cm. \$3.00. 11b

Note: Gives the English equivalents of 48,000 German terms pertaining to bacteriology, botany, and zoology, including anatomy, embryology, pathology, and physiology; entomology; genetics; horticulture; agronomy; chemistry; physics; and mathe-

matics. A large number of literary terms needed by the student in science and many common idioms are included. Past tenses and past participles are translated.

VAN NOSTRAND'S SCIENTIFIC ENCYCLOPEDIA; aeronautics, astronomy, botany, chemistry, engineering, geology, mathematics, medicine, mineralogy, navigation, physics, zoology. New York: D. Van Nostrand Company, Inc., 1938. 1234 p. illus. (part col.) 27 cm. \$10.00. 11c

Note: This encyclopedia is an arrangement, in alphabetical order, of the terms used in twelve major branches of science and technology—chemistry, physics, mathematics, engineering, astronomy, medicine, mineralogy, geology, aviation, navigation, botany, and zoology. The terms from the various fields have been chosen by an experienced scientist in those fields, who have prepared articles setting forth the facts that are most important, and most likely to be needed for reference by scientists, engineers, students, and the laymen who wish specific information. The size of the individual articles varies from short definitions to articles several pages in length on the important classes of chemical compounds, on the major phyla of plants and animals, on the basic methods of engineering construction, and on the other broad and general terms. Many tables are distributed throughout the book to summarize data, and large numbers of illustrations show operating principles of instruments and equipment, and structural details of organisms.

History

GINZBURG, BENJAMIN

The adventure of science. New York: Simon and Schuster, Inc., 1930. 487 p. illus. 24 cm. \$5.00. 12

Contents: Pythagoras: the birth of mathematical science. Aristotle: his science and his system. The Alexandrian period: Archimedes and Ptolemy. Copernicus and the revival of science. Galileo: the new science clashes with theology. Harvey and the circulation of the blood. Isaac Newton: science comes of age. Lavoisier: the father of scientific chemistry. Dalton and the atomic theory. Faraday and Maxwell: the science of electromagnetism. Helmholtz and the conservation of energy. Lamarck and Darwin: the doctrine of evolution. Pasteur: the germ theory of disease. Mendel and the science of heredity. Einstein and the theories of relativity. The atom and the quantum theory. Conclusion. Bibliographical notes. Index.

Note: A survey of some aspects of the history and development of science, covering the branches of mathematics, physics, chemistry, biology, bacteriology, and related fields, and presented from the biographical viewpoint of the lives of the better-known contributors to the advancement of scientific knowledge. The treatment is semi-popular and the subject matter, while intended for the layman, is not over-simplified.

NATIONAL RESEARCH COUNCIL

A history of the National Research Council, 1919-1933. Washington, D.C.: National Research Council, 1933. 61 p. 25 cm. (Reprint and circular series of the National Research Council. No. 106) Paper, \$0.50. 12a

Contents: Foreword, by W. H. Howell. General organization and activities, by Albert L. Harrows. Division of physical sciences, by F. K. Richtmyer. Division of engineering and industrial research, by Dugald C. Jackson. Division of chemistry and chemical technology, by Charles A. Klaus. Division of geology and geography, by W. H. Twenhofel. Division of medical sciences, by Stanhope Bayne-Jones. Division of biology and agriculture, by Ferdinand Phyné. Division of anthropology and psychology, by A. T. Poffenberger. Research information service, by Clarence J. Wkst. The divisions of general relations, by Albert L. Barrows. Division of Federal relations. Division of foreign relations. Division of states relations. Division of educational relations. Publications: Bulletin series. Reprint and circular series.

Note: A survey consisting of a series of short articles prepared by the chairmen of the various divisions, the director of the Research Information Service, and the assistant secretary of the Council, presenting a report of the activities of the Council since its organization upon a peace-time basis in 1919 to 1933.

PENNSYLVANIA UNIVERSITY. BICENTENNIAL CONFERENCE

Studies in the history of science, by E. A. Speiser [and others]. Philadelphia: University of Pennsylvania Press, 1941. 123 p. illus. 23 cm. \$1.50. 13

Contents: Ancient Mesopotamia and the beginnings of science, by E. A. Speiser. Some fundamental concepts in ancient astronomy, by O. E. Neugebauer. Medicine and surgery in ancient Egypt, by Hermann Ranke. Medieval medicine, by H. E. Sigerist. The rise of modern scientific medicine, by R. H. Stryck. Two centuries of surgery, by E. A. Graham. Logico-historical study of mechanism, vitalism, naturalism, by E. A. Stöger. The mathematical way of thinking, by Hermann Weyl.

Note: Although the subjects of these papers are scientific, the style is generally non-technical and understandable to the layman. "Two centuries of surgery" includes a brief list of references. In some of the other papers, footnotes refer to other literature on the subject.

SARTON, GEORGE

The history of science and the new humanism. Cambridge, Mass.: Harvard University Press, 1937. 196 p. illus. 19 cm. (Colver lectures in Brown University. Elihu Root lecture at the Carnegie Institution of Washington) \$2.00. 14

Contents: The faith of a humanist. The history of science and the history of civilization. East and West. The new humanism. The history of science and the problems of to-day.

Note: The author's main argument is that it is not sufficient to popularize scientific education: it is necessary to educate and humanize the scientists themselves to consider not only the science of today but also the beginnings and evolution of their knowledge. He asks and attempts to answer such questions as: Why does man thirst for knowledge? Why does he search for truth? To what extent are the scientists, the artists and the saints working together? As indicated in the half-titles, the book originated as lectures.

SARTON, GEORGE

Introduction to the history of science. Baltimore: Published for the Carnegie Institution of Washington by the Williams & Wilkins Company, 1931. 2 v. in 3. 26 cm. (Carnegie Institution of Washington. Publication no. 376) Vol. I, o.p.; Vol. II (in two parts), \$12.00. 15

Contents: Volume I: From Homer to Omar Khayyám. Volume II: From Rabbi Ben Ezra to Roger Bacon.

Note: A reference book which is essentially a biographical and bibliographical record of the history of early science. The author has defined science as "systematized positive knowledge" and has included prophets, philosophers and others not usually included in a history of science. In general, the work gives for each epoch a condensed survey of the developments in the various branches of learning, brief biographical and critical sketches of the most important men, references to the principal texts of their works and to the principal critical studies.

SARTON, GEORGE

The study of the history of science. Cambridge, Mass.: Harvard University Press, 1936. 75 p. illus. 22 cm. \$1.50. 16

Note: The inaugural lecture of a seminary on the history of science, delivered by the author at Harvard University in 1935. He points out that a study of the history of science must consider the development of science and technique from the earliest beginnings down to our own days, in all countries and by all people of all races and all faiths. There is an annotated bibliography which groups the recommended books under seven headings: historical methods; scientific methods; chief reference books for the history of science; journals and serials on the history of science; treatises on the history of science; handbooks on the history of science; societies and congresses.

SEDGWICK, WILLIAM THOMPSON, AND H. W. TYLER

A short history of science. Revised by H. W. Tyler and R. P. Bigelow. Second edition. New York: The Macmillan Company, 1939. 512 p. illus. 22 cm. \$4.00. 17

Contents: The dawn of civilization. Science begins in the East. The earliest Greek science. Science in the golden age of Greece. Greek science in Alexandria. The decline of Alexandrian science. The Roman world—the dark ages. Hindu and Arabian science—the Moors in Spain. Progress of science to A.D. 1450. A new astronomy and the beginnings of modern natural science. Mathematics and mechanics in the sixteenth and early seventeenth centuries. Natural and physical science in the seventeenth century. Beginnings of modern mathematical science. Natural and physical science in the eighteenth century. Modern tendencies in mathematical science. Some advances in the physical and chemical sciences during the nineteenth century. Some advances of natural science in the nineteenth century. Some inventions of the eighteenth and nineteenth centuries—applied science and engineering. Some important names, dates, and events in the history of science and civilization. A short list of reference books. Index.

Note: This book is partly based on Sedgwick and Tyler's *Short history of science*, New York, 1917. It is a useful brief survey of the development of the sciences to about the end of the nineteenth century, but its treatment of the important advances made in the twentieth century is inadequate. About 350 titles are cited in the bibliography.

THORNDIKE, LYNN

A history of magic and experimental science. New York: Columbia University Press, 1923-41. 6 v. 23 cm. \$5.00 each volume. 18

Contents (abridged): The first thirteen centuries of our era; Volume I: The Roman Empire. Early Christian thought. The early Middle Ages. Volume II: The twelfth century. The thirteenth century. Volume III: The outlook at the opening of the fourteenth century. John XXII and the occult arts. Alchemy of the later Middle Ages. Dastin. Perscrutator. Exafrenon and Ioccedron. Weather records. Ortolanus and his influence. Petrarch. Gentile da Foligno and fourteenth century medicine. Calculator and the rise of mathematical physics. Oresme. Works on poisons. Astrology. Alchemy of the late fourteenth century. Volume IV: Blasius of Parma. Astrological prediction. Surgery and medicine. Giovanni da Fontana. Michael Savonarola. Theology and astrology. Censors of superstition. Two liberal inquisitors. Alchemy through the fifteenth century. Conrad Heinger. Humanism in relation to natural and occult science. Magic in dispute. The attack on Pliny. Volume V: Intellectual conditions and characteristics of the sixteenth century. Leonardo da Vinci, "the magician of the Renaissance." Cycles and chiromancy. Nifo and demons. Pomponazzi on incantations. Agrippa and occult philosophy. Varied approaches to natural philosophy. Astrology of the early century. The aftermath of Regiomontanus. The Copernican theory. German medicine. Anatomy from Carpi to Vesalius. Cardan. The Paracelsan revival. Volume VI: Post-Copernican astronomy. The Catholic reaction. Medicine after 1550. The sixteenth century naturalists. The lore of gems. Efforts towards a Christian philosophy of nature. Natural philosophy and natural magic. Mystic philosophy. Divination. The literature of witchcraft and magic after Wier. Summary and by-products.

Note: This scholarly work presents a detailed and documented history of the rise of scientific thought and knowledge during the first sixteen centuries of the Christian era. The work is based on an examination of the original manuscripts and documents of the early writers, scientists, and historians in library collections throughout the world. The word "magic" as used in the title is understood in its broadest sense as including all occult arts and sciences, superstitions, and folklore. The author shows that magic and experimental science have been connected in the history of science, that magicians were perhaps the first to experiment, and that the history of both subjects can best be understood by studying them together. The development of mysticism and its effect upon the growth of religious thought is also outlined, and the separate histories of many of the sciences, such as astronomy, physics, medicine, biology, and mathematics, are interwoven in the general historical pattern. There are numerous abstracts of manuscripts and incunabula hitherto inaccessible to most scholars, and the large number of references cited in footnotes constitute an exhaustive bibliography. The subject of laws of magic, popular practice, witchcraft and persecution, have been excluded as

outside the scope of the present work. Each volume contains a general index and a bibliographic index.

Methodology and Philosophy

BENJAMIN, ABRAM CORNELIUS

An introduction to the philosophy of science.

New York: The Macmillan Company, 1937. 469 p. 22 cm. \$4.00. 19

Contents: Introduction. The field of the philosophy of science. Problems in the logic of science. Problems in the analysis of the concepts of science. Speculative problems. Index.

Note: This textbook for advanced college courses represents a scientific attempt to define the field of the philosophy of science, to indicate the main problems, and to discuss the main types of solutions. References to literature are appended to most of the chapters.

CONGER, GEORGE PERRIGO

A world of epitomizations; a study in the philosophy of the sciences. Princeton: Princeton University Press, 1931. 605 p. 24 cm. \$5.00. 20

Contents: A preliminary statement of the hypothesis of epitomization. Data of the natural and social sciences arranged to exhibit evolution and epitomization: The cosmogonic realm. The biotic realm. The neuropsychological realm. Data of logic, number, and geometry-kinematics arranged in accordance with the hypothesis of epitomization: The logical realm. The numerical realm. The geometric-kinematical realm. Some relationships between realms. The epitomization hypothesis and contemporary philosophy. Index.

Note: A synthesis of the data of the sciences, based upon detailed empirical evidence, which brings material from the various sciences into one hierarchical scheme of epitomization, showing the repetition of fundamental motives through all the complexities and levels of nature. For scholars interested in the philosophy of science.

DANTZIG, TOBIAS

Aspects of science. New York: The Macmillan Company, 1937. 285 p. illus. 22 cm. \$3.00. 21

Contents: The causal chain. The appeal to reason. The dawn of an era. Number. The infinite. The crisis. In quest of the absolute. The straight and the flat. On rigid standards. Signals. Models. Universes of discourse. Index of names. Index of subjects.

Note: A philosophical analysis of the meaning of modern science developed from the viewpoint of "faith in the reign of reason." Not a textbook, but written for philosophers and others interested in the interpretation and evaluation of science.

LENZEN, VICTOR FRITZ

Procedures of empirical science. Chicago, Ill.: The University of Chicago Press, 1938. 59 p. 24 cm. (International encyclopedia of unified science. Vol. I, no. 5) \$1.00. 22

Contents (abridged): Introduction. Observation. Systematization. Conclusion. Selected bibliography.

Note: Perception is dealt with as the basic procedure of empirical science, counting as the fundamental quantitative procedure; measurement is dealt with as the general procedure of assigning numbers to the properties of objects. The problem of the measurement of time, the measurement of weight, observation through causality, observation of microphysical entities and related topics are discussed.

NORTHROP, FILMER STUART CUCKOW

Science and first principles. New York: The Macmillan Company, 1931. 299 p. illus. 22 cm. \$3.50. 23

Contents (abridged): Preface. The significance of contemporary scientific thought. The theory of relativity. Quantum and wave mechanics and thermodynamics. The living organism. Man. The foundations of experience and knowledge. Index.

Note: An exposition in non-technical language is given of the theory of relativity, quantum, and wave mechanics, the second law of thermodynamics, the physiological nature of life, and certain genetical and neurological theories of the nature of man. New conclusions are reached by bringing these diverse materials to bear on the issues discussed by Whitehead, Russell, Eddington, Jeans, Spemann, Child, Driesch, Henderson, and others. Essentials, interconnection, and brevity are stressed, and in each case an analysis of doctrines and experimental evidence is made, to determine what concepts and principles are fundamental. The findings of one science are made to illuminate those of another, and a new scientific philosophy is discovered. This philosophy is developed far enough to indicate its suggestiveness for the humanities, as well as for the physical and biological sciences. The book is interesting to the layman, the technical scientist, and the professional philosopher. A substantial list of references and a bibliography are included after each chapter.

REISER, OLIVER LESLIE

Philosophy and the concepts of modern science. New York: The Macmillan Company, 1935. 323 p. illus. 22 cm. \$3.75. 24

Contents: Introduction. Part I, Philosophy and the physical sciences: Idealism and scientific reality. Man and the cosmos. The crisis in science. Vision and reality. Light as the link between logic and physics. Naturalism and the new physics. Emergence and field physics. Consciousness as a new dimension. The religion of light. Part II, Philosophy and the social sciences: History and ethics. The energetic interpretation of history. The philosophy of energetics. The emergence of cultural patterns. Creative morality. The social objectives of humanism. Index.

Note: This book integrates the facts and principles of the special sciences, and offers a scientific synthesis interpreted in terms of its humanistic implications. Dealing with philosophy first in relation to the physical sciences, then in relation to the social sciences, it discusses such questions as: Do the revolutionary findings of contemporary physical science require a non-Aristotelian logic for their interpretation? Is the "secret of the universe" locked up in the mystery of light? What is the significance of isomorphism for logic, physics, and psychology? What is the relation between Gestalt theory and the doctrine of "emergence?" How does "dialectical materialism" fit into the picture of science?

PORTERFIELD, AUSTIN L.

Creative factors in scientific research; a social psychology of scientific knowledge, studying the interplay of psychological and cultural factors in science with emphasis upon imagination. Durham, N.C.: Duke University Press, 1941. 282 p. 24 cm. (Duke University Press. Sociological series. No. 3) \$3.50. 25

Contents: Introduction: Problem and perspective. Part I, Cultural factors in science: The emergence of science in the social process. Cultural factors in scientific concepts and methods. Part II, Psychological factors in science: The meaning and significance of imagination. Flashes of insight in artist, inventor, and scientist, and grounds out of which new figures emerge. Imagination in scientific investigation. Part III, The interplay of psychological and cultural factors in some creative leaders in science: A creative leader in physical science: Galileo Galilei. A creative leader in the science of life: Charles Darwin. Creative leaders in the science of society: Auguste Comte and a century of his successors. Part IV, Creative factors and trends in the study of personality and society—implications for social control: Psychology and culture in the study of personality. Recent trends in sociology, sociological insight, and social control. Index.

Note: A critique of scientific methods, useful to social scientists in every field, and not without interest to biologists and physical scientists. The study develops a social psychology of scientific endeavor by studying the interplay of psychological and cultural factors in the development of science. It shows how the assumptions of the scientist are related to his cultural backgrounds and demonstrates the dependence of his techniques upon his methodological assumptions; indicates "that culture itself is the product of creative insight, and requires the same mental processes for its study and interpretation as were originally required for its origination and development"; emphasizes the fact "that the dynamic factor in research consists in the creative control of observation, experimentation, and reasoning." It illuminates its principles by drawing them out of and applying them to concrete materials.

RAMSPERGER, ALBERT GUSTAV

Philosophies of science. New York: F. S. Crofts and Company, 1942. 304 p. illus. 21 cm. \$2.35. 26

Contents: Democritus, Aristotle, and the medieval world view. The beginnings of modern science. The theory of representative perception. The theory of relativity. Philosophical conclusions. Is nature intelligible? Positivism. Reality and knowledge. Scientific knowledge. Causality, deduction and induction. Probability and statistical laws. Measurement and operational definition. Biological science. Determinism, free will, and morals. Science and human values. Bibliography. Index.

Note: A survey and discussion of the philosophical interpretation of science. The book may be used in college courses in the philosophy of science. It is also of interest to general readers and scientists.

WERKMEISTER, WILLIAM HENRY

A philosophy of science. New York: Harper and Brothers, 1940. 551 p. illus. 22 cm. \$4.00. 27

Contents: The dawn of modern science. The method of science. The disputes over space and time. The world about us and its interpretation. The symbolism of languages. Fundamental ideas of mathematics. Space and geometry. The new conception of matter. Problems of chemistry. Interpretations of life. Mind and personality. Free will and the laws of nature. From star-dust to man. Philosophical résumé. Subject index. Index of names.

Note: This book, primarily for senior college students, offers both a history of philosophies of science and a personal philosophy of science based on the author's belief that all knowledge is grounded in first-person experience. The applications of the author's point of view to natural languages, mathematics, physics, chemistry, biology, and psychology are shown. Pertinent literature is cited in footnotes throughout the book.

Popular Works

ANSHEN, RUTH NANDA, EDITOR

Science and man, twenty-four original essays by Aleš Hrdlička [and others]. Edited with an introduction and conclusion by Ruth Nanda Anshen. New York: Harcourt, Brace and Company, 1942. 494 p. 22 cm. \$4.00. 28

Contents: Ruth Nanda Anshen: Man as an element of every experiment. Aleš Hrdlička: The problem of human evolution. Reinhold Niebuhr: Religion and action. Jacques Maritain: Science and wisdom. Alfred E. Cohn: No retreat from reason. Arthur H. Compton: The purpose of science. Waldemar Kaempffert: Science, the machine and democracy. James T. Shotwell: Mechanism and culture. Harold C. Urey: The position of science in modern industry. K. Kofka: The psychologist among the scientists. Brand Blanshard: Fact, value and science. Bronislaw Malinowski: The scientific approach to the study of man. Carl L. Becker: The function of the social sciences. Julian Huxley: Science, natural and social. Walter B. Cannon: The body physiologic and the body politic. Karl T. Compton: Man and technology. Frank H. Knight: Fact and value in social science. Lewis Mumford: Looking forward. Philip C. Jessup: International law and totalitarian war. Hans Kelsen: Conditions of international justice. Harold D. Lasswell: The commonwealth of science. Jean Piaget: Intellectual evolution. Charles Gustav Jung: Human behavior. Edwin Grant Copekin: Science and ethics. Ralph Barton Perry: The science of value and the value of science. Ruth Nanda Anshen: Man, the microcosm. Index.

Note: Original essays written mainly from the related points of view of the relationship of science to society, and to man as an individual. Intended for general readers.

BLIVEN, BRUCE

The men who make the future. New York: Duell, Sloan and Pearce, 1942. 325 p. 22 cm. \$2.50. 29

Contents: The scientists look at our world. A glance at tomorrow. Genius: its cause and care. The genes and the hope of mankind. Hormones, enzymes and vitamins. The benzene rings and the riddle of life. Exit, the common cold. Between life and death: the viruses. Remaking the world of plants. New miracles

of atomic research. In the depths of the sky. The age of ingenuity. Scientists in uniform. The unsolved mysteries. A prescription for humanity. Science and civilization. Index.

Note: A popularized treatment of the scope, purpose, and results of scientific research in the fields of physics, medicine, chemistry, astronomy, and biology, written for the layman by the editor of *The New Republic*. The aim of the author is to bring to the public attention some of the recent discoveries of American laboratories.

CHASE, CARL TRUEBLOOD

Frontiers of science. New York: D. Van Nostrand Company, Inc., 1936. 352 p. illus. 22 cm. \$3.75. 30

Contents: The will to know. What the telescope reveals. Astrophysics. Relativity. The expanding universe. The habitability of other worlds. The heritage of modern physics. The quantum theory. Quantum mechanics. Fundamental particles. Cosmic rays. Background. A useful servant. What news from the front. The science of health. Immunology, glands and vitamins. Biochemistry and biophysics. Race-moulding under the microscope. The origin of life. Index.

Note: A discussion of some of the fields of investigation and discoveries of modern science. The book is addressed to intelligent lay readers.

DAVIS, WATSON

Science picture parade. New York: Duell, Sloan and Pearce, 1940. 327 p. illus. 24 cm. \$3.00. 31

Contents: Advance guard. Animals. Archaeology. Atoms. Aviation. Birds. Chemistry. Earth. Electricity. Health. Industry. Insects. Light. Mind. Plants. Radio. Stars. Transport. War. Weather. Future. Marching on. Index.

Note: A picture-book for the layman, presenting various aspects of scientific knowledge and technology through the medium of photographs, of which there are about 350, arranged by general subject matter as indicated above. The pictures are accompanied by descriptive captions as well as introductory chapters which outline the subject matter of each group and point out the recent technological advances.

DIETZ, DAVID

The story of science. Fourth edition, new and revised. New York: Dodd, Mead and Company, 1942. 387 p. illus. 21 cm. \$3.00. 32

Contents: Part I, The story of the universe: The scale of the universe. The moon. The sun. Eclipses. The solar system. Comets and meteors. The stars. The nebulae. The structure of the universe. Part II, The story of the earth: The earth's record. The earth's beginning. The earth's interior. The earth's crust. The earth's changing surface. Mountain-building. The record in the rocks. Part III, The story of the atom: The nature of matter. X-rays, radium, and the electron. The structure of the atom. Gases, liquids, and solids. Energy and radiation. The quantum theory. The Einstein theory. Part IV, The story of life: From magic to science. The nature of life. Bacteria. Plants and animals. Evolution. Man. Mind. The unity of the universe. Bibliography. Appendix. Index.

Note: A popularized treatment of the latest facts and theories, written to give the layman a unified and organized view of modern science. Historical data has been introduced only where it serves to show the development of scientific ideas. The fourth edition contains new material on atomic theory, including recent advances concerning the nature of cosmic rays, atomic nuclei, wave mechanics, artificial radio-activity, new technique of making motion pictures of the solar atmosphere, the latest tests of the theory of relativity, and other advances. There are also additions to the bibliography covering 1934-1942.

FREEMAN, IRA MAXIMILIAN

Invitation to experiment, with photographs and drawings by Mae and Ira Freeman. New York: E. P. Dutton & Co., Inc., 1940. 238 p. illus. 21 cm. \$2.50. 33

Contents: The stuff the world is made of. Still waters. Now, take the air. Mechanism. Matters of gravity. This dynamic universe. Air in action. Gyration. Of drops and bubbles. Sound comment. Music in the air. Up and down the thermometer.

When molecules dance. What strange attraction. Electricity at rest. Electricity at work. Shadows and reflections. Light errant. Beyond the rainbow. Light and sight.

Note: An informal and non-technical explanation, for the general reader, of various physical principles, together with simple illustrative experiments which can be performed at home. The book contains numerous diagrams and photographs.

GRAY, GEORGE WILLIAM

The advancing front of science. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1937. 364 p. illus. 23 cm. \$3.00. 34

Contents: New horizons. Frontiers of earth. The shining stars. Skies are reddening. The encircling darkness. The cosmic bombardment. Deeper into the atom. The new science of sound. Chemistry advancing. A chemist on vacation. Life and the quantum. Where life begins. Machines which imitate life. Thinking machines. Chemistry and thinking. Can we live longer? Epilogue—The promise of science. Index.

Note: The readable essays in this volume treat mainly of research and discoveries made in astronomy, physics, chemistry, and other branches of science in the years just prior to the book's publication. They are intended for the general reader.

GRAY, GEORGE WILLIAM

New world picture. Boston: Little, Brown, and Company, 1936. 402 p. illus. 21 cm. \$3.50. 35

Contents: Part I, New eyes on the universe: World. Eyes. Part II, Macrocosm: World machine. No hitching posts. World stuff. World structure. Whirlpool. Wilderness. Scattering. Part III, Microcosm: Electron. Within the atom. Plus and minus. Quantum. Mechanism. Uncertainty. Epilogue: Meanings. The sequence of the chemical elements. Some suggested books. Index.

Note: An introduction for educated general readers to the physical world as it appears from the viewpoint of modern science. The book discusses both the universe as it has been revealed by modern astronomy and the atom as it has been revealed by modern physics.

GRAY, GEORGE WILLIAM

Science at war. New York: Harper and Brothers, 1943. 296 p. 21 cm. \$3.00. 36

Contents: Preface. Prologue: Science and the warrior. The physicists' war. The historical relationship of war and science. The office of scientific research and development. Force to the utmost. Electric warfare. The next decimal place. Out of the crucibles. The new materials. War medicine and war surgery. Aeromedicine. The war of ideas. Epilogue: Science and the new world. Note of acknowledgment. Index.

Note: A review for lay readers of the interrelation of science and war, with an account of current developments that have proved most important in the present war effort, particularly in physics, mathematics, chemistry, biology, and psychology.

JAFFE, BERNARD

Outposts of science; a journey to the workshops of our leading men of research. New York: Simon and Schuster, 1935. 547 p. illus. 24 cm. \$3.75. 37

Contents (abridged): Genetics: the fruit fly, *Drosophila*, becomes the biological Cinderella. Anthropology: how digging into man's prehistory has rattled many bones of contention. Physical disease: medical research is straining to lengthen life's tether. Cancer: man struggles with the anarchy of the cell. Glands: looking at personality through chemical crystals. Mental diseases: how man still gropes in this, the devil's own domain. Vitamins: new hungers of satiety. Insects: will the insect's instincts outlive man's intellect? Matter: is the solid stuff of matter but a wave of probability? Radiation: are cosmic rays the birth cries of new elements? Astrophysics: how man is bringing the sun down to earth. Weather: long-range forecasting. Galaxies: new worlds built of spectral lines and mathematical symbols. Sources and reference material. Index.

Note: An account for general reading of the advances made in many fields of scientific research. The sources at the end of the book comprise a rather extensive bibliography of books on the subjects of the various chapters.

LYNDE, CARLETON JOHN

Science experiences with ten-cent store equipment. Scranton, Pa.: International Textbook Company, 1941. 256 p. illus. 20 cm. \$1.60. 38

Contents (abridged): Sound. Music. Musical toys. Noise. Light. Mirrors. Shadow shows. Light in water. Lenses. Colors in the daytime. Colors at night. Your eyes. Optical illusions. Sunlight in a dark room. Static electricity. Magnetism. Battery current. Lighting current. Explanations. Where to get your equipment. Index.

Note: The third book of a series which presents simple scientific experiments and tricks which can be performed at home with inexpensive equipment. The other titles in the series are by the same author and are titled *Science experiences with home equipment*, Scranton, Pa.: International Textbook Company, 1937, 226 p., \$1.34; and *Science experiences with inexpensive equipment*, Scranton, Pa.: International Textbook Company, 1937, 226 p., \$1.34.

THE MARVELS AND MYSTERIES OF SCIENCE; an outline of scientific knowledge in astronomy, biology, chemistry, physics, geology, anthropology written in popular style by Clyde Fisher, John H. Goffould, James P. Poole [and others]. New York: W. H. Wise & Company, Inc., 1941. 818 p. illus. 23 cm. \$2.95. 39

Contents: The wonders of the heavens, by Clyde Fisher: The sun. The moon. The planets. Comets and meteors. The stars. Our home, the earth, by T. T. Quirk: How the earth began. Time and temperature. The atmosphere. Water in all its forms. The environment of man. The nature of matter and energy, by John A. Tamm: The importance of molecules and atoms. Heat. Sound. Light. Magnetism and electricity. Organic chemistry. The marvel of living things, by John H. Goffould and James P. Poole: The nature of life. The plant world. The simpler sorts of invertebrates. Arthropods. The lower group of vertebrates. Birds. Mammals. Conclusions: evolution and heredity. Man and his works, by Clark Wissler: Human paleontology. Modern peoples. Ethnology and archaeology. Cultural anthropology. Index.

Note: A simply-written, illustrated survey of many phases of scientific knowledge, written for the interested layman possessing no formal training in the sciences, as well as for the student of high-school grade. Numerous facts of general interest are briefly presented, accompanied by descriptive drawings and photographs. A rather wide range of subjects is covered, from the composition of the sun to the physiology of the amoeba, but each is treated in very brief detail.

RATCLIFF, JOHN DRURY

Modern miracle men. New York: Dodd, Mead and Company, 1939. 311 p. illus. 22 cm. \$3.00. 40

Contents: That we may live. The sick ferret. Pneumonia: killer no. 1. Life in a box. Man from Seeley Creek. An ounce of prevention. Vitamins. All-American job. Food hunt. Bedside miracle. Pests. Men of Foggy Bottom. U.S.P.H.S. Life's beginning. Food for the hungry. The ailing zebu. 91 billion acre farm. The magic valley. The big freeze. On the banks of the oyster. Dirtless farm. Work ahead.

Note: A popularized account of the achievements of scientists in modern agriculture and in medical research laboratories. Among the subjects treated are infantile paralysis treatment, blood-collecting and serum-distributing agencies, pellagra control measures, metabolism studies, control of parasitical diseases, the United States Public Health Service, the Harvard Biological Laboratory research work, soil conservation, hydroponics, quick-frozen foods, and selective breeding. The style is somewhat conversational and colloquial.

REYNOLDS, NEIL BAILEY, AND ELLIS L. MANNING, EDITORS

Excursions in science. New York: McGraw-Hill Book Company, Inc., 1939. 307 p. 21 cm. \$2.50. 41

Note: Short talks given by thirty scientists on an American radio program in 1936 are collected in this volume for general readers. Typical essays are: Simple experiments in science, by Irving Langmuir. The nature of lightning, by Karl B. Macdonald. The red planet Mars, by Frederick W. Glover. How earthquakes

give us the inside facts, by Edward S. C. Smith. Men and metals, by Earl R. Parker. How your radio tubes work, by Elmer D. McArthur. The machinery of heredity, by Caryl P. Haskins. Electron optics, by Ralph P. Johnson. The limitations of science, by Laurence A. Hawkins.

SHAPLEY, HARLOW, AND OTHERS, EDITORS

A treasury of science, edited by Harlow Shapley, Samuel Rapport and Helen Wright; with an introduction by Dr. Shapley. New York: Harper & Brothers, 1943. 716 p. 22 cm. \$3.95. 42

Contents: Introduction. Science and the scientist. The physical world: A. The heavens. B. The earth. C. Matter, energy, physical law. The world of life: A. The riddle of life. B. The spectacle of life. C. The evolution of life. The world of man: A. From ape to civilization. B. The human machine. C. The conquest of disease. D. Man's mind. E. Man's future.

Note: The essays in this anthology were chosen primarily to illustrate the status and contributions of modern science, but a few classics of scientific writing have been included also. The book is for general reading. There is no index.

WARD, HAROLD, EDITOR

New worlds in science; an anthology, edited with commentary and introduction by Harold Ward. New York: R. M. McBride and Company, 1941. 670 p. illus. 24 cm. \$1.98. 43

Contents: Antiquity of man, by E. A. Hooton. Ascaris, the story of a worm, by Richard Goldschmidt. The ways of warrior ants, by Caryl P. Haskins. King typhus, by Hans Zisser. Invasion from Africa, by Raymond B. Fosdick. Virus hunters, by W. M. Stanley. Two medical pioneers, by Henry E. Sigerist. Battlefronts in medicine, by Iago Goldston. The devil's own domain, by Bernard Jaffe. The fight for life—Chicago speaking! by Paul De Kruif. Co-operation—a biological necessity, by W. C. Allee. The pattern of evolution, by Ralph W. Gerard. People: too many or too few? by Henry Pratt Fairchild. Human biology and politics, by J. B. S. Haldane. Who is superior? by Ruth Benedict. The roads ahead, by Kirtley F. Mather. Science the civilizer, by Hyman Levy. Mathematics, mirror of civilization, by Lancelot Hogben. God is not a mathematician, by Bertrand Russell. On the method of theoretical physics, by Albert Einstein. The omnipotent electron, by Karl T. Compton. Atoms and cyclotrons, by Arthur K. Solomon. To the sun—and beyond, by Waldemar Kaempffert. More power to us! by Gerald Wendt. When physics goes farming, by George Russell Harrison. Deserts on the march, by Paul B. Sears. The palace of Aladdin, by Alvin F. Harlow. A world of change, by E. R. Weidlein. Circumventing the inventor, by Bernhard J. Stern. Conscripting science for war, by Julian Huxley. Science—not guilty! by Robert A. Millikan. Make way for tomorrow! by J. D. Bernal. Epilogue: News from the future, by Hermann J. Muller.

Note: The essays have been selected from the writings of English and American scientists and scientific writers published during the ten years just preceding the publication of the volume. The selection was made for general readers rather than specialists.

WENDT, GERALD

Science for the world of tomorrow. New York: W. W. Norton & Company, Inc., 1939. 316 p. illus. 21 cm. \$3.00. 44

Contents: Life in the age of science. Sources of wealth and power. The world grows smaller. The exchange of ideas. The science of daily living. Three times a day. Long life and healthy. Necessary luxuries. Time to live. The scientific attitude. Index.

Note: Popular essays on modern science and its importance in modern living. The book was published at the time of the New York World's Fair and is a kind of scientific interpretation of it.

French, John Grant Woodruff, Clement Long Henshaw and David Woolsey Trainer, Jr. Revised edition. New York: Harper and Brothers, 1942. 719 p. illus. (part col.) 22 cm. \$3.75. 46

Contents: The solar system. Origin of the solar system. The earth's crust. Age of the earth. The atmosphere and the hydrosphere. Our changing earth. The earth's past. The meaning of energy. Waves and their motion. Sound energy. Heat energy. Electrical energy. Light energy. Structure of matter. Radiant energy. Free electrons. The realm of the nucleus. The chemical elements and the periodic system. Chemical structure. Acids, bases, salts, and ionic equilibrium. Organic compounds. The production and use of chemicals. Chemical synthetics and substitutes. The sun. Stars. Plumbing the depths of the universe. "Carving out the universe." Index.

Note: A textbook for beginning college courses, developed at Colgate University, Hamilton, N. Y. The authors have designed it to give the student a panoramic view of the universe in which he lives and of his relation to it, rather than to give him samplings of various branches of science. It is suitable also for the general reader who desires a substantial elementary survey of men's knowledge of the universe. Review questions and lists of books for further reading are appended to the chapters.

BAWDEN, ARTHUR TALBOT

Man's physical universe; a survey of physical science for colleges. Revised edition. New York: The Macmillan Company, 1943. 832 p. illus. 24 cm. \$4.00. 47

Contents: The intelligent solution of problems as they arise is the price of liberty. The universe is a vast system of parts moving and changing under the influence of a flow of energy. Continuous changes in the earth's surface have brought about conditions which make possible the life of modern man. Man has applied his knowledge of physical properties and physical changes to overcome many physical limitations. Man has discovered and harnessed different forms of energy. Energy may be propagated through the ether and through matter by means of vibrations. The applications of magnetism and electricity have greatly modified the activities of mankind. Man is mastering his material world through an ever-increasing understanding of its nature. Creative chemistry has contributed greatly to man's physical progress. Man's physical welfare is the most important problem of physical science. Conclusion. Bibliography. Index.

Note: For first science courses in colleges. Material on polarized light, fluorescence, air conditioning, soilless agriculture, synthetic fibers, and other new topics has been added in this edition. The bibliography is limited to books.

CABLE, EMMETT JAMES, AND OTHERS

The physical sciences, by Emmett James Cable, Robert Ward Getchell and William Henry Kadesch. New York: Prentice-Hall, Inc., 1940. 754 p. illus. (part col.) 23 cm. \$5.00. 48

Contents (abridged): The dawn of science. Man and his machines. Force and motion. Fluids and fluid pressure. Molecules and their behavior. States of existence. Heat as a form of energy. Our atmosphere. Weather forecasting. Sound. Illumination. The eye. Optical instruments. Color. Spectra. Electrostatics and magnetism. Electric currents. Some fundamental chemical processes. Ionization and equilibrium. Nitrogen and its compounds: other gases of the atmosphere. The halogens. The classification of the elements. Some common metals. Carbon and its compounds. Organic and food chemistry. The earth and its rocks. Earthquakes and volcanism. The earth's past. Astronomy, ancient and modern. Latitude, longitude, and time. Our moon a cold dead world. Science and the world of tomorrow. Reading references. Questions. Index.

Note: An introductory work designed for use in general science courses in colleges. Special efforts have been made to make the volume readable and typographically attractive.

CHERONIS, NICHOLAS DIMITRIUS, AND OTHERS

The study of the physical world, by Nicholas D. Cheronis, James B. Parsons, and Conrad E. Ronneberg. Boston: Houghton Mifflin Company, 1942. 884 p. illus. 24 cm. \$3.85. 49

Textbooks

ALLEN, JOHN STUART, AND OTHERS

Atoms, rocks and galaxies; a survey in physical science, by John Stuart Allen, Sidney James

Contents (abridged): The relation of mathematics to science. A first look at the world. The concept of time. The crumbling rocks. The waters wear the stones. The lofty mountains. Mountains of fire. Motion and force. Universal force. The moon. The planets. The astronomical yardstick. The sun. The measurement of energy. Heat. Heat engines. Combustion and other transformations of matter. The nature of the electric charge. The electrical nature of matter. The architecture of the atom. Periodic classification of the elements. The driving forces of chemical reactions. The inert gases and non-metals. Metals. Carbon. Fuels. Foods and nutrition. Electrons in motion. Magnetism. Electricity at work. The distribution and use of electric power. Transforming energy by wave motion. The nature of sound. The eyes of science. What is light? Messages from the stars. Spectra. A stellar catastrophe. Inquiries into the past. The five volumes of geologic history. Index.

Note: A textbook for use in college survey courses in physical science as part of a general education program. An attempt is made to develop in the student an appreciation of the scientific method so that general principles may be applied to practical situations. An outline of modern science and industry and the social implications involved is also presented. The greater part of the book is devoted to the elementary principles of physics, with additional sections on meteorology, astronomy, geology, chemistry, mathematics, and related sciences. Study exercises and selected bibliographies appear at the end of each chapter.

CLARK, CLARENCE C., AND OTHERS

This physical world; a college course in science by Clarence C. Clark, Carl Albert Johnson, and Laurence Marsham Cockaday. New York: McGraw-Hill Book Company, Inc., 1941. 528 p. illus. 23 cm. \$3.25. 50

Contents: The beginning. Looking upward. The celestial family. Building particles. Reaction. Combining and separating. Man-made. Heat and cold. Labor saving. Nature's intangibles. Visible radiation. Invisible radiation. Moving electrons. Electrons in glass houses. Message's wings.

Note: This textbook is intended for use as a survey of the physical sciences for beginning college students. A companion volume, *This living world*, by C. C. Clark and R. H. Hall (see Index) covers the biological sciences from the same viewpoint.

EHRET, WILLIAM FREDERICK, EDITOR

Physical science, by William F. Ehret, editor, Leslie E. Spock, Jr., Walter A. Schneider, Carel W. Van der Merwe and Howard E. Wahlert. New York: The Macmillan Company, 1942. 639 p. illus. 24 cm. \$3.90. 51

Contents: The scientific method. Science and measurement. The earth's place in the universe. Cosmology. The electrical nature of matter. The nature of atoms. Motion and force. Work and energy. Heat and temperature. The physical behavior of fluids. Discovering scientific laws. The states of matter. The atmosphere and the weather. Surface waters of the earth. The work of wind and ice. Chemical changes. Oxygen, hydrogen, and the rate of chemical reactions. Water and solutions. Chemical equilibrium. The periodic classifications. Metals and metallurgy. Salt and limestone. Heavy chemicals. Compounds of carbon. Igneous rocks and volcanoes. Weathering and sedimentary rocks. Diastrophism. Geologic change and time. Wave and motion. Sound and acoustics. Light. Electric currents—heating and chemical effects. Electricity and magnetism. Radioactivity—the transmutation of elements. The nature of scientific reasoning.

Note: A textbook designed for use in introductory science courses in colleges. It was developed at New York University. The treatment is more rigorous than in some works of this type. The chapters are accompanied by exercises, lists of topics for further study, and suggestions for supplementary reading.

HAUSRATH, ALFRED HARTMANN, AND JOHN H. HARMS

Consumer science; a fusion course in physical science applied to consumer problems. New York: The Macmillan Company, 1939. 692 p. illus. 24 cm. \$2.44. 52

Contents (abridged): Understanding science: The nature of things. Solving science problems. Living with machines: Getting work done. Simple machines that serve man. Machines that use

liquids or air. The steam engine. Aircraft. The automobile. Everyday electricity: Magnetism. The electric motor. How electricity is produced. Measuring electricity in the home. Electricity and its transmission. Commercial uses. The magic of communication. Applied chemistry: The mysterious behavior of matter. The chemical reservoir. Fire and fuels. The big three of chemical compounds. Metals more valuable than gold. New giants in industry—synthetics. Applying consumer science: Automobile lubrication. Motor fuel. Tires. Producing heat economically. Refrigeration and air conditioning. Using light efficiently. Photography for everybody. What sound waves bring us. Science and the welfare of man: Safety in the home, on the highway. Science and the destiny of man. Index.

Note: The purpose of this book for students of home economics, as well as general college students, is to teach the basic principles of science through discussion of the familiar objects and occurrences of everyday life and the application of these principles to the solution of many problems relating to the home and to everyday business. The consumer viewpoint is stressed throughout. An attempt is made to acquaint the student with the broad outlines of science insofar as they affect his material comforts and well-being and those of his society. There are questions at the beginning of each topic to stimulate interest and problems to be answered at the end of each chapter.

JEAN, FRANK COVERT, AND OTHERS

Man and his physical universe, by Frank Covert Jean, Ezra Clarence Harrah and Fred Louis Herman, with the editorial collaboration of Samuel Ralph Powers. Boston: Ginn and Company, 1943. 607 p. illus. 23 cm. \$3.50. 53

Contents (abridged): Unit i, Man's increased knowledge of the cosmos has modified his thinking: Ancient man's limited knowledge of the heavens. Application of the scientific method. Use of astronomical instruments. Study of nebulae. The sun. Conception of the solar system. Superstitions displaced by scientific knowledge. Time and position from astronomical bodies. Unit ii, The fundamental distinction formerly supposed to exist between matter and energy has been broken down: Matter a special form of energy. Nature and constitution of matter. Unit iii, Matter as organized energy possesses properties which are indispensable to man: The new concept of matter and chemical changes. Organic and colloidal chemistry. Unit iv: Energy in many forms is used by man to advance civilization. Unit v: The hydrosphere and the atmosphere are the chief factors of weather. Unit vi: The earth's surface is continually changing. Glossary. Index.

Note: A textbook for courses in general science for college freshmen. It is designed to present a broad survey of astronomy, physics, and chemistry in a clear and interesting manner. Mathematical treatment of even the simplest kind has been eliminated, the emphasis being upon those practical applications of science which are experienced in everyday life and which are basic to our present stage of technological achievement. Study questions and short bibliographies are given at the end of each chapter, and there is a large number of photographs and drawings. The work is a companion volume to the authors' *Man and his biological world*, Boston, 1934 (see Index). Both works are revisions of the authors' *An introductory course in science for colleges*, Boston: Ginn and Company, 1934, 2 volumes.

KRAUSKOPF, KONRAD BATES

Fundamentals of physical science; an introduction to the physical sciences. New York: McGraw-Hill Book Company, Inc., 1941. 660 p. illus. 23 cm. \$3.50. 54

Contents: The solar system. Matter and energy. The structure of matter. Fundamental processes. The biography of the earth. Stars and galaxies.

Note: A presentation of the fundamentals of physics, chemistry, astronomy, and geology as a unified field of knowledge. The language is simple, with a minimum of technical terms, and abstract concepts are illustrated by concrete examples. Emphasis is placed upon basic principles and methods of scientific reasoning. The book is intended for use in introductory college courses. Also, it is suitable for general readers who wish a reliable discussion of these branches of science.

RICHARDS, HAROLD FREDERIC

The universe surveyed; physics, chemistry, astronomy, geology; with a preface by Kirtley

F Mather. New York: D. Van Nostrand Co., Inc., 1937. 722 p. illus. 22 cm. \$3.50. 55

Contents (abridged): The earth as an astronomical body and our neighbors in space. The nature of matter and energy. The controlled changes, or forced evolution, of our physical environment. The uncontrolled changes, or geological evolution, of our physical environment. Astronomical supplement. Appendix. Index.

Note: Primarily for use in introductory college courses in science, this textbook aims to introduce the student to the physical sciences. It is simply and clearly written in narrative fashion and therefore is suitable for the general reader as well. The appendix contains true-false reviews for each section.

WATKEYS, CHARLES WILLIAM, EDITOR

An orientation in science, by eleven members of the University of Rochester faculty. New York: McGraw-Hill Book Company, Inc., 1938. 560 p. illus. 23 cm. \$3.50. 56

Contents: Introduction, by Charles W. Watkeys. Astronomy, by Floyd C. Fairbanks. Geology (Part I), by Harold L. Alling. Chemistry (Part I), by Ralph W. Helmkamp. Physics, by T. Russell Wilkins. Chemistry (Part II), by Ralph W. Helmkamp. Geology (Part II), by Harold L. Alling. Biology, by Curt Stern. Paleontology, by J. Edward Hoffmeister. Physiology, by Ray G. Daggs. Bacteriology, by Ralph P. Tittsler. Psychology, by William Berry. Mathematics, by Charles W. Watkeys. Scientific method, by W. Edwin Van de Walle. Index.

Note: A broad survey designed primarily to give college students an introduction to the more important principles and problems of science, an understanding of scientific method, and an insight into the relationships among the various fields of science. It is based on a long experience in teaching general science to college students. The book can be recommended for general readers also.

Tables

NATIONAL RESEARCH COUNCIL

International critical tables of numerical data, physics, chemistry and technology, prepared under the auspices of the International Research Council and the National Academy of Sciences by the National Research Council of the United States of America; editor-in-chief: Edward W. Washburn, associate editors: Clarence J. West [and] N. Ernest Dorsey. New York: Published for the National Research Council by the McGraw-Hill Book Company, Inc., 1926-30. 7 v. illus. 28 cm. Single volumes, \$12.00 each; complete set with index, \$90.00. 57

Index. Volumes I-VII. Compiled by Clarence J. West, with the collaboration of Callie Hull. New York: Published for the National Research Council by the McGraw-Hill Book Company, Inc., 1933. 321 p. 28 cm. \$6.00. 57a

Note: A compilation of tables collected and critically evaluated by some 300 experts, including chemists, physicists, and engineers of the United States, Canada, Great Britain, Belgium, France, Italy, Austria, Germany, Denmark, Switzerland, Holland, Australia and Japan. Briefly stated, the purpose of *International Critical Tables* is to present the most reliable available quantitative information of the following types: (1) the mechanical, thermal, chemical, thermodynamic, electric, magnetic, optical, and acoustical properties of pure substances and of solutions and mixtures both for the crystalline, the liquid, and the gaseous state and for combinations of two or more of these states, (2) the same and other properties for a great variety of industrial products and natural materials, (3) various characteristics of the earth and the solar and sidereal system and its members, and (4) numerical data relating to instruments, apparatus, laboratory technique or operations, and control of laboratory or factory

conditions. This work is supplemented by: National Research Council, American Committee on Annual Tables, *Annual tables of physical constants and numerical data*, Princeton, N. J.: Frick Chemical Laboratory, a publication issued periodically in looseleaf form.

Annals

CARNEGIE INSTITUTION OF WASHINGTON

Year book no. 42, July 1, 1942-June 30, 1943. With administrative reports through December 7, 1943. Washington, D.C.: Carnegie Institution of Washington, 1943. 208 p. illus. 25 cm. Paper, \$1.00; cloth, \$1.50. 58

Contents (abridged): Report of the president. Reports of departmental activities and cooperative studies: Astronomy. Terrestrial sciences. Biological sciences. Historical research. Bibliography. Index.

Note: Presents summaries of the activities of each department of the institution during the period indicated, including staff and organization, personnel, reviews of the year's progress in each division or study project, with special mention of the work of each investigator. Bibliographies of books added to the libraries of each division during the year are also given. A general report by President Vannevar Bush and a financial statement are included.

RATCLIFF, JOHN DRURY, EDITOR

Science year book of 1944. New York: Doubleday, Doran and Company, 1944. 218 p. 21 cm. \$2.50. 59

Contents: Part I, Medical research: Miracle from mold, by Mona Gardner. Safe, painless childbirth, by Morris Nishbein. Front-line medicine, from *Fortune*, July 1943. Pain blackout, by Myron M. Stearns. Dr. Orr packs them in plaster, by Leigh White. Quick repair for broken bones, by Elsie McCormick. Flu fighters, by Greta Palmer. New weapon against influenza, by John Moreland. Block that bloodclot! by Hannah Lees. The camera fights a killer, by Hermann B. Deutsch. Part II, Physics and chemistry: Electronics, a lever on industry, from *Fortune*, July 1943. Radar, the super sleuth, by Donald Wilhelm. The betatron, by A. R. Wildhagen. Baby lightning, by Paul W. Kearney. The magic top, by Francis Still Wickware. Part III, Agriculture and nutrition: New crops for the Americas, by Samuel Zetzmurray. Quinine comes home, by Charles Morrow Wilson. Better cows via artificial insemination, by Hickman Powell. The great crops move, by Charles Morrow Wilson. Food that fights, by Helena Huntington Smith. The culprit, histamine, by L. W. Giellerup. The telltale eye, by Hannah Lees. Part IV, Aviation and other sciences: Park on a cloud, by Gurney Williams. Silent ferries, by Robert McCormick. The stratosphere, tomorrow's airway, by Jim Marshall. A new weapon, weather, by Marquis W. Childs. A new science, how to fall, by James Thomas Flexner. Cycles, the key to the future, by Edward Russell Dewey. The house of tomorrow, from *Fortune*, April 1943.

Note: An annual collection of popular science articles selected from the nation's best-selling periodicals. The editor summarizes the contents of each chapter in introductory paragraphs.

SMITHSONIAN INSTITUTION

Annual report of the Board of Regents of the Smithsonian Institution, showing the operations, expenditures and condition of the Institution for the year ended June 30, 1943. Washington, D.C.: Government Printing Office, 1944. 609 p. illus. (part col.) 23 cm. \$2.00. 60

Contents (abridged): List of officials. Appendixes: Reports on: United States National Museum. National Gallery of Art. National Collection of Fine Arts. Freer Gallery of Art. Bureau of American Ethnology. International Exchange Service. National Zoological Park. Astrophysical Observatory. General appendix: Solar radiation, by C. G. Abbot. Some biological effects of solar radiation, by Brian O'Brien. The sea as a storehouse, by E. F. Armstrong. Progress in new synthetic textile fibers, by Herbert R. Mauerberger. Petroleum geology, by William B. Heroy. The 1942 eruption of Mauna Loa, Hawaii, by Gordon A. Macdonald. New metals and new methods, by C. H. Desch. Oceanography,

by Henry C. Stetson. The ocean current called "The Child," by Eliot G. Mears. Maps, strategy, and world politics, by Richard Edes Harrison and Robert Strausz-Hupé. The natural-history background of camouflage, by Herbert Friedmann. Dangerous reptiles, by Doris M. Cochran. The plants of China and their usefulness to man, by Egbert H. Walker. Natural rubber, by O. F. Cook. Lessons from the Old World to the Americas in land use, by Walter Clay Lowdermilk. Areal and temporal aspects of aboriginal South American culture, by John M. Cooper. Origin of the Far Eastern civilizations, by Carl Whiting Bishop. Contours of culture in Indonesia, by Raymond Kennedy. The Arab village community of the Middle East, by Afif I. Tannous. Chemotherapeutic agents from microbes, by Robert L. Weintraub. Sulfonamides in the treatment of war wounds and burns, by Charles L. Fox, Jr. The yellow fever situation in the Americas, by Wilbur A. Sawyer. Some food problems in wartime, by George R. Cowgill. Index.

Note: This annual publication presents the expected reports on finances and routine activities, but its most valuable feature is the series of papers in the General appendix. For the most part, these papers represent original contributions to knowledge or are summaries of recent research. Most of them contain illustrations and bibliographies.

Scientific Expeditions

ANDREWS, ROY CHAPMAN, AND OTHERS

5086 The new conquest of central Asia; a narrative of the explorations of the Central Asiatic expeditions in Mongolia and China, 1921-1930, by Roy Chapman Andrews, leader, with chapters by Walter Granger, Clifford H. Pope, and Nels C. Nelson. Summary statements by G. M. Allen, R. C. Andrews, C. P. Berkey [and others]. New York: The American Museum of Natural History, 1932. 678 p. illus. 28 cm. (Central Asiatic Expeditions. Natural history of central Asia. Vol. 1) \$10.00. 60a

Contents (abridged): Part I, Exploration in Mongolia: Plans and preparations. The expedition starts. The southern grasslands. The first fossils. Tuerin. Urga to Tsentsenwang. Sain Noin and the hot springs of Arishan. Southward into the desert. Birds and animals of the Tsagan Nor basin. Mongols and their recent political history. Discovery of the Baluchitherium. Return to Peking. Dinosaurs at Iren Dabusu. Discovery of the dinosaur eggs. Professor Osborn visits the expedition. The dune dwellers of Shabarakh Usu, culture and Cretaceous mammals. Western and southern explorations. The end of the 1925 expedition. New formations at Shara Murun. Westward into a land of desolation. Success at last. A new Baluchitherium. New discoveries in the east. The shovel-tusked mastodon. End of the 1928 expedition. Start of the 1930 expedition. The grave of the shovel-tusked mastodon. Wolf camp. Good-bye to Mongolia. Part II, Explorations in China: The hunt for Takin in southern Shensi. Collecting in northern and central China, by Clifford H. Pope. Paleontological exploration in eastern Szechwan, by Walter Granger. Part III, Summary statements. Appendixes. Bibliography. Index.

Note: This book is an introduction to the scientific publications on the exploration of the Central Asiatic Expeditions in Mongolia and China from 1921 to 1930, and tells how the work was done, gives a picture of the country itself, of the daily life in camp and on the trail, of the transport by camels and motor cars, and of the principal discoveries in the various branches of science represented. It has been written to give the layman a comprehensive view of the expeditions and makes no attempt to discuss the discoveries in detail. Features of the book are its large format, the number of photographs reproduced, particularly those taken with a panoramic camera, and the comprehensive index.

ANDREWS, ROY CHAPMAN

This business of exploring. New York: G. P. Putnam's Sons, 1935. 288 p. illus. 24 cm. \$3.50. 61

Contents: Exploritis. Danger. Snakes. Random reminiscences of animals. Wolf of Mongolia. Superstition. J. McKenzie Young—explorer. War in Peking. Attempts to reach Mongolia. Politics and people. In the desert at last. Gobi sandstorms. Westward into

the desert. Eastward into a new land. Discovery of the Baluchitherium. End of the 1928 expedition. The mysterious lake. The fate of the rash Platybelodon. Wold camp. The end of the trail. Appendixes: The dune dwellers of Mongolia. Summary of the outstanding results of the Central Asiatic expeditions.

Note: The author presents an informal account of his conceptions of modern exploration, partly to answer the two questions most frequently asked of him: "How can I be an explorer?" and "What remains to be done in exploration?" After describing in the first chapter what the business of exploring has become, the author amplifies some of the details by describing many of his own experiences in the field. Intended for the general reader.

CALIFORNIA ACADEMY OF SCIENCES

The Templeton Crocker expedition of the California Academy of Sciences, 1932. San Francisco: California Academy of Sciences, 1933-41. 2 v. illus. 25 cm. (California Academy of Sciences. Proceedings. 4th series, Vol. XXI-XXII) \$10.05. Parts also sold separately. 61a

Contents (abridged): Volume I. Foreword. Genus *Mollugo*. Characters of 24 new species of Hemiptera. Cactaceae. Formicidae. Dolichopodidae and Phoridae. Mosses. Amaranthaceae. Marine Mollusca. Hippoboscidae, with appendix on the Tabanidae. Diurnal Lepidoptera. Diptera. Formicidae. Reptiles and amphibians, with description of a new species of sea-snake. Birds. Hepaticae (chiefly *Riccia* and Anthocerotaceae). Lichens. Revision of two species of Vinciguerria. Termites. Some marine plants. Vascular plants from San Nicolas Island. Roccaceae. New species of grasses. Recent Pectinidae. New flowering plants. Fishes. Carpenter bees. New and noteworthy fishes. Volume 2. Diptera. Preliminary report on the Algae. The plant genus *Coldenia*. Hemiptera. Sargassums. New species of recent mollusks. Additional new fishes. Cyperaceae. Fungi. Two new flagellates from termites in the genera *Coronympha* Kirby, and *Metacoronympha* Kirby, new genus. The genus *Scalesia*.

Note: The cruise undertaken by Mr. Crocker and members of the expedition was from San Francisco to the west coast of Mexico and Central America, to Cocos Island, the Tres Marias Islands, the Revillagigedo Islands, and to Cedros, Guadalupe, and San Nicolas islands. The large collection of material of various types was determined by specialists, whose reports compose these two volumes.

CARNEGIE INSTITUTION OF WASHINGTON. DEPARTMENT OF TERRESTRIAL MAGNETISM

Scientific results of Cruise VII of the Carnegie during 1928-1929 under command of Captain J. P. Ault. Washington, D.C.: Carnegie Institution of Washington, 1942-44. 10 v. illus. 29 cm. (Carnegie Institution of Washington. Publications no. 536, 537, 542, 544, 545, 547, 555, 556, 562, and 565) Publication 536, Biology I, paper, \$2.50; cloth, \$3.50; Publication 537, Biology II, paper, \$1.50; cloth, \$2.50; Publication 542, Biology III, paper, \$1.50; cloth, \$2.00; Publication 544, Meteorology I, paper, \$1.50; cloth, \$2.00; Publication 545, Oceanography IA, paper, \$1.75; cloth, \$2.50; Publication 547, Meteorology II, paper, \$0.75; cloth, \$1.00; Publication 555, Biology IV, paper, \$1.00; cloth, \$1.50; Publication 556, Oceanography II, paper, \$2.00; cloth, \$2.50; Publication 562, Chemistry I, paper, \$1.00; cloth, \$1.25; Publication 565, Biology V, paper, \$2.00; cloth, \$2.50. 62

Contents (abridged): Biology I: The copepods of the plankton gathered during the last cruise of the Carnegie, by Charles B. Wilson. Biology II: The oceanic Tintinnina of the plankton gathered during the last cruise of the Carnegie, by Arthur Shackleton Campbell. Biology III: Studies in the morphology, taxonomy, and ecology of the Peridiniales, by Herbert W. Graham. Biology IV: The phytoplankton, by Herbert W. Graham. Marine Algae, by William Albert Setchell. Polychaetous an-

nelids, by Aaron L. Treadwell. The mysids, by W. M. Tattersall. The isopods, by James O. Maloney. The halobates, by Harry G. Barber. List of birds, by Alexander Wetmore. Miscellaneous determinations, by M. W. Lanbenfels and others. Meteorology I: Meteorological results of Cruise VII of the *Carnegie*, 1928-1929, by Woodrow C. Jacobs and Katherine B. Clarke. Meteorology II: Upper-wind observations and results obtained on Cruise VII of the *Carnegie*, by Andrew Thomson. Biology V. Oceanography I A. Oceanography II. Chemistry I.

Note: A series of reports on the scientific results obtained during the seventh and final cruise of the nonmagnetic ship *Carnegie*, covering an extensive program of observation in terrestrial magnetism, terrestrial electricity, chemical oceanography, physical oceanography, marine biology, and marine meteorology. The material consists for the most part of transcriptions of the original scientific data recorded during the voyage, together with evaluations, summaries, and conclusions based on a detailed study of these original records. There are a number of photographs, charts, and tables in each volume.

MICHIGAN UNIVERSITY. GREENLAND EXPEDITIONS, 1926-1933

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Reports of the Greenland Expeditions of the University of Michigan, William Herbert Hobbs and Ralph L. Belknap, directors. Part II, Meteorology, physiography, and botany, edited by William Herbert Hobbs. Ann Arbor, Mich.: The University of Michigan Press, 1941. 287 p. illus. 28 cm. (University of Michigan studies. Scientific series. Vol. VI) \$5.00. 63

Contents: Meteorological studies, by J. E. Church. Report of the northern division of the fourth University of Michigan Greenland expedition, 1930-31: Aerology and meteorology, by William S. Carlson. Geology and glaciology, by William S. Carlson. Meteorological report of the University of Michigan-Pan American Airways Greenland expedition, August 1, 1932-July 31, 1933, by R. L. Belknap, director. Physiographic studies in the Holstenborg district of southern Greenland, by R. L. Belknap. The vascular plants of an inland region within the Holstenborg district of west Greenland, by Carl O. Erlanson.

Note: The first volume of these reports, containing the aerological statistics compiled by the University of Michigan's expeditions of 1926 and 1927-29 to Greenland, is now out of print. The present work is the concluding volume and comprises various technical papers on the climate and evaporation in Alpine and Arctic zones, temperatures of Arctic soil and water, surface meteorology, storm data, glaciation studies, atmospheric pressures, air temperatures, surface winds, humidity, clouds, visibility and other scientific data, physiologic and geologic processes, vegetational aspects, and a systematic list of floral species found. There are numerous tables of statistics, charts, and photographs in the text.

YALE NORTH INDIA EXPEDITION

HAWKES, JACQUETTA, AND OTHERS

Palaeolithic human industries in the north-west Punjab and Kashmir and their geological significance, by Jacquetta Hawkes, Christopher Hawkes, and Hellmut de Terra. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1934. 15 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 8, article I) 63a

Contents: Chitta, Locality I. Chitta, Locality II. Pampur. Kargil. General observations. Geological commentary. The geology near Chitta. The Pleistocene terraces at Kargil.

TERRA, HELLMUT DE

Geological studies in the northwest Himalaya between the Kashmir and Indus valleys. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1934. 76 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 8, article II) 63b

Contents: Introduction. I, General geographical aspect of the region. II, Description of geological cross sections: From the opening of the Sind valley to the main Himalayan range. The Gamru and Dras valley sections. Geology of the Kargil basin. The Pleistocene at Kargil. The structure in the upper Wakka valley. Pleistocene and subrecent formations in the Wakka valley. Across the Zaskar range to the Indus valley. III, General observations upon salient geological features: Paleozoic structures of the Tethyan subfloor. Triassic sinking and Cretaceous emergence. The Eocene marine regression, subsequent folding, and resulting structures. IV, Physiographic observations and their structural significance: Warping of fold structures. Remnants of older land forms and their relationships with others found in the eastern Karakoram. V, General conclusions. Literature references.

WODEHOUSE, ROGER PHILIP

The Pleistocene pollen of Kashmir. With an introductory note by H. de Terra. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1935. 18 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 9, article I) 63c

Contents: Introductory note. The Pleistocene pollen. Discussion of genera present: Coniferae. Gnetales. Gramineae. Salicaceae. Betulaceae. Juglandaceae. Urticaceae. Moraceae. Ulmaceae. Polygonaceae. Chenopodiaceae. Haloragidaceae. Plantaginaceae. Compositae. Conclusions.

BRANSON, CARL COLTON

A labyrinthodont from the Lower Gondwana of Kashmir and a new edestid from the Permian of the Salt Range. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1935. 8 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 9, article II) 63d

Contents: Class Pisces, Order Selachii, Superfamily Heterodontidae, Family Heterodontidae, *Helicampodus* gen. n.: Diagnosis, affinities. *Helicampodus kokeni* sp. n.: Material, description, locality and stratigraphic position. Class Amphibia, Order Labyrinthodontia, Suborder Rhachitomi, Family Lysipterygiidae fam. n., Genus Lysipterygium gen. n., *Lysipterygium deterrai* sp. n.: Material, description, affinities, associated fauna, locality and stratigraphic position.

WELLER, JAMES MARVIN

Permian trilobites from the central Himalayas. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1935. 5 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 9, article III) 63e

Contents: Family Proetidae, Genus Paraphillipsia Toumanskya 1935. Genotype *Paraphillipsia karpinskyi* Toumanskya: Generic characters, remarks. *Paraphillipsia pahara* sp. n.: Material, description, remarks. Genus Pseudophillipsia Gemmellaro 1892, Genotype *Phillipsia sumatrensis* Roemer: Generic characters, Remarks. *Pseudophillipsia* sp.: Material, description, remarks. Conclusions.

VOKES, HAROLD ERNEST

Unionidae of the Siwalik series. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1935. 12 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 9, article IV) 63f

Contents: Family Unionidae Fleming, Genus Lamellidens Simpson, 1900, Genotype *Unio marginalis* Lamarck, *Lamellidens lewisi* sp. n.: Description, comparison, remarks. *Lamellidens jamnensis* Prashad: Description, remarks. *Lamellidens* sp. n. A. *Lamellidens* sp. n. B. Genus Indonaia Prashad, 1918, Genotype *Unio caeruleus* Lea, *Indonaia mittali* Prashad: Description, remarks. *Indonaia hasnotensis* sp. n.: Description, comparison, remarks. *Indonaia* sp. n. A. *Indonaia* sp. n. B. Genus Parreysia Conrad, 1853, Genotype *Unio multidentatus* Parreys (Philippi), *Parreysia tatrotensis* sp. n.: Description, comparison. *Parreysia* near *corrugata* (Müller) Prashad, *Parreysia* sp. (Prashad). Bibliography.

CRESSON, EZRA TOWNSEND, JR.

Report on Diptera of the family Ephydriidae. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1934. 4 p. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, article I) 63g

Contents: *Ephydra glauca* Meigen. *Ephydra tibetensis* n. sp. *Halmopota hutchinsoni* n. sp. Note on the larvae and puparia.

HYMAN, LIBBIE HENRIETTA

Report on triclad Turbellaria from Indian Tibet. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1934. 7 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, article II) 63h

Contents: Introduction. *Polycelis tibetica* n. sp.: External features, general histological features, reproductive system, habitat. Second species. Affinities. Citations.

CAMERON, MALCOLM

Report on Coleoptera of the family Staphylinidae. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1934. 5 p. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, article III) 63i

Contents: Oxytelinae, *Lesteva kargilensis* sp. n. *Geodromicus affinis* sp. n. *Geodromicus similis* Cam. *Trogophloeus (Taenosoma) porosus* sp. n. *Delopsis consanguinea* sp. n. *Stenus (s. str.) pykarrus* sp. n. Staphylininae, *Actobius basalis* Motsch. var. *humeralis* Cam. *Philonthus lidarensis* Cam. Aleocharinae, *Athela (Aloconota) iguensis* sp. n. *Athela (Bessobia) submetallica* sp. n. *Athela (Microdota) ladakiana* sp. n. *Athela (Dimetrota) hutchinsoni* sp. n. *Aleochara (Coprochara) bilineata* Gyll.

ANDREWES, H. E.

Report on Coleoptera of the family Carabidae. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1934. 6 p. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, article IV) 63j

Contents: Enumeration of the 17 species comprising the collection. *Bembidion tixon* sp. nov. *Bembidion hutchinsoni* sp. nov. *Bembidion eupages* sp. nov. *Cymindis rubriceps* sp. nov.

BOND, RICHARD MARSHALL

Report on phyllopod Crustacea (Anostraca, Notostraca and Conchostraca) including a revision of the Anostraca of the Indian Empire. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1934. 34 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, article V) 63k

Contents (abridged): Introduction. Subclass Branchiopoda, Order Phyllopoda (Euphyllopoda), Suborder 1 Anostraca. Key to the families and genera of Anostraca of the Indian Empire. Ecology and zoogeography of the Indian Anostraca. Suborder 2 Notostraca, Genus *Apus* Schaeffer, *Apus cancriformis* Schaeffer. Suborder 3 Conchostraca, Family Limnadiidae Sars. Genus *Eulimnadia* Packard-Daday, *Eulimnadia margaretae* n. sp. Family Cyzicidae Stebbind-Barnard, Genus *Eocycticus* Daday, *Eocycticus hutchinsoni* n. sp. *Eocycticus deterrana* n. sp. Bibliography.

UENO, MASUZO

Report on amphipod Crustacea of the genus Gammarus. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1934. 13 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, article VI) 63l

Contents: Localities at which gammarids were collected. Description of the species. Distribution and its limiting factors. Geographical distribution. Distribution in Kashmir and Ladak, and its limiting factors: physical and chemical, biological factors. Note by the biologist of the expedition. Bibliography.

LUNDBLAD, OLOV

Report on Hydracarina. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1934. 34 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, article VII) 63m

Contents: Family Eylaidae, Subfamily Eylainae, *Eylais hamata* Koen. *Eylais degenerata* Koen. Family Protziidae, Subfamily Protziinae, *Protziella hutchinsoni* gen. et sp. n. *Calonyx montanus* sp. n. *Calonyx flagellum*, sp. n. Family Hydrphantidae, Subfamily Thyasinae, *Parathyas primitiva* sp. n. *Kashmirothyas hutchinsoni* gen. et sp. n. Family Hydrachnidae, Subfamily Hydrachninae, *Hydrachna (Diplohydrachna) conjuncta* Koen. Family Hygrobatidae, Subfamily Hygrobatinae, *Megapys proximalis* sp. n. Subfamily Acercinae, *Acercus ornatus* C. L. Koch. Comparative notes on the distribution of the watermite fauna at higher elevation. Lists of the watermites of the Alps (above 1800 m.), Norway (above 900 m.), Sweden (above 900 m.), Mt. Elgon (above 1800 m.), Kashmir (above 1000 m.). References.

HUTCHINSON, GEORGE EVELYN

Report on terrestrial families of Hemiptera-Heteroptera. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1934. 26 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, article VIII) 63n

Contents: Family Pentatomidae, Subfamily Scutellerinae, Tribe Odontotarsaria, *Phimodera rupshuensis* sp. n. Family Coreidae, Subfamily Corizinae, *Stictopleura* sp. Family Lygaeidae, Subfamily Lygaeinae, Tribe Orsillaria, *Nysius ericae* (Schill). *Nysius ericae alticola* subsp. n. Subfamily Oxycareninae, *Microplax hisariensis* Kiritshenko. *Bianchiella adelungi* Reuter. Subfamily Aphaninae, Tribe Gonionotaria, *Emblethis horvathiana* sp. n. Dolmacoris gen. n. *Dolmacoris deterrana* sp. n. Family Anthocoridae, Tribe Anthocoraria, *Ectemnus paradoxus* sp. n. *Anthocoris gyalpo* sp. n. Family Miridae, Subfamily Dicyphinae, Tribe Dicypharia, *Dicyphus physochlaenae* sp. n. *Dicyphus sengge* sp. n. Subfamily Plagiognathinae, Tribe Plagiognatharia, *Chlamydatus pachycerus* Kiritsh. *Tibetocoris* gen. n. *Tibetocoris margaretae* sp. n. Zoogeographical notes on the heteropterous fauna of high altitudes. Bibliography.

EDMONDSON, W. T., AND G. E. HUTCHINSON

Report on Rotatoria. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1934. 34 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, part II, article IX) 63o

Contents: Introduction. List of localities (Punjab and North-west Frontier Province, Kashmir valley, Indian Tibet and Tibet proper, Nilgiri Hills, Madras Presidency). Enumeration of species. Taxonomic and zoogeographical notes: *Cephalodella catellina* (Müller). *Filinia longiseta* (Ehrenberg) and *F. terminalis* (Plate). *Keratella quadrata* (Müller) and *Keratella valga* (Ehrenberg). *Lecane papuana* (Murray). Rotatoria previously recorded from India and Tibet. The rotatorian fauna of high altitudes. Bibliography.

VERHOEFF, CARL WILHELM

Ueber einen Land-Isopoden aus Ladak. (A terrestrial isopod from Ladak.) New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1936. 4 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, part II, article X) 63p

Contents: *Protracheoniscus (Protracheoniscus) nivalis* n. sp.

MOORE, JOHN PERCY

Report on Hirudinea. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1936. 2 p. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, article xi) 63q

Contents: *Theromyzon sexoculata* (Moore). *Erpobdella octoculata* (Linn.) *Foraminobdella heptamerata* Kaburaki.

LUNDQVIST, GÖSTA

Hochasiatische Binnenseesediments. (Deposits from inland lakes in the Asiatic Highlands.) New Haven: Connecticut Academy of Arts and Sciences, 1936. 46 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, part II, article XII) 63r

Contents: Introduction. Methods. Salt Range. Notes on the bottom, analysis of the structure of the deposits and of micro fossils, and summaries for the following: Son Sakesar Kahar (ca. 750 m.), Kashmir. Lokut Dal Lake (1582 m.). Bod Dal Lake (1582 m.). Sundar Khun (1582 m.). Manasbal Lake (1584 m.). Wular Lake (1573 m.). Ladak. Tso Moriri (4528 m.). Khyagar Tso (4672 m.). Sta-rtak-puk Tso (4536 m.). Tso Kar (4527 m.). Yaye Tso (4686 m.). Mitpal Tso (4875 m.). Pangur Tso (4329 m.). Pangong Tso (4241 m.). Ororotse Tso (5297 m.). Summary: the salt problem; types of water; summary of microbiological data; prospects for future studies. Note by biologist of the expedition. Literature.

SILVESTRI, FILIPPO

Report on myriapods. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1936. 12 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, part II, article XIII) 63s

Contents: Chilognatha, Family Polyxenidae, *Polyxenus* sp. Family Polydesmidae, Subfamily Strongylosominae, *Kashmirisoma contortipes* Schubart. Subfamily Polydesminae, *Opisthoporodesmus* sp. Symphyla, Family Scolopendrellidae, *Hanseniella* sp. Symphylella sp. Chilopoda, Family Geophilidae, *Mecistocephalus cephalotes* Mein. *Geophilus intermissus* Silv., var. *crenulata* nov. Family Lithobiidae, *Lithobius (Archilithobius) electus* Silv., var. *imminuta* nov. *Lithobius (Archilithobius) electus* Silv., var. *seccusa* nov. *Lithobius (Archilithobius) bispinosus* sp. n. *Lithobius (Archilithobius) erraticulus* Silv., var. *plurispinata* nov. *Lithobius (Archilithobius) materiatus* sp. n.

SILVESTRI, FILIPPO

Report on Diplura and Thysanura. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1936. 7 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, part II, article XVI) 63t

Contents: Diplura, Family Campodeidae, *Lepidocampa weberi* Oud. Family Japygidae, *Indjapyx harrisoni* sp. n. *Indjapyx petrunkevitchi* sp. n. Thysanura, Family Lepismidae, *Ctenolepisma longicaudata* Esch. *Ctenolepisma* sp. *Lepidospora ceylonica* Silv. Family Machilidae, *Machilanus hutchinsoni* sp. n.

DENIS, J. R.

Report on Collembola. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1936. 22 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, part II, article XV) 63u

Contents: *Hypogastrura armata* (Nic.). *Hypogastrura communis* (Folsom). *Friesia excelsa* n. sp. *Proisotoma ladaki* n. sp. *Isotoma spinicauda* Bonet. *Porchesellides boraio* Bonet. *Sira brahamides* n. sp. *Sira nilgiri* n. sp. *Parasira subornata* n. sp. *Lepidocyrtus unifasciatus* n. sp. *Lepidocyrtus orientalis* E. Handschin. *Paronella (Aphysa) longicornis* (Oudemans). *Salina celebensis* (Schäffer). *Salina dubiosa* nov. sp. *Sminthurides*

aquaticus (Bourlet). *Sminthurides (Stenacidia) violaceus* (Reuter). *Bourletiella arvalis* (Fitch). Two addenda: Unclassified specimens. *Entomobrya hutchinsoni* n. sp.

BREHM, VINCENZ

Report on Cladocera. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1936. 15 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, part II, article XVI) 63v

Contents (abridged): Introduction. Notes on individual species: *Moina esau*, n. sp.; *Dunhevedia crassa* var. *interrupta* n.; *Drepanomacrothrix* sp. Concerning the genus *Drepanomacrothrix*. Description of the genus *Drepanomacrothrix* and the species *Stschelkanowzewi* after Werestschagin *Drepanomacrothrix (sic!)*. *Drepanomacrothrix stschelkanowzewi* n.g., n. sp. Concerning a presumably new Alona from Tso Moriri: *A. ladacensis*. Alona sp. *Pleuroxus*—species. *Chydorus* n. sp.?

HORA, SUNDER LAL

Report on fishes. Part I: Cobitidae. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1936. 22 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, part II, article XVII) 63w

Contents: Introduction. Ecology and structural modifications: air-bladder; caudal fin. Geographical distribution and origin of the fish fauna. Systematic account: *Nemachilus stoliczkae* (Steindachner); *Nemachilus gracilis* Day; *Nemachilus microps* (Steindachner); *Nemachilus tenuicauda* (Steindachner); *Nemachilus vittatus* (Heckel); *Nemachilus de Terra*, sp. nov.; *Nemachilus hutchinsoni*, sp. nov.; *Nemachilus panguri*, sp. nov.; *Botia birdi* Chaudhuri.

MUKERJI, DEV DEV

Report on fishes. Part II: Sisoridae and Cyprinidae. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1936. 37 p. illus. 30 cm. (Connecticut Academy of Arts and Sciences. Memoirs. Vol. 10, part II, article XVIII) 63x

Contents: Introduction. Systematic account. Sisoridae: *Glyptothorax kashmirensis* Hora; *Glyptosternum reticulatum* McClelland. Cyprinidae: Cyprininae: *Labeo diplostomus* (Heckel); *Crossochilus punjabensis* Mukerji. Schizothoracinae: *Schizothorax labiatus* (McClelland); *Schizothorax longipinnis* Heckel; *Schizothorax esocinus* Heckel; *Schizothorax planifrons* Heckel; *Schizothorax micropogon* Heckel; *Schizothorax curvifrons* Heckel; *Oreinus sinuatus* (Heckel); *Schizothorax labiatus* x *Oreinus sinuatus*; *Schizothorax planifrons* x *Oreinus sinuatus*; *Schizopygopsis stoliczkae* Steindachner; *Diptychus maculatus* Steindachner; *Ptychobarbus cinereus* Steindachner.

Note: The Yale North India Expedition was undertaken in 1932-1933 under the leadership of Dr. Hellmut de Terra. Previous Central Asiatic geological studies had given evidence of recent crustal movements which had evidently played a dominant part in the formation of the Himalayan mountain range. It was realized that if the origin of this most elevated of land forms was due to uplift which followed the mid-Tertiary folding, and if these movements had continued through the Pleistocene, it might be expected that the fauna, terrestrial or freshwater, would in some way reflect the changes of environment connected with the uplift. Consequently, studies on the distribution and on the biological and ecological characters of freshwater life would contribute to our knowledge of these changing paleographic conditions. Thus the biologist would test such conclusions as the physiographer and geologist might be able to draw. Next in importance would be the stratigraphic study of the younger debris which has been shed at intervals by the rising mountains. The expedition was planned with a view to studying these various problems. The findings of the expedition were reported by Dr. de Terra and associated authors. The reports were published under the joint auspices of the Connecticut Academy of Arts and Sciences and of Yale University, and form volumes VIII, IX and X of the *Memoirs of the Academy*. In volume X, articles X, XII, and XVI are in German, XV in French. The prices are as follows: Volume VIII, article I, \$0.80; article II, \$1.75. Volume IX, \$2.00. Volume X, part I, \$3.75; part II, \$4.75.

MATHEMATICS

General

BENTLEY, ARTHUR FISHER

Linguistic analysis of mathematics. Bloomington, Ind.: The Principia Press, Inc., 1932. 315 p. illus. 22 cm. \$3.00. 64

Contents: Part I, Problem and postulation: The problem. Semantic postulation. Linguistic materials and control. Part II, Examination of mathematics as language: Character and symbol. Word-clusters lacking consistency. The semantic M-T and M-O. Kronecker and Poincaré. The semantic number sequences. Brouwer. Relations and operations: 1, Hermann Weyl; 2, Postulation for geometry. The denumerability of decimals. Null as a "Zahl." Part III, Knowledge and logic: Semantic analysis. Reconstructions of logic. Conclusion.

Note: A study in the semantics of mathematics and logic for the advanced reader. The three great historic branches of mathematics, algebra, geometry, and analysis, are explored as semantic fields, and an analysis made of symbols and their meanings.

COURANT, RICHARD, AND HERBERT ROBBINS

What is mathematics? an elementary approach to ideas and methods. New York: Oxford University Press, 1941. 521 p. illus. 23 cm. \$5.00. 65

Contents (abridged): What is mathematics? The natural numbers. The theory of numbers. The number system of mathematics. The algebra of sets. Geometrical constructions. The algebra of number fields. Projective geometry. Axiomatics. Non-Euclidean geometries. Topology. Functions and limits. Maxima and minima. The calculus. Appendix. Suggestions for further reading. Index.

Note: A simplified approach to the theory and appreciation of mathematics which avoids the usual textbook presentation. It is intended for teachers as well as general readers and college students.

ECKERT, WALLACE JOHN

Punched card methods in scientific computation. New York: The Thomas J. Watson Astronomical Computing Bureau, Columbia University, 1940. 136 p. illus. 24 cm. Paper, \$2.00. 66

Contents (abridged): Part I, The punched card method: Introduction. The punched card and the machines. The operating method of the Hollerith method. The tabulating card. The machines of The Thomas J. Watson Astronomical Computing Bureau. Other machines and devices not now in use at the Bureau. Part II, Machine methods: General considerations of the punched card technique. The construction and use of special tables of tabular functions. Interpolation, mechanical quadrature, and allied subjects. Numerical harmonic analysis and synthesis. The multiplication of series. The numerical solution of differential equations. Part III, Astronomical applications: The calculations involved in the construction of a catalogue of photographic star positions. Stellar photometry. Numerical lunar theory. The computation of planetary perturbations. Appendix: List of card catalogues at the Bureau. Additional description of the machines and plugboards. The organization of The Thomas J. Watson Astronomical Computing Bureau. Index.

Note: The purpose of this book is to show the possibilities for scientists of the electric punched card method, known also as the Hollerith or electric accounting machine method, of computation. It is not a manual of operation for the various machines but is designed to enable a scientist so to formulate his problem that any skilled operator of the machines could carry it out. The methods are described in terms of the equipment of The Thomas J. Watson Astronomical Computing Bureau, which forms a working example of the use of the electric punched card method in scientific computation.

DANTZIG, TOBIAS

Number, the language of science; a critical survey written for the cultured non-mathematician. Third edition, revised and augmented. New York: The Macmillan Company, 1939. 320 p. illus. 22 cm. \$3.00. 67

Contents: Fingerprints. The empty column. Number lore. The last number. Symbols. The unutterable. The flowing world. The act of becoming. Filling the gaps. The domain of number. The anatomy of the infinite. The two realities. Milestones in the evolution of the number concept. Appendixes. Suggestions for subsequent reading. Indexes.

Note: A presentation of the fundamentals of the science of numbers. The treatment avoids the technical aspects of the subject but deals with symbol and form and with the ideas which underlie them. As indicated in the title, the book is intended for the layman with no formal knowledge of mathematics. The additional material in the third edition consists of 26 articles appended to the main text and dealing with evolution of the number concept, historical information, certain classical mathematical theories, and other subjects.

GALOIS INSTITUTE OF MATHEMATICS, LONG ISLAND UNIVERSITY

Galois lectures. Addresses delivered by Jesse Douglas, Philip Franklin, Cassius Jackson Keyser, Leopold Infeld at the Galois Institute of Mathematics, Long Island University, Brooklyn, N. Y. New York: Scripta Mathematica, Yeshiva College, 1941. 124 p. illus. 20 cm. (The Scripta Mathematica library. No. 5) \$1.25. 68

Contents: Survey of the theory of integration, by Jesse Douglas. The four color problem, by Philip Franklin. Charles Sanders Peirce as a pioneer, by Cassius Jackson Keyser. The fourth dimension and relativity, by Leopold Infeld.

Note: The first paper in this collection covers the Riemann integral, the Stieltjes integral, the Lebesgue integral, and the Denjoy integral. "The four color problem" is a study in combinatorial topology which concludes that since the problem has not been solved it is not known whether it is true or not in a mathematical sense. The biographical sketch of Peirce (1839-1914), the American logician, mathematician, and philosopher, deals briefly with some of his accomplishments. The final paper is a transcript of a radio broadcast which attempts to explain to the layman the concept of a static picture of motion existing in a four-dimensional continuum.

HARTKEMEIER, HARRY PELLE

Principles of punch-card machine operation; how to operate punch-card tabulating and alphabetic accounting machines. New York: Thomas Y. Crowell Company, 1942. 269 p. (loose-leaf) illus. 29 cm. \$3.25. 68a

Contents: Introduction. Operation of numerical tabulating machines. Operation of the alphabetic accounting machine. Obtaining sums of squares and products on the tabulating machine.

Note: This manual has been designed to provide the beginning student with all the text and illustrative material necessary to a proper understanding of the fundamentals of the punched-card method. It is based exclusively on the use of International Business Machines Corporation equipment and is the result of more than six years of teaching and experimentation in the author's course in statistics. Although the illustrations have been drawn largely from the world of business, this manual can be used in any course which involves instruction in the operation of punch-card tabulating and alphabetic accounting machines.

KASNER, EDWARD, AND JAMES NEWMAN

Mathematics and the imagination. With drawings and diagrams by Rufus Isaacs. New York: Simon and Schuster, 1940. 380 p. illus. 21 cm. \$2.75. 69

Contents: New names for old. Beyond the googol. π , i , e (Pie). Assorted geometries—plain and fancy. Pastimes of past and present times. Paradox lost and paradox regained. Chance and chanceability. Rubber-sheet geometry. Change and changeability. Epilogue. Mathematics and the imagination. Bibliography. Index.

Note: A stimulating discussion of some of the more unusual aspects of mathematics, including some of the classic paradoxes as well as some of the problems proposed by modern mathematics, involving the postulates of topology or *analysis situs*. The presentation is not oversimplified although there are no formal theories developed and many of the mathematical ideas involved are illustrated with pictorial drawings. Footnotes to each chapter give additional references, further explanations where needed, and related problems. No formal knowledge of mathematics is required but an interest in the subject is assumed.

KEYSER, CASSIUS JACKSON

Mathematics and the question of cosmic mind, with other essays. New York: Published by Scripta Mathematica, Yeshiva College, 1935. 121 p. illus. 19 cm. (The Scripta Mathematica library. No. 2) \$1.25. 70

Contents: The meaning of mathematics. The bearings of mathematics. Mathematics and the question of the cosmic mind. Mitigating the tragedy of our modern culture. On the study of legal science. William Benjamin Smith. Index.

Note: A series of six essays by the Adrain Professor Emeritus of Mathematics at Columbia University, which are reprinted with alterations from *The American scholar*, *Scripta mathematica*, and the *Yale law journal*. The first three essays constitute a logical sequence, and should be read in order. Logical acumen, rather than mathematical knowledge or aptitude, are required for their understanding.

KRAITCHIK, MAURICE

Mathematical recreations. New York: W. W. Norton & Company, Inc., 1942. 328 p. illus. 22 cm. \$3.75. 71

Contents: Preface. Mathematics without numbers. Ancient and curious problems. Numerical pastimes. Arithmetico-geometrical questions. The calendar. Probabilities. Magic squares. Geometric recreations. Permutational problems. The problem of the queens. The problem of the knight. Games. Index.

Note: This book brings together a great variety of the most famous and many of the least known of mathematical games, riddles, and puzzles. It is based on a course of lectures given at the New School for Social Research, New York, in 1941, and may be regarded as a revised edition of the author's *La Mathématique des jeux*, Brussels, 1930.

LOGSDON, MAYME (IRWIN)

A mathematician explains. Decorative drawings by Chichi Lasley. Second edition. Chicago, Ill.: The University of Chicago Press, 1936. 189 p. illus. 23 cm. \$2.50. 72

Contents (abridged): Chronological list of mathematicians. Nature of mathematics, arithmetic, algebra, geometry and trigonometry. Analytical geometry. The differential calculus. The integral calculus. Mathematical interpretations of geometrical and physical phenomena, by Gilbert A. Bliss. Mathematics and life.

Note: Tells informally what a student or average educated person should know about mathematics; its development to meet human need from primitive to modern times; what it is; what it does; and how. Stresses the relation of mathematics to the physical sciences, its meanings and the uses of deductive logic in everyday life. A "new plan" text of the University of Chicago.

NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

Mathematics in modern life. New York: Teachers College, Columbia University, 1931. 195 p. illus. 23 cm. (National Council of Teachers of Mathematics. Sixth yearbook) \$1.75. 73

Contents: The application of mathematics to the social sciences, by Irving Fisher. Mathematics in biology, by J. Arthur Harris. The humanistic bearings of mathematics, by Cassius J. Keyser. Mathematics and religion, by David Eugene Smith. The mathematics of investment, by William L. Hart. Mathematics in agriculture, by Harry Burgess Roe. Mathematics in pharmacy and in allied professions, by Edward Spease. Mathematics and statistics, by Helen M. Walker. Mathematics in physics, by H. Emmett Brown. Polygonal forms, by George D. Birkhoff.

Note: A collection of papers on the applications of mathematics in various phases of modern life, including scientific research, agriculture, business, and the social sciences. The material is addressed primarily to teachers of mathematics and students of education intending to become mathematics teachers.

NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

A source book of mathematical applications; compiled by a committee of The National Council of Teachers of Mathematics, Edwin G. Olds, chairman. New York: Bureau of Publications, Teachers College, Columbia University, 1942. 291 p. 23 cm. (National Council of Teachers of Mathematics. Seventeenth yearbook) \$2.00. 74

Contents: Arithmetic. Algebra. Geometry. Trigonometry. Index of uses.

Note: This volume is intended primarily for mathematics teachers and for students in teacher-training courses. It provides examples of practical applications of mathematical principles which may be used to stimulate students' interest. Applications of listed topics to vocational fields are found by means of the index. Problems based on the applications are indicated.

NORTHROP, EUGENE PURDY

Riddles in mathematics; a book of paradoxes. New York: D. Van Nostrand Company, Inc., 1944. 262 p. illus. 22 cm. \$3.00. 75

Contents: What is a paradox? A few simple brain-teasers. The mighty midget 2 and other miracles (paradoxes in arithmetic). Now you see it—now you don't (paradoxes in geometry). Thou shalt not divide by zero (algebraic fallacies). Seeing is believing—perhaps (geometric fallacies). Outward bound (paradoxes of the infinite). What are the chances? (paradoxes in probability). Vicious circles (paradoxes in logic). Not for the novice (paradoxes in higher mathematics). Appendix.

Note: This popular treatment of various mathematical paradoxes has been designed for instruction as well as entertainment. The explanations of the reasons for the apparent inconsistencies give the reader a broader understanding of the fundamentals of mathematics and the logic of mathematical reasoning. At the same time, many of the important methods in elementary mathematics are shown in a new and refreshing perspective.

SCRIPTA MATHEMATICA FORUM LECTURES; addresses by Cassius Jackson Keyser, David Eugene Smith, Edward Kasner, and Walter Rautenstrauch. New York: Yeshiva College, 1937. 94 p. illus. 19 cm. (The Scripta Mathematica library. No. 3) \$1.25. 76

Contents: Mind, the maker, by Cassius Jackson Keyser. The story of mathematics, by David Eugene Smith. New names in mathematics, by Edward Kasner. Science in relation to social growth and economic development, by Walter Rautenstrauch.

Note: Addresses delivered at the meeting of the Forum of the Friends of *Scripta Mathematica* at Teachers College, Columbia University, December 10, 1934. The first address, "Mind, the maker," represents an outline of a quite original and inspiring theory of reality and the world, which was developed by William

Benjamin Smith in his essay *Recent physics and world theory*. It was read at the Forum by Cassius Jackson Keyser. The second essay deals with the history of mathematics, the third with the use of new terms in mathematics, and the fourth with the relationships between science and social growth and economic development.

SIMONS, LAO GENEVRA

Fabre and mathematics, and other essays. New York: Scripta Mathematica, Yeshiva College, 1939. 101 p. 20 cm. (The Scripta Mathematica library. No. 4) \$1.25. 77

Contents: Fabre and mathematics. The interest of Alexander von Humboldt in mathematics. The influence of French mathematicians at the end of the eighteenth century. Short stories in colonial geometry.

Note: This collection of essays is partly biographical and partly historical. The biographical sketches relate to scientists outside the realm of mathematics, while the historical sketches deal with the early history of mathematics in the United States. The book is intended for teachers, scientists, and interested laymen.

Dictionaries

JAMES, GLENN, AND ROBERT C. JAMES

510.3
f 14 cm
Mathematics dictionary, giving the meaning of basic mathematical words and phrases, including an exhaustive covering of the terms from arithmetic through calculus and the technical terms commonly used in the applications of these subjects. Revised edition. Van Nuys, Calif.: The Digest Press, 1943. 320 p. illus. 23 cm. \$3.00. 78

Note: This reference book, intended for students, teachers, and laymen, presents definitions of popular and technical terms as well as those terms which form the foundation of advanced mathematics courses. The revision includes the substitution of five place logarithm tables for four place tables and the addition of extensive integral tables, but not all of the errors in the first edition have been corrected.

History

ARCHIBALD, RAYMOND CLARE

Outline of the history of mathematics. Fifth edition, revised and enlarged. Oberlin, O.: The Mathematical Association of America, Inc., 1941. 76 p. 24 cm. \$0.75. 79

Contents: Introductory note. Synopsis. History of mathematics before the seventeenth century: Babylonian and Egyptian mathematics 3500 B.C. to 1 B.C. Greek mathematics 600 B.C. to 500 A.D. Hindu, Arabic, Persian mathematics 500 to 1200. European mathematics 1200 to 1600. History of mathematics after the sixteenth century: The seventeenth century. The eighteenth century. The nineteenth century and later. Literature list and notes. Index of names.

Note: A survey in outline form of the development of mathematics from Babylonian times to the 19th century, covering not only those topics which are considered most important from a purely mathematical point of view, but many minor items which provide an historical setting for certain well-known achievements. The material is useful as a basis for teachers who wish to conduct a semester or year course in this field, and for advanced students of mathematics. Chinese and Japanese mathematics are not considered and the reference to the mathematics of the Hindus is brief. There is a valuable annotated bibliography of 199 references in the fifth edition, plus a new index of names and numerous revisions to the text which incorporate the results of research made between 1939 and 1941.

ARCHIBALD, RAYMOND CLARE

510.6
A semicentennial history of the American Mathematical Society, 1888-1938. With biog-

raphies and bibliographies of the past presidents. New York: American Mathematical Society, 1938. 2 v. illus. 26 cm. \$3.00. 80

Contents: Volume I, History: Introductory. The Society, 1888-1920; 1921-1938. Financial affairs. Special funds. The Bulletin. Transactions. Colloquium lectures and Colloquium publications. The Chicago group and the Chicago section. Annual meetings. Summer meetings. Josiah Willard Gibbs lectureship. The library. The council and board of trustees. The secretaries. The vice-presidents. The presidents. Index. Volume II, Addresses: Fifty years of algebra in America, 1888-1938, by E. T. Bell. Algebraic aspects of the theory of differential equations, by J. F. Ritt. The historical background of harmonic analysis, by Norbert Wiener. Recent developments in the calculus of variations, by E. J. McShane. Recent trends in geometry, by T. Y. Thomas. The sphere in topology, by R. L. Wilder. Dirichlet problems, by G. C. Evans. Hydrodynamical stability, by J. L. Synge. Fifty years of American mathematics, by G. D. Birkhoff.

Note: In order to give a definite suggestion as to the mathematical research of the outstanding men of the period 1888-1938 and to present a background for the history of the Society, condensed biographies and complete bibliographies are brought together for the group of past presidents of the Society in volume I, together with a brief history of the Society's activities in the period indicated. Volume II contains brief treatises on eight representative subjects and a historical summary of American contributions to mathematics during the same period, some of the papers being purely chronological and others concerned chiefly with recent developments. The work is intended to reveal what has been accomplished in America since the founding of the Society and to acquaint mathematicians with current problems and research in many fields. Lists of references follow most of the papers in Volume II and there are portraits of former presidents of the Society in the first volume.

BELL, ERIC TEMPLE

The development of mathematics. New York: McGraw-Hill Book Company, Inc., 1940. 583 p. 23 cm. \$4.50. 81

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BX/d
Contents: General prospectus. The age of empiricism. Firmly established. The European depression. Detour through India, Arabia, and Spain. Four centuries of transition, 1202-1603. The beginning of modern mathematics, 1637-1687. Extension of number. Toward mathematical structure. Arithmetic generalized. Emergence of structural analysis. Cardinal and ordinal to 1902. From intuition to absolute rigor, 1700-1900. Rational arithmetic after Fermat. Contributions from geometry. The impulse from science. From mechanics to generalized variables. From applications to abstractions. Differential and difference equations. Invariance. Certain major theories of functions. Through physics to general analysis and abstractness. Uncertainties and probabilities. Notes. Index.

Note: Designed to give a knowledge and appreciation of the part played by mathematics in the evolution of civilization, this book presents a broad account of the main principles, methods, and theories of mathematics that have survived, from about 4000 B.C. to 1940. The greater trends in pure and applied mathematics are presented through typical major episodes in each period, with explanations of the technicalities. Bibliographical references are presented in the section entitled "Notes."

KARPINSKI, LOUIS CHARLES

Bibliography of mathematical works printed in America through 1850, with the cooperation for Washington libraries of Walter F. Shenton. Ann Arbor: The University of Michigan Press, 1940. 697 p. illus. 28 cm. \$6.00. 81a

510
A-X142
Contents: Preface. List of illustrations. Introduction: The British background. Mathematics in the Americas—the present bibliography. Previous bibliographical lists. Methods employed in the present list. Abbreviations of names of libraries and of other sources represented in the location of copies. Bibliographical list of books, pamphlets, and broadsides: Sixteenth-century publications. Seventeenth-century publications. Eighteenth-century publications. Publications from 1801 to 1850, inclusive. Entry titles—Works whose publication is problematical. Encyclopedias and encyclopedic reference works. Journals and newspapers with mathematical articles. Appendix: Native American mathematical developments. Works consulted. Indexes: General index. Topical indexes: Works dealing with algebra. Works dealing with analytic geometry and conic sections. Works dealing with arithmetic. Works dealing with calculus. Games and puzzles. Works dealing

with geometry and mensuration. Historical, biographical, and philosophical works. Works dealing with mechanics and optics. Practical navigators. Works dealing with surveying. Works dealing with trigonometry. Tables, ready reckoners, and works dealing with logarithms, the slide rule, and mathematical instruments. General works on mathematics. Index of non-English and Canadian works: Choctaw. Dutch. French. German. Hawaiian. Portuguese. Spanish and Latin. Canadian. Index of printers and publishers.

Note: Over 1000 titles and about 3000 editions are listed in chronological order, and about 900 cuts of title and specimen pages illustrate the text. The compiler aims to make complete the list of Spanish-American books to 1800 and of those published in the United States and Canada to 1850. There is also a record of entry titles submitted to the Copyright Office, the actual publication of which is problematical.

SANFORD, VERA

A short history of mathematics. Under the editorship of John Wesley Young, with an introduction by David Eugene Smith. Boston: Houghton Mifflin Company, 1930. 402 p. illus. 20 cm. \$3.60. 82

Contents: Men who made mathematics. Arithmetic. Commercial mathematics. Algebra. Verbal problems. Practical geometry. Demonstrative geometry. Trigonometry. Analytic geometry. Calculus. Theory of numbers. Calculating devices. Weights and measures. The place of mathematics in the school curriculum. General histories of mathematics. Chronological outline. Index.

Note: A brief history for teachers, advanced students, and others familiar with the subject matter of mathematics. It outlines in chronological order the development of mathematics from Babylonian and Egyptian times to the beginning of the 19th century. Important theories are presented in synopsis form and their evolution from prior investigations is studied. Summaries follow each chapter and there are numerous illustrations from contemporary drawings and title-pages. The bibliography is slight.

SMITH, DAVID EUGENE, AND JEKUTHIEL GINSBURG

A history of mathematics in America before 1900. Chicago, Ill.: Published by the Mathematical Association of America with the cooperation of the Open Court Publishing Company, 1934. 209 p. illus. 19 cm. (The Carus mathematical monographs. No. 5) \$2.00. 84

Contents (abridged): Needs of the early settlers. Causes of the low degree of general intellectual effort. Early conditions in the seventeenth century. New England. Early astronomy. The astrologers. The colleges. Private instruction. Equipment for study. Textbooks. Astronomy, navigation, and geodesy. Learned societies and scientific periodicals. Summary of conditions in the eighteenth century. European influences. Prominent names, 1800-1875. Interest in mathematical research. The American Mathematical Society. Periodicals. American dissertations. General trend of mathematics in America, 1875-1900. Trend of important branches. Retrospect. Index.

Note: This brief monograph surveys the history of mathematics in early America, with reference to racial inheritances, and early needs in the field of mathematics, together with the later development in the eighteenth and nineteenth centuries, the influence of mathematical ideas from abroad, the beginning of high-grade university work, the growth of mathematical societies, and the individual achievements of a number of American mathematicians. Bibliographic references appear in footnotes and in the body of the text.

Tables

ADAMS, EDWIN PLIMPTON, AND OTHERS

Smithsonian mathematical formula and tables of elliptic functions; mathematical formulae prepared by Edwin P. Adams. Tables of elliptic functions prepared under the direction of Sir George Greenhill, bart., by Col. R. L. Hippisley.

First reprint. Washington, D.C.: The Smithsonian Institution, 1939. 314 p. illus. 23 cm. (Smithsonian miscellaneous collections. Vol. 74, no. 1. Publication no. 2672) \$3.00. 85

Contents: Symbols. Algebra. Geometry. Trigonometry. Vector analysis. Curvilinear coordinates. Infinite series. Special applications of analysis. Differential equations. Numerical solution of differential equations. Elliptic functions. Index.

Note: A collection of the more useful results of mathematical analysis in formula form, designed for physicists, engineers, and others who regard mathematics as a tool and not as an end in itself. The formulas range from elementary to considerably advanced, and special applications of various theorems are also presented. The treatment of differential equations is particularly extensive and includes many special forms. The table of elliptic functions is preceded by a detailed explanation and description of their use. The first reprint contains corrections, but no new material.

BENSON, ROBERT E.

Natural trigonometric functions containing the natural sine, cosine, tangent and cotangent to seven decimal places for every ten seconds of arc from 0° to 90° semiquadrantly arranged. Third edition. Los Angeles, Calif.: Mac Printing Co., 1941. 181 p. illus. 24 cm. \$6.00. 87

Note: The order in which the functions appear has been rearranged in the third edition of these tables for engineers and students. A new table has been added on the lengths of circular arcs.

BURINGTON, RICHARD STEVENS, COMPILER

Handbook of mathematical tables and formulas. Second edition. Sandusky, O.: Handbook Publishers, Inc., 1940. 275 p. illus. 20 cm. \$1.25. 88

Contents (abridged): Part one, Formulas and theorems from elementary mathematics: Algebra. Elementary geometry. Trigonometry. Analytic geometry. Differential calculus. Integral calculus. Table of integrals. Vector analysis. Part two, Tables: Five-place common logarithms of numbers from 1 to 10,000. Seven-place common logarithms of numbers, 10,000 to 12,000. Important constants. Natural trigonometric functions. Natural trigonometric functions for decimal fractions of a degree. Common logarithms of trigonometric functions in radian measure. Degrees, minutes, and seconds to radians. Natural trigonometric functions in radian measure. Squares, cubes, square roots, and cube roots. Reciprocals, circumferences, and areas of circles. Natural logarithms of numbers. Values and logarithms of exponential and hyperbolic functions. Logarithms of primes. Common logarithms of gamma functions. Interpolation. Amount of an annuity. American experience mortality table. Logarithms of factorial n . Factorials. Binomial coefficients. Probability functions. Factors for computing probable errors. Complete elliptic integral. Index.

Note: A short collection of tables useful to workers in mathematics, engineering, physics, chemistry, and insurance. This second edition contains useful additions, including a new table of squares, cubes, square roots, and cube roots. This same material appears in the appendix of Lange's *Handbook of chemistry* (see Index).

CARMICHAEL, ROBERT DANIEL, AND EDWIN R. SMITH

Mathematical tables and formulas. Boston: Ginn and Company, 1931. 269 p. illus. 24 cm. \$2.40. 89

Contents: Introduction. Common logarithms. Important constants. Logarithmic trigonometric functions. Logarithmic sines and tangents of small angles. Natural trigonometric functions for angles which are multiples of 15°. Natural trigonometric functions. Four-place logarithms and antilogarithms. Four-place logarithmic trigonometric functions. Four-place natural trigonometric functions. Logarithmic trigonometric functions of angles in radian measure. Table for changing from sexagesimal to circular measure of angles. Natural trigonometric functions of angles expressed in radian measure. Table for changing from circular to sexagesimal measure of angles. Minutes in decimals of a degree.

Powers, roots, and reciprocals. Natural logarithms. Exponential and hyperbolic functions. Multiples of M and $1/M$. Ten place logarithms of prime numbers. Formulas and theorems from algebra. Theorems and formulas from elementary geometry. Formulas from trigonometry. Formulas and theorems from analytic geometry. Formulas and theorems from calculus. Graphs for reference. Table of integrals. Infinite series.

Note: These tables and formulas have been compiled for the use of students in mathematics courses and in other courses which require numerical computation or involve processes based on mathematics up to and including calculus.

CLEMENTS, GUY ROGER, AND LEVI THOMAS WILSON

Manual of mathematics and mechanics. New York: McGraw-Hill Book Company, Inc., 1937. 266 p. illus. 23 cm. \$2.50. 90

Contents: Numerical tables. Table of integrals. Infinite series. Expansion in series. Formulas from plane geometry. Formulas from solid geometry. Algebra. Interest and annuities. Complex numbers. Trigonometry. Spherical trigonometry. Hyperbolic functions. Plane analytic geometry. Solid analytic geometry. Curves for reference. Differential calculus. Integral calculus. Differential equations. Vectors. Mechanics. Some properties of plane areas. Some properties of bodies of constant density. Properties of materials. Index.

Note: Contains facts and formulas that are useful in courses in mathematics and mechanics in colleges and engineering schools, and intended to serve both as an outline of the essential material which a student should understand and as a source of ready reference for advanced students and graduate engineers. Such topics as the solution of plane and spherical triangles, the convergence of series, methods of integration, and the solution of the ordinary differential equations of mechanics and physics have been outlined in rather detailed fashion. The numerical tables, which are four-place, include logarithms, trigonometric functions, exponential and hyperbolic functions, squares, cubes, square roots, cube roots, and other standard tables.

CRAWLEY, EDWIN SCHOFIELD, EDITOR

Tables of logarithms to five places of decimals with auxiliary tables. Second edition. New York: F. S. Crofts & Company, Inc., 1930. 79 p. 20 cm. \$1.00. 91

Contents: Theory of logarithms. Explanation of the tables. Logarithms of numbers. Important constants and their logarithms. Logarithms of the sine, cosine, tangent, cotangent for every minute of the quadrant. Table for computing the log sin and log tan of small angles. Natural sines, cosines, tangents, and cotangents. Circular arcs, expressed in radians. Napierian logarithms of numbers. Square roots of numbers.

Note: Scientifically arranged and clearly printed for ease and rapidity in use and for avoidance of error through misreading.

DAVIS, HAROLD THAYER, AND OTHERS

Tables of the higher mathematical functions. Computed and compiled under the direction of Harold T. Davis with the cooperation of Muriel E. Adams, Catherine Bennett, James A. Coley [and others]. Published as a contribution of the Waterman Institute for Scientific Research, Indiana University. Bloomington, Ind.: The Principia Press, Inc., 1933-35. 2 v. illus. 25 cm. \$13.00. 92

Contents (abridged): Volume I: The classification and history of tables. Modern mathematical instruments of calculation. Interpolation and its uses. Interpolation tables. Bibliography. Tables of the functions: The γ function. The ψ function. Indexes. Volume II: Supplementary bibliography I. Tables of the functions: The γ function. The Bernoulli polynomials and Bernoulli numbers. The Euler polynomials and Euler numbers. Gram polynomials; polynomial approximation. Functions of polynomial approximation. Errata. Indexes.

Note: This work collects in one place the scattered computations of earlier workers and at the same time attempts to fill in some of the lacunae that necessarily exist due to the sporadic character of the computations. The first volume elaborates the general problem-of table-making, including a classification of

tables and a history of early computations, together with a discussion of modern methods of calculation employing convergent and asymptotic series combined with the machinery of interpolation. The tables themselves are accompanied by a general description of their functions and their most important properties and uses. Volume II presents 37 additional tables covering the γ functions and other polynomials and numbers, together with certain functions useful in unweighted polynomial approximation, the latter being closely related to the Legendre polynomials. Descriptive material accompanies the tables. There is a total of about 300 works listed in the two bibliographies of tables for the higher mathematical functions, covering American and foreign works up to date of final publication.

DWIGHT, HERBERT BRISTOL

Mathematical tables of elementary and some higher mathematical functions including trigonometric functions of decimals of degrees and logarithms. New York: McGraw-Hill Book Company, Inc., 1941. 231 p. 23 cm. \$2.50. 92a

Contents (abridged): Trigonometric functions and their logarithms in hundredths of degrees. Log nat x for $1 < x < 3$ in steps of .01, for $3 < x < 10$ in steps of .1, and log nat 10^x for integer $k < 40$. Binomial coefficients up to 25, with factorials or their logarithms up to 250. Gregory-Newton interpolation coefficients C_n to 7 places for $n < 6$, p in steps of .01. Lagrangean interpolation coefficients. Zonal harmonics $P_n(x)$ for $n \leq 10$ and $dP_n(\cos \theta)/d\theta$ for $n \leq 7$ in steps of 1° . Complete elliptic integral of first kind for $k^2 < .96$ in steps of .01, for $.96 < k^2 < .997$ in steps of .001, for $.997 < k^2 < .9995$ in steps of .0001 and then in steps of .00001. Complete elliptic integral of second kind in steps of .01. Bernoulli's and Euler's numbers and their logarithms for $n < 35$. The gamma function for $1 < x < 2$, and the error function for $0 < x < 2$, both in steps of .001. The Bessel function $ber x$, $bei x$, their derivatives, and the absolute value and argument of $ber x + i bei x$ for $0 < x < 20$ in steps of .1. Table of common logarithms.

Note: A collection of reference tables for mathematicians and engineers, reproduced by a photo-offset method in small but clear type. Most tables are to five significant figures or five decimal places.

DWIGHT, HERBERT BRISTOL

Tables of integrals and other mathematical data. New York: The Macmillan Company, 1934. 222 p. illus. 22 cm. \$1.75. 93

Contents (abridged): Algebraic functions. Trigonometric functions. Inverse trigonometric functions. Exponential functions. Error function, or probability integral. Logarithmic functions. Hyperbolic functions. Inverse hyperbolic functions. Elliptic functions. Bessel functions. Surface zonal harmonics. Definite integrals. Differential equations. Tables of numerical values. Index.

Note: This book is intended for advanced students of mathematics. References throughout the book show where the derivations of the results are given and where similar results may be found. A list of numbered references is given at the end of the book.

HUDSON, RALPH GORTON, AND JOSEPH LIPKA

A manual of mathematics. New York: John Wiley & Sons, Inc., 1940. 135 p. illus. 19 cm. \$1.50. 93a

Note: A collection of mathematical formulas and tables compiled for class-room use and for general reference. The formulas and tables are those which are used generally by students of mathematics and engineering and are arranged in systematic order for quick reference. The numerical tables include common and natural logarithms, squares, cubes, square roots, cube roots, reciprocals, sines, cosines, tangents, hyperbolic sines, cosines and tangents, factorials, and other reference data, and are in general four-place. The formulas include all of the standard equations and functions occurring in algebra, trigonometry, and the calculus, including differential equations. The present text is a revised printing of the 1917 work, and includes various additions and corrections plus a new table of square root of $a^2 + b^2$.

IVES, HOWARD CHAPIN

Natural trigonometric functions to seven decimal places for every ten seconds of arc, together

with miscellaneous tables. Second edition. New York: John Wiley & Sons, Inc., 1942. 351 p. 25 cm. \$9.00. 94

Contents: Table 1A, Tangents and cotangents from 0° to 2° . Table 1B, Sines, cosines, tangents and cotangents. Table 2, Length of arc to radius unity. Table 3, Coefficient K for central angles of certain curves. Table 4, Radii from arc definition. Table 5, Radii from chord definition. Table 6, Curves with even foot radii. Table 7, Functions of a 1° curve. Table 8, Corrections to tangent distances. Table 9, Corrections to external distances. Table 10, Trigonometric functions; formulas and solution of triangles. Table 11, Minutes in decimals of a degree. Table 12, Units of length and of surface. Table 13, Secants and cosecants. Definitions and theory. Use of tables.

Note: Of value in engineering offices, particularly where calculating machines are used. The book gives tables of proportionate parts. The tables are printed on larger than usual pages and so arranged that reading them is made easy. In this edition Part I has been expanded to include an entirely new table on the tangents and cotangents of 0° to $2^\circ 0'$, to single seconds. In addition, there is a table of sines, cosines, tangents and cotangents. Part II offers a variety of miscellaneous tables, information, and examples especially adapted to subdivision work.

LEHMER, DERRICK HENRY

Guide to tables in the theory of numbers. National Research Council. Division of Physical Sciences. Committee on Mathematical Tables and Aids to Computation, Raymond Clare Archibald, chairman. Report 1: Report of the Sub-committee on Section F: Theory of numbers. Washington, D.C.: The National Research Council of the National Academy of Sciences, 1941. 177 p. 25 cm. (Bulletin of the National Research Council. No. 105, February, 1941) \$2.50. 95

Contents (abridged): Perfect and amicable numbers and their generalizations. Numerical functions. Periodic decimals. The binomial congruence. Factor tables. Lists of primes and tables of their distribution. Tables for facilitating factoring and identifying primes. Tables of solutions of linear Diophantine equations and congruences. Congruences of the second degree. Diophantine equations of the second degree. Non-binomial congruences of degree greater than or equal to 3. Diophantine continued fractions. Tables related to cyclotomy. Tables related to algebraic number theory. Tables related to additive number theory. Bibliography. Errata. Index.

Note: A report offering a useful account of a large variety of tables which have been published either to facilitate the application of the theory of numbers or to make possible further experiments. The work is divided into three main parts: (1) A descriptive account of existing tables, arranged according to the topical classification of tables in the theory of numbers indicated in the contents; (2) A bibliography arranged alphabetically by authors giving references to the source of the tables referred to above; (3) Lists of errata discovered in the tables.

MOLINA, EDWARD CHARLES

Poisson's exponential binomial limit. Table I: Individual terms. Table II: Cumulated terms. New York: D. Van Nostrand Company, Inc., 1942. 45 p. 28 cm. \$2.75. 96

Note: These tables have been calculated in Bell Telephone Laboratories where they are in constant use by engineers interested in the quality control of equipment manufactured on the Laboratories designs, and also by engineers engaged in the solution of trunking problems of large machine switching offices. Methods of control of manufacture by continuous study of inspection data which were developed or extended by the Laboratories have been for many years in effective use in the plants of the Western Electric Company. These tables reduce the work of calculation in the probability study and analysis of data derived by inspection.

NATIONAL RESEARCH COUNCIL. COMMITTEE ON TABLES OF POSITIVE TERNARY QUADRATIC FORMS

A table of Eisenstein-reduced positive ternary quadratic forms of determinant ≤ 200 . Report of the Committee on Tables of Positive Ternary Quadratic Forms. Burton W. Jones, chairman. Washington, D.C.: Published by the National Research Council of the National Academy of Sciences, 1935. 51 p. 24 cm. (Bulletin of the National Research Council. No. 97, June, 1935) Paper, \$0.50. 97

Note: In the table the properly primitive forms and the improperly primitive forms are listed separately. Each primitive positive form f of determinant less than or equal to 200 is equivalent to only one of the forms in the table, which is therefore said to be a table of "reduced" forms. Except where there is only one reduced form of a given determinant, the table also gives the number of reduced forms of that determinant, known as the class number. For each reduced form the table lists the number of automorph, that is, the number of transformations which leave the form unaltered. These tables are of use to physicists and chemists in problems of crystal structure involving the theory of three-dimensional lattices, and to mathematicians interested in the geometry of the lattice and the theory of numbers.

ROSENBAACH, JOSEPH BERNHARDT, AND OTHERS

Mathematical tables, compiled by Joseph B. Rosenbach, Edwin A. Whitman, and David Moskovitz. Boston: Ginn & Company, 1943. 212 p. 21 cm. \$1.75. 98

Contents (abridged): Five-place tables. Four-place tables. Trigonometric functions of some particular angles. Radians to degrees and minutes. Degrees to radians. Minutes and tenths of minutes to radians. Trigonometric functions of angles in radians. Squares—square roots—reciprocals. Cubes and cube roots. Napierian or natural logarithms. Exponential and hyperbolic functions. Factors for computing probable errors. The normal error function. Factorials and their logarithms. The complete elliptic integrals. Important constants and their logarithms.

Note: Designed especially for use in the class room and for those engaged in experimental work, this book includes tables of proportional parts with tabular differences ranging from 1-189 included for interpolation in those tables in which proportional parts are not given. To make computations with natural values easier, the natural values of secants and cosecants are included in the four-place and five-place tables.

SMOLEY, CONSTANTINE KENNETH

Segmental functions; text and tables offering simple methods of solving a circular segment, and of computing its area, when the segment is given with any 2 of its 5 parts, viz., the arc, the chord, the radius, the central angle and the height, with numerous examples illustrating the application of these methods. Scranton, Pa.: C. K. Smoley and Sons, 1937. 439 p. illus. 18 cm. \$5.00. 99

Contents: Part I. Text. Logarithms of segmental functions. Logarithms of function u by steps of ten minutes. Lengths of arcs by steps of one minute with P.P. for seconds. Logarithms of areas. Functions of segments formed by regular inscribed polygons. Tables for laying out a circular curve. Natural values

of function $u = \frac{A}{C}$ to seven decimals. Part II. Logarithms of numbers from 0 to 10,000. Logarithms of feet, inches and fractions from 0 to 200 feet. Circumferences, areas, squares, cubes, square roots, etc. Areas and circumferences of circles for diameters in units and fractions. Decimal equivalents. Constants frequently used in computations.

Note: The main table in part I of this reference work for engineers and architects gives the logarithms to five decimal places of the seven "segmental functions" as defined by the author, for angles from 0° to 180° by intervals of one minute. Part II is partly a reprint of the author's *Parallel tables of logarithms and squares of feet, inches, and fractions of an inch from zero to fifty feet*, Cleveland, O., 1901, and his *Five-decimal logarithmic-*

trigonometric tables, Cleveland, O., 1908, but contains new tables which give logarithms for 100 to 200 feet.

SMOLEY, CONSTANTINE KENNETH

Smoley's tables; parallel tables of logarithms and squares, diagrams for solving right triangles, angles and trigonometric functions corresponding to given bevels, common logarithms of numbers, tables of logarithmic and natural trigonometric functions and other tables; for engineers, architects and students. Tenth edition. Scranton, Pa.: C. K. Smoley & Sons, 1941. 787 p. illus. 18 cm. \$4.50. 100

Contents: Part I. Table of 64ths. Parallel tables of logs, and squares. Diagrams for solving right triangles. Table of bevels. Multiplication table for rivet spacing. Multiplication table for spacing of lattice bars. Explanations and examples. Part II. Parallel tables of slopes and rises: Introduction. Tables of slopes and rises. Special tables for $\frac{1}{4}$ pitch. Special tables for $\frac{1}{3}$ pitch. Special tables for $\frac{1}{5}$ pitch. Special tables for 30° pitch. Table of arrangement of diagrams. Diagrams of slopes and rises. Part III. Five-decimal logarithmic-trigonometric tables. Logarithms of numbers. Log. functions by $10''$. Angles between 0° and 1° . Log. functions by $1'$. Natural functions. Squares, cubes, etc. Lengths of arc for radius 1. Areas and circumferences for diameters in units and fractions. Formulas. Decimal equivalents. Constants.

Note: An extension of the table of logarithms and squares to two hundred feet has been incorporated in part I of this work, reprinted from the author's *Segmental functions*, Scranton, Pa., 1937 described above. The parallel combination of the logs and squares, according to the author, enables the user to dispense with the use of trigonometrical tables for all ordinary work of the structural draftsman. Part II is a reprint of the author's *Five-decimal logarithmic-trigonometric tables*, Scranton, Pa., 1920, which itself is a reprint of his *Parallel tables of logarithms and squares*, Cleveland, O., 1901, with the addition of three new tables. The author has also issued *Smoley's new combined tables*, Scranton, Pa., 1941, 1240 p., \$7.00, which is a one-volume collection of reprints of the present work and of the other tables mentioned above.

UHLER, HORACE SCUDDER

A new table of reciprocals of factorials and some derived numbers. New Haven, Conn.: The Connecticut Academy of Arts and Sciences, 1937. 51 p. 24 cm. (Transactions of the Connecticut Academy of Arts and Sciences. Vol. 32, January, 1937, p. 381-434) Paper \$1.25. 101

Note: The main table consists of two parts, the first giving the reciprocals of factorials from 14 to 214, complete to 475 decimal places, and the second giving reciprocals of factorials from 215 to 369 to 70 significant figures following several hundred zeros after the decimal point. All of the values here given were computed in two different ways, one by long division by hand work, the other by means of an electrically driven, 10-place Monroe calculating machine, and the results were then checked one against the other. There is a bibliography of 17 related tables referred to in the introduction.

UHLER, HORACE SCUDDER

Original tables to 137 decimal places of natural logarithms for factors of the form $1 \pm n \cdot 10^{-p}$ enhanced by auxiliary tables of logarithms of small integers. New Haven, Conn.: Horace S. Uhler, 1942. 120 p. 28 cm. Paper, \$0.80. 102

Note: The principle used in the compilation of these tables for mathematicians, physicists, and other scientists is based on the fact that, after preliminary adjustment, any number which is given explicitly can be resolved into factors of the form $1 \pm n \cdot 10^{-p}$ where n denotes any one of the first nine natural numbers and p represents any positive integer from one to infinity. The present work is entirely original in the sense that all of the data used were calculated by the author, and the tables are reproduced by photolithography to avoid possible errors in typesetting.

UNITED STATES. COAST AND GEODETIC SURVEY

Natural sines and cosines to eight decimal places. Washington, D.C.: Government Printing Office, 1942. 541 p. 28 cm. (United States. Coast and Geodetic Survey. Special publication no. 231) \$2.00. 103

Note: This table gives natural sines and cosines for angles from 0° to 360° for arguments of one second of arc. The first three decimal places are printed at the head and foot of each column and are to be prefixed to the remaining five decimal places printed for each degree, minute, and second. At the top of each column is given the tabular difference of the values in that column. The work contains no introductory material.

UNITED STATES. WORK PROJECTS ADMINISTRATION. MATHEMATICAL TABLES PROJECT

Table of *arc tan x*. Prepared by the Federal Works Agency, Work Projects Administration for the City of New York, as a report of Official Project No. 165-2-97-22, Mathematical Tables Project. Arnold N. Lowan, technical director. Conducted under the sponsorship of the National Bureau of Standards, Washington, D.C.: National Bureau of Standards, 1942. 169 p. 28 cm. \$2.00; foreign countries, \$2.50. 104

Contents: Introduction. Bibliography. Table of *arc tan x* to twelve decimal places, from 0 to 7 at intervals of 0.001; from 7 to 50 at intervals of 0.01; from 50 to 300 at intervals of 0.1; from 300 to 2,000 at intervals of 1.0; and from 2,000 to 10,000 at intervals of 10.0. Values of $p(1 - p)$ from 0 to 0.5 at intervals of 0.001 to six decimal places. Values of $1/6p(1 - p^2)$ from 0 to 1.0 at intervals of 0.001 to six decimal places. Conversion table, radians to degrees and vice versa.

Note: The intervals between successive arguments have been so chosen that interpolation to twelve decimal places may be made with the aid of the second central differences which are tabulated alongside of the entries. The table is believed to be the most comprehensive so far published, in respect both to the number of decimal places and of the smallness of the tabular interval. The work is intended as the first of a projected set of tables of the inverse trigonometric and hyperbolic functions. The present values can be used for the other inverse trigonometrical functions with some preliminary computation. The tables are of value in computations involving complex numbers, natural logarithms, integrals of rational functions, and related mathematics. Lithographed from typed original.

UNITED STATES. WORK PROJECTS ADMINISTRATION. MATHEMATICAL TABLES PROJECT

Table of the Bessel functions $J_0(z)$ and $J_1(z)$ for complex arguments. Prepared by the Mathematical Tables Project, Work Projects Administration of the Federal Works Agency. Conducted under the sponsorship of the National Bureau of Standards. Lyman J. Briggs, director; Arnold N. Lowan, technical director. New York: Columbia University Press, 1943. 403 p. illus. 27 cm. \$5.00. 105

Contents: Contour lines of $J_0(z)$ and $J_1(z)$. Constants. Introduction. Supplementary notes. Bibliography. Table of Bessel functions. Table of Lagrangian interpolation coefficients.

Note: The functions of orders of zero and one, which are encountered in the general solution of boundary value problems arising in the theory of potential, heat conduction, and wave motion, are here tabulated for argument-points defined in polar coordinates. Along each of the rays in five-degree steps from 0° to 90° ten-place values of the real and imaginary parts of $J_0(z)$ and $J_1(z)$ are given for moduli ranging from 0 to 10 at intervals of 0.01. The tables are useful for the evaluation of integrals involving Bessel functions, and for the solution of transcendental equations as well. The bibliography contains 66 references to the world literature relating to Bessel functions of orders zero and one.

UNITED STATES. WORK PROJECTS ADMINISTRATION. MATHEMATICAL TABLES PROJECT

Table of natural logarithms. Prepared by the Federal Works Agency, Work Projects Administration for the City of New York as a report of Official Project No. 765-97-3-10. Arnold N. Lowan, technical director. Conducted under the sponsorship of the National Bureau of Standards. Washington, D.C.: National Bureau of Standards, 1941. 4 v. 28 cm. \$2.00, each volume; foreign countries, \$2.50 each volume. 106

Contents (abridged): Volume i. Sixteen decimal place values of the natural logarithms of the integers from 1 to 50,000. Volume ii. Sixteen decimal place values of the natural logarithms of the integers from 50,000 to 100,000. Volume iii. Sixteen decimal place values of the natural logarithms of the decimal numbers from 0 to 5 at intervals of 0.0001. Volume iv. Sixteen decimal place values of the natural logarithms of the decimal numbers from 5 to 10 at intervals of 0.0001.

Note: These tables extend the range of all existing tables of natural logarithms and provide a smaller tabular interval. The tables were not intended to take the place of tables of common logarithms as a multiplying and dividing tool, but rather to furnish values of natural logarithms where directly needed. They will be particularly convenient for engineers and other practical computers who have frequent use of natural logarithms and wish to obtain them with the least possible effort and time. The number of significant figures given is sufficient to avoid all but simple mental interpolation. The tables should also be of value in the preparation of other mathematical tables involving natural logarithms. The work is lithographed from the typewritten original.

UNITED STATES. WORK PROJECTS ADMINISTRATION. MATHEMATICAL TABLES PROJECT

Table of reciprocals of the integers from 100,000 through 200,009. Prepared by the Mathematical Tables Project, Work Projects Administration of the Federal Works Agency. Conducted under the sponsorship of the National Bureau of Standards. Lyman J. Briggs, director, National Bureau of Standards, official sponsor. Arnold N. Lowan, technical director, Mathematical Tables Project. New York: Columbia University Press, 1943. 201 p. 27 cm. \$4.00. 107

Note: These tables are designed to facilitate the use of reciprocal numbers in the indicated interval by expanding by tenfold the scope of the existing tables so that no interpolation is required for whole numbers between 100,000 to 200,009. The tables are useful to spectroscopists for the conversion of wave lengths into wave numbers, and vice versa, and in all manner of computations, especially with calculating machines, by using multiplication to perform an indicated division. Tabular differences and proportional parts are also provided so that reciprocals of higher numbers whose initial digit is 1 may be obtained from the tables.

UNITED STATES. WORK PROJECTS ADMINISTRATION. MATHEMATICAL TABLES PROJECT

Table of sine and cosine integrals for arguments from 10 to 100. Prepared by the Federal Works Agency, Work Projects Administration for the City of New York, as a report of Official Project No. 265-2-97-11. Arnold N. Lowan, technical director. Conducted under the sponsorship of the National Bureau of Standards. Washington, D.C.: National Bureau of Standards, 1942. 185 p. 28 cm. \$2.00; foreign countries, \$2.50. 108

Contents: Graphs of $\text{Si}(x)$ and $\text{Ci}(x)$. Introduction. Bibliography. Table of $\text{Si}(x)$ and $\text{Ci}(x)$ from 10 to 100 at intervals of 0.01 to 10 decimal places. Multiples of $\pi/2$. Values of $p(1-p)$. Values of $1/6p(1-p^2)$ to six decimal places.

Note: This table is an extension of the Work Projects Administration's *Tables of sine, cosine, and exponential integrals*, New York, 1940 described below. The sine and cosine integrals are encountered in the solution of many problems in electrical and radio engineering, such as that of the radiation resistance of directional antennas, of short-wave transmitters, in optical problems particularly relating to diffraction, and in many other branches of physics. Values of the sine and cosine integrals beyond the range of the present volume may be easily obtained with the aid of asymptotic formulas given in the Introduction. The bibliography contains a list of other tables, applications of the integrals, and related reference works.

UNITED STATES. WORK PROJECTS ADMINISTRATION. MATHEMATICAL TABLES PROJECT

Tables of circular and hyperbolic sines and cosines for radian arguments. Prepared by the Federal Works Agency, Work Projects Administration for the City of New York, as a report of Official Project No. 765-97-3-10. Arnold N. Lowan, technical director. Conducted under the sponsorship of the National Bureau of Standards. Washington, D.C.: National Bureau of Standards, 1939. 405 p. 28 cm. \$2.00; foreign countries, \$2.50. 109

Contents: Circular and hyperbolic sines and cosines from 0 to 2 at intervals of 0.0001 to nine decimal places. Circular and hyperbolic sines and cosines from 0 to 10 at intervals of 0.1 to nine decimal places. Conversion tables: radians to degrees and vice versa.

Note: A companion volume to the Work Projects Administration's *Tables of circular and hyperbolic tangents and cotangents for radian arguments*, New York, 1943, described below. The tables presented in this volume are of value in many fields of pure and applied mathematics in making such computations as, for example, the periodic flow of solar heat at a given depth in the earth, the catenary curve assumed by a cable suspended between two points, calculations involving use of the Fourier series, theories of elasticity, electricity, hydrodynamics, statistics, and related subjects.

UNITED STATES. WORK PROJECTS ADMINISTRATION. MATHEMATICAL TABLES PROJECT

Table of circular and hyperbolic tangents and cotangents for radian arguments. Prepared by the Mathematical Tables Project, Work Projects Administration of the Federal Works Agency. Conducted under the sponsorship of the National Bureau of Standards. Lyman J. Briggs, director, National Bureau of Standards, official sponsor. Arnold N. Lowan, technical director, Mathematical Tables Project. New York: Columbia University Press, 1943. 410 p. 27 cm. \$5.00. 110

Contents: Introduction. Bibliography. Table i, Circular and hyperbolic tangents and cotangents. Table ii, Circular and hyperbolic tangents and cotangents. Conversion tables, radians to degrees, minutes, and seconds. Values of $\frac{1}{2}p(1-p)$. Values of $1/6p(1-p^2)$ and $1/6q(1-q^2)$. Multiples of $\frac{1}{2}\pi$.

Note: The main table in this volume is devoted to the circular and hyperbolic tangents and cotangents for radian arguments ranging from 0 to 2 at intervals of 0.0001. Supplementary tables for all four functions over the range of 0 to 10 at intervals of 0.1 are also included. These tables form a companion volume to the Work Projects Administration's *Tables of circular and hyperbolic sines and cosines*, New York, 1939 (see Index).

UNITED STATES. WORK PROJECTS ADMINISTRATION. MATHEMATICAL TABLES PROJECT

Tables of the exponential function e^x . Prepared by the Federal Works Agency, Work Projects Administration for the City of New York, as a report of Official Project No. 765-97-3-10. Conducted under the sponsorship of the National Bureau of Standards. Washington, D.C.: National Bureau of Standards, 1939. 535 p. 28 cm. \$2.00; foreign countries, \$2.50. 111

Note: The tables given in this book give values for the exponential function e^x for values of x as follows: -2.5 to 1.0 at intervals of 0.0001 to 18 decimal places; 1.0 to 2.5 at intervals of 0.0001 to 15 decimal places; 2.5 to 5.0 at intervals of 0.001 to 15 decimal places; and 5.0 to 10.0 at intervals of 0.01 to 12 decimal places. The entries are said to be correct to within one-half of one unit in the last decimal place. The tables are of use in making computations in mechanics, the kinetic theory of matter, quantum mechanics, electricity, magnetism, statistical mechanics, chemical kinetics, theory of probability, and mathematical statistics.

UNITED STATES. WORK PROJECTS ADMINISTRATION. MATHEMATICAL TABLES PROJECT

Tables of Lagrangian interpolation coefficients. Prepared by the Mathematical Tables Project, Work Projects Administration of the Federal Works Agency. Conducted under the sponsorship of the National Bureau of Standards. Lyman J. Briggs, director, National Bureau of Standards, official sponsor. Arnold N. Lowan, technical director, Mathematical Tables Project. New York: Columbia University Press, 1944. 392 p. 27 cm. \$5.00. 111a

Note: This reference volume extends the few existing tables of Lagrangian interpolation coefficients in polynomials of degree $(n-1)$, for $n = 3, 4, \dots, 11$, by giving the entries at smaller intervals of the argument and by making adequate provisions for interpolation near the beginning and the end of the table. The first nine tables give the coefficients for the argument p in decimal form corresponding to $n = 3, 4, \dots, 11$. Table x gives interpolants for p at intervals of 0.1 for $n = 3, \dots, 8$. Table x_i contains the interpolation coefficients for $n = 3, 4, \dots, 8$ for p in multiples of $1/12$. Integration coefficients for $n = 3, 4, \dots, 11$ are tabulated in table x_{ii} , and a discussion of these coefficients together with further formulas is also included.

UNITED STATES. WORK PROJECTS ADMINISTRATION. MATHEMATICAL TABLES PROJECT

Tables of probability functions. Prepared by the Federal Works Agency, Work Projects Administration for the City of New York, as a report of Official Project No. 65-2-97-33. Arnold N. Lowan, technical director. Conducted under the sponsorship of the National Bureau of Standards. Washington, D.C.: National Bureau of Standards, 1941. 2 v. 28 cm. \$2.00, each volume; foreign countries, \$2.50, each volume. 112

Note: Volume I contains tables for

$$H'(x) = \frac{2}{\sqrt{\pi}} e^{-x^2} \text{ and } H(x) = \frac{2}{\sqrt{\pi}} \int_0^x e^{-t^2} dt$$

for values of x from 0 to 5.6 at intervals of 0.0001 and 0.001 to fifteen decimal places, and from 5.6 to 5.946 at various intervals to fifteen decimal places; also a table for $H'(x)$ and $1 - H(x)$ in the range from 4 to 10 at intervals of 0.01 to eight significant figures. Volume II presents tables of the probability functions

$$Q(x) = \frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2} \text{ and } P(x) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^x e^{-\frac{1}{2}t^2} dt$$

over the following ranges: 0 to 1 at intervals of 0.0001; 1 to 7.800 at intervals of 0.001; 7.800 to 8.285 at various intervals, all of which are given to fifteen decimal places; also a supplementary table with values of $Q(x)$ and of $1 - P(x)$ to seven significant figures in the range of x between 6 and 10 at intervals of 0.01. The principal practical uses of these tables in statistics will be in testing the significance of a deviation in a normally distributed variate and in fitting normal distributions to observations. The work is reproduced from typewritten original by photolithography, partly in order to avoid typographical errors.

UNITED STATES. WORK PROJECTS ADMINISTRATION. MATHEMATICAL TABLES PROJECT

Tables of sine, cosine, and exponential integrals. Prepared by the Federal Works Agency, Work Projects Administration for the City of New York, as a report of Official Project No. 765-97-3-10. Arnold N. Lowan, technical director. Conducted under the sponsorship of the National Bureau of Standards. Washington, D.C.: National Bureau of Standards, 1940. 2 v. 28 cm. \$2.00, each volume; foreign countries, \$2.50, each volume. 113

Note: Table I of the first volume gives values for the sine-integral, cosine-integral, and exponential-integral to nine decimal places over the range from 0 to 2 at intervals of 0.0001. The interval of the argument was so chosen that interpolation by formulae involving second central differences will yield the fullest attainable accuracy over most of the range. Table II contains values for these integrals over the range from 0 to 10 at intervals of 0.1 to nine decimal places. Table III gives values of $1/6p(1-p^2)$ from zero to one at intervals of 0.001 to six decimal places. Table IV lists values of $p(1-p)$ from 0 to 0.5 at intervals of 0.001 to six decimal places. The second volume contains exponential, sine, and cosine integrals for arguments ranging between 0 and 10 at intervals of 0.001, and a number of supplementary tables. These functions are encountered in many fields of pure and applied mathematics and have numerous applications in electrical engineering, chemistry, and physics. The work contains bibliographies of related tables, applications of the functions, and other references from the world literature on the subject.

UNITED STATES. WORK PROJECTS ADMINISTRATION. MATHEMATICAL TABLES PROJECT

Tables of sines and cosines for radian arguments. Prepared by the Federal Works Agency, Work Projects Administration for the City of New York, as a report of Official Project No. 765-97-3-10. Arnold N. Lowan, technical director. Conducted under the sponsorship of the National Bureau of Standards. Washington, D.C.: National Bureau of Standards, 1940. 275 p. 28 cm. \$2.00; foreign countries, \$2.50. 114

Contents: Introduction. Values of $\sin x$ and $\cos x$ to eight decimal places at intervals of 0.001 from 0.000 to 25.000. Values of $\sin x$ and $\cos x$ to eight decimal places at intervals of unity from 0 to 100. Values of $\sin x$ and $\cos x$ to fifteen E. ssv:ET places at decimal intervals from $1 \cdot 10^{-6}$ to $9 \cdot 10^{-1}$. Conversion tables: radians to degrees and vice versa. Values of $\sin x$ and $\cos x$ to twelve decimal places at intervals of 0.00001 from 0.00000 to 0.01000. Values of $p(1-p)$.

Note: The present tables consisting mainly of sines and cosines of angles expressed in radian argument cover wide ranges of the argument not dealt with previously and also bring together in one place all previous tables corrected to at least eight decimal places, including those of Van Orstrand, Hayashi, and of various authors published by the British Association in the first volume of its *Tables*, 1931. The tables are of value in their application to the asymptotic expansion of transcendental functions, in machine and other computations. The volume is lithographed from typewritten original.

Graphic Methods

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A149
- ARKIN, HERBERT, AND RAYMOND R. COLTON**
Graphs. How to make and use them. New York: Harper and Brothers, 1936. 224 p. illus. 24 cm. \$3.00. 115

Contents: The principle of the graph. Construction of the graph. The equipment for graphic presentation. The line graph. The ratio chart. The bar chart. Area and solid diagrams. Graphing relationships. Map graphs. Organization charts. Graphs for computation. Control charts. The reproduction of graphs. Statistical tables and reports. Index.

Note: An introductory text for student engineers, draftsmen, and statisticians, presenting what the authors believe to be a survey of the best (1936) technique based on a wide study of representative types. Elementary principles of drafting, lettering, and the use of scales are included, followed by an analysis of various types of charts and graphs with illustrations and examples.

BRINTON, WILLARD COPE

- Graphic presentation. New York: Brinton Associates, 1939. 512 p. illus. (part col.) 23 cm. \$5.00. 116

Contents (abridged): Introduction. Graphic narrative. Tabulation. Classification charts. Genealogy and genetics charts. Organization charts. Relationship charts. Flow charts. Sector charts. 100% bar charts. Comparison of 100% bar charts. Multiple bar charts. Contrasting bar charts. Pictorial unit bar charts. Comparison of component bar charts. Bilateral bar charts. Area bar charts. General use of maps. Relief and aerial maps. Crosshatched and colored maps. Dot and pin maps. Flow maps. Contour maps. Rating charts. Chronology charts. Progress charts. Index numbers shown by curves. Frequency charts. Correlation charts. Ogive and Lorenz charts. Ratio charts. Three-dimensional methods. Composite charts. Suggestions for making a chart. Standards for time series charts. The camera and its use. Preparation of illustrations. Color and its use. Methods of reproducing. Selection of paper. Graphic charts in advertising. Quantitative cartoons. Quantitative posters. Displays and exhibits. Dioramas. Graphic charts in conference rooms. Glossary. Index.

Note: A comprehensive and detailed presentation of graphic methods containing over 1,000 illustrations in black-and-white and in color of nearly every known type of graph and chart in common use. The first part of the book up through page 366 deals with how to read a chart, followed by a short section on how to make a chart which gives suggestions rather than detailed instructions. The work is intended for general use rather than for the technical field, and the descriptive material is kept at a minimum, the illustrations accounting for about ninety percent of the text. The book is of use to sales managers, draftsmen, advertisers, production managers, as well as engineers and students. Bibliographic references occur frequently throughout the text.

DAVIS, DALE STROBLE

- Empirical equations and nomography. New York: McGraw-Hill Book Company, Inc., 1943. 200 p. illus. 23 cm. \$2.50. 117

Contents (abridged): Empirical equations: Fundamental forms. Special methods for two-variable correlation. Three-variable correlation. Nomography: Addition charts. Logarithmic charts. Recurrent variable charts. Nonlogarithmic multiplication charts. Combination charts. Line coordinate charts. Special slide rules. Miscellaneous problems. Bibliography. Appendix. Index.

Note: Treats the fundamental rectification methods found to be most useful to the engineer, presents several new techniques for two-variable data, places three-variable correlation on a firm and feasible basis, and covers the theory and construction of alignment and line coordinate charts.

KRAITCHIK, MAURICE

- Alignment charts—construction and use. New York: D. Van Nostrand Company, Inc., 1944. 94 p. illus. 23 cm. \$2.50. 118

Contents: The reader's preliminary. Introduction. Graduation of scales. Conversion scales. Alignment charts. Equidistant parallel scales. Parallel scales not equidistant. Two parallel scales.

Functions of more than three variables. The choice among different representations. Special charts. The reader's prospect. Index.

Note: An introductory book on the construction of nomographic charts. The book is intended mainly for scientists, engineers, and others who have practical use for such charts in the solving of equations.

MACKEY, CHARLES OSBORN

- Graphical solutions. Second edition. New York: John Wiley and Sons, Inc., 1944. 152 p. illus. 23 cm. \$2.50. 119

Contents: Stationary adjacent scales. Sliding scales. Network or intersection charts. Alignment charts. Empirical equations—non-periodic curves. Empirical equations—periodic curves. Index.

Note: A brief text- and reference book for engineers and students covering the elementary details of graphical solution of engineering problems. Most of the examples require only a working knowledge of logarithms, algebra, and a few principles of plane geometry. The fitting of equations to experimental data is also discussed. The second edition includes additional material in the construction of alignment charts, projective transformation, and fitting of empirical equations to periodic curves, with illustrative examples and problems.

RUNNING, THEODORE RUDOLPH

- Graphical calculus. Ann Arbor, Mich.: George Wahr, 1937. 83 p. illus. 23 cm. \$1.90. 119a

Contents: The principle of areas. Graphical differentiation. Graphical integration. Solution of equations. Graduation of unweighted data. Graphical interpolation. Graduation of weighted data: First kind. Second kind. Condition imposed upon derived curve. Graduation of data by means of the second derivative. Index.

Note: This brief manual aims to make use of the graphical method as a tool. It is planned for those who have had an elementary course in calculus and wish to make use of the graphical method in the treatment of data, particularly for students in applied science who deal with experimental data. The graduation of data is accomplished graphically without the use of formulas, moments, or least squares.

SMITH, HERBERT GETCHELL

- Figuring with graphs and scales. Stanford University, Calif.: Stanford University Press, 1938. 62 p. illus. 21 cm. \$1.00. 120

Contents: List of figures. List of tables. Some preliminary considerations. Logarithms. The slide rule. Logarithmic papers. Graphic solutions. Finally—. Appendix. The nomogram.

Note: A short introduction to graphic methods. It is intended for students, scientists, and others who are not specialists in mathematics but who are concerned with the interpretation of scientific and mathematical data.

VAN VOORHIS, MERRILL G.

- How to make alignment charts. New York: McGraw-Hill Book Company, Inc., 1937. 114 p. illus. 23 cm. \$2.50. 121

Contents (abridged): Sum or difference of two simple variables. Sum or difference of two functions of variables. Multiplication or division of two simple variables. Multiplication or division of two variables raised to constant powers. Multiplication or division of two functions of variables. Z chart and double Z chart for multiplication and division using uniformly divided scales. Sum or difference in equations of four functions of variables. Alternate method using parallel or perpendicular solution lines. Multiplication or division in equations of four functions of variables. Alternate method. Z chart for equations of four functions with parallel or perpendicular solution lines. Division of the sum of two variables by their difference. Sum or difference of reciprocal functions. Equations having two functions of one of three variables. Appendix.

Note: A practical implement for engineers and designers, showing how to make nomographic or alignment charts for the solution of engineering and other formulas. The treatment is arranged so that equations or formulas may be matched with listed type forms and the nomogram constructed by following concisely stated directions accompanied by illustrations. A brief outline of theory for reference is given in the Appendix.

Slide Rule

CLARK, JOHN JESSE

The slide rule and logarithmic tables, including a ten-place table of logarithms. A concise and accurate reference work on the application of the slide rule and logarithmic tables to practical problems. Third edition, including a table of natural trigonometric functions. Chicago: F. J. Drake & Company, 1941. 219 p. illus. 17 cm. \$1.50. 122

Contents: An introduction to the slide rule. The Mannheim slide rule. Slide rule operations. Slide rule settings. Special forms of slide rules. Systems of logarithms and four-place tables. Operations with logarithms. Table of logarithms of trigonometric functions. Ten-place table of logarithms. Table of natural trigonometric functions. Conversion settings for slide rules. Index.

Note: An elementary textbook for student engineers and others using the slide rule. The operation of Mannheim, polyphase, log-log and Boucher circular slide rules is explained, with sample settings and computations. A table of conversion settings for units of weight and measure.

HARRIS, CHARLES OVERTON

Slide rule simplified. Chicago: American Technical Society, 1943. 250 p. illus. 21 cm. \$2.50; \$3.50 with slide rule. 123

Contents: How to hold a slide rule. The scales of the rule. Multiplication. Division. Combination of multiplication and division. The square and square root. The cube and cube root. Sines and cosines. The tangent of the angle. The log scale. The reciprocal scale. How to check a slide rule. Summary of rules for locating the decimal point and rules for fundamental operations of the rule. Negative numbers. Answers to practice problems. Index.

Note: Eight chapters, intended for the beginner, deal clearly and fully with the simpler types of calculation. Additional chapters are designed for more advanced students. The text is liberally supplied with practice problems, and the answers are furnished.

STROHM, RUFUS TRACY

The slide rule and how to use it. Scranton, Pa.: International Textbook Co., 1939. 84 p. illus. 20 cm. \$1.00. 124

Note: A short manual presenting the information required to enable the average person to learn the uses of the slide rule, in its various forms, for performing calculations involving the common operations of arithmetic as well as the trigonometric functions, products of more than three factors, use of log log and folded scales, and other methods. Illustrations are used to show the scale settings for typical problems.

THOMPSON, JAMES EDGAR

A manual of the slide rule; its history, principle and operation. New York: D. Van Nostrand Company, Inc., 1930. 220 p. illus. 19 cm. (Mathematics for self-study) \$1.75. 125

Contents (abridged): History of the slide rule. Theory and operation of the Mannheim slide rule. Modified forms of the Mannheim rule and their use. Typical problems and slide rule settings. Special forms of the slide rule.

Note: A presentation of the history, principles, and practical use of the slide rule for students and industrial workers. Inclusive instructions, in simple language, are given for the use of all standard forms.

Popular Works

ALLEN, EDWIN BROWN, AND OTHERS

Vital mathematics by Edwin Brown Allen, Dis Maly, and S. Herbert Starkey, Jr. New York:

The Macmillan Company, 1944. 456 p. illus. 22 cm. \$1.80. 126

Contents: Whole numbers. Common fractions. Decimal fractions. Percentage. Denominate numbers; ratio and proportion. Certain rudiments of statistics. Introduction to geometric figures. From arithmetic to algebra. Signed numbers. Fundamentals of algebraic operations. Graphs. Drawings and constructions. Areas of plane surfaces. Single equations in one unknown. Relations existing within geometric figures. Locus. Relations between geometric figures. Trigonometry of the right triangle. Introduction to solid geometry. Some geometric solids. The sphere. Pairs of simultaneous equations. Exponents, logarithms, and the slide rule. The trigonometric ratios for angles greater than 90°. The solution of oblique triangles. Some spherical trigonometry. Appendix. Index. Answers.

Note: A review book intended for adults entering the armed forces or industry. No previous mathematical training is necessary. The book is directed toward military applications, with extensive use of vector diagrams and navigation problems.

BAKST, AARON

Arithmetic for adults; a review of elementary mathematics. New York: F. S. Crofts & Company, 1944. 319 p. illus. 20 cm. \$2.00. 127

Contents: The decimal system of numeration. The addition and subtraction of whole numbers. The dependence of sums and differences on the data. Multiplication of whole numbers. Division of whole numbers. Dependence of products and quotients on the data. More facts concerning multiplication and division. Applications of arithmetic operations. Decimal fractions. Units of measurement. Common fractions. Properties of common fractions. Arithmetic operations with fractions. Ratio and proportion. Percents. Simplified computation. Logarithms. The slide rule. Tables. Formulas from geometry. Simple trigonometry. Index.

Note: Arithmetic for adults is an unusually clear and readable presentation of the subject. It starts from scratch, assuming that the student may remember little, if any, of his earlier study, and develops each topic logically, point by point. Topics covered include logarithms and the slide rule. Examples are offered in great detail, and there are over 3,000 exercises. Throughout, this book shows how arithmetic can be used in practical ways, whether in business, industry or daily life.

BAKST, AARON

Mathematics, its magic and mastery. New York: D. Van Nostrand Company, Inc., 1941. 790 p. illus. 22 cm. \$3.95. 128

Contents (abridged): Numerals and numeration. Systems of numeration. Some remarkable properties of numbers. The arithmetic of measurement. Simple calculating devices. Rapid calculations. How the number magician does it. The algebra of number giants and pygmies. The grammar of algebra. Algebra looks at installment buying. Chain-letter algebra. Streamlining everyday computation. The bankers' number. The thinking machines. Postoffice mathematics. Passport for geometric figures. The triangle. Circles, angles, and an age-old problem. The mathematics of seeing. The shape and size of things. How algebra serves geometry. Cork-screw geometry. Mathematics, interpreter of the universe. Mathematics and magic. Appendix. Index.

Note: An informal treatment of the science of mathematics designed to appeal to the intelligent layman. Although intended mainly for the reader's amusement, the book is sufficiently complete to give a broad picture of mathematical fundamentals, while abstract conceptions and formulas are completely avoided and no proofs of any kind are used in the description of mathematical processes. Applications in business, industry, science, warfare, and everyday life are constantly emphasized.

CANDY, ALBERT LUTHER

Construction, classification, and census of magic squares of order five. Second edition, revised and enlarged. Lincoln, Neb.: Albert L. Candy, 1939. 221 p. 21 cm. Paper, \$1.00. 128a

Contents: Magic combinations. Classes of symmetric squares, and two related types of non-symmetric squares. Symmetric squares class i. Symmetric squares class ii. Pandiagonal squares. Mixed squares class i. Mixed squares class ii. Mixed squares class iii. General non-symmetric squares. Mixed squares class iv. Other special classes of non-symmetric squares class i. Addendum.

General summary. The number and types of 10×10 squares that can be constructed by the method of current groups.

Note: A treatise on the various methods of constructing the 5×5 magic square whose component numbers total 65 vertically, horizontally, and diagonally, of which, according to the author's summary, there are over 13 million possible combinations. The second edition contains minor corrections and additions, plus a supplement bringing the total number of basic squares constructed by the author to 2801. At the time of publication the author was Emeritus Professor of Mathematics of the University of Nebraska.

CANDY, ALBERT LUTHER

Pandiagonal magic squares of prime order. Lincoln, Neb.: Albert L. Candy, 1940. 93 p. 21 cm. Paper, \$1.00. 128b

Contents: Introduction. Squares of class I: Method of construction. Number of squares of class I. Symmetry. Number of ways of writing a basic square. Squares of class II: Method of constructing the 7×7 square. Number of squares of class II. Other methods of construction. The 11×11 squares. The 13×13 squares. The 17×17 squares. The 19×19 squares. Semi-pandiagonal squares.

Note: A treatise on the methods of constructing magic squares of the type indicated, with a derivation of the general formula giving the number of possible squares in class I, together with a large number of illustrations constructed by the author. The work is a continuation of part of the theory contained in his *Construction, classification, and census of magic squares of order five*, Lincoln, Neb., 1939 (see Index). The author has also written *Pandiagonal magic squares of composite order*, Lincoln, Neb., 1941, 155 p., paper, \$1.00, and *Supplement to Pandiagonal magic squares of prime order*, Lincoln, Neb., 1942, 30 p.

DRESDEN, ARNOLD

An invitation to mathematics. New York: Henry Holt and Company, 1936. 453 p. illus. 20 cm. \$3.25. 129

Contents: The starting point—a familiar land-mark. The first excursion—new views from an old trail. The second excursion—walled cities. Breaking through the walls. To greater freedom. Fruits of freedom. An unconventional episode. A return to the simple life. Some amusement and something else. A garden outside the wall. Curved mirrors. To the headwaters of a great river. *Ex parvis componere magna*. An approach to the secrets of nature. A region of great fame. A final look at the map. Indexes.

Note: This book is intended to give the reader an insight into the character of at least some of the important questions with which mathematics is concerned, to acquaint him with some of its methods, to lead him to recognize its intimate relation to human experience, and to bring him to an appreciation of its unique beauty. Exercises and problems are given under catchy headings such as "Games and puzzles," "Meditations in a new world," "A curiosity shop," and incidental remarks of a philosophic character are interspersed throughout the work. Mainly intended for home study but adaptable also to introductory college courses.

EDDY, WILLIAM CRAWFORD, AND OTHERS

Wartime refresher in fundamental mathematics, by Lieutenant W. C. Eddy, A. H. Brolly, Ensign E. S. Pulliam, E. C. Upton, and G. W. Thomas. New York: Prentice-Hall, Inc., 1942. 248 p. illus. 19 cm. \$1.40. 129a

Contents (abridged): Whole numbers; multiplication and division of fractions by cancellation. Arithmetical operations with fractions. Decimals. Percentage. Positive and negative numbers, ratio and proportion. Powers of 10. Equations and factors. Geometric fundamentals and square roots. Polynomials. Monomials. Special products. Setting up algebraic equations. Highest common factor, lowest common multiple. Algebraic fractions. Fractional equations and equations containing fractional coefficients. Roots, radicals, and exponents. Simultaneous linear equations. Equations containing three unknowns. Quadratic equations. Graphs and graphic solutions. Imaginary numbers, the J operator, and complex numbers. Glossary. Multiplication table.

Note: An elementary textbook suitable for lay readers and service men. It is intended to serve as a month's review course, and has been extensively used in the United States in preparation for special United States Navy tests. Answers are given for each day's problems.

JONES, SAMUEL ISAAC

Mathematical clubs and recreations. Nashville, Tenn.: S. I. Jones Co., 1940. 236 p. illus. 19 cm. \$2.75. 130

Contents: Part I, Mathematical clubs: Their purpose. History and development. Organization. Results obtained. Stimulating interest. A mathematical atmosphere necessary. Aids in creating this atmosphere. Club or classroom. Neatness. The math teacher's aim. The appreciation of beauty in the geometric forms of nature and art. Nature and preparation of program. Suggestive programs. Recreations and their use. Social activities. Constitution. Books for club libraries. Part II, Recreations: Amusements in mathematics. Brain teasers. Brain nuts. Curious tables. Multiplication oddities. Number rhymes. Games. List of games. Puzzles and riddles. Fallacies. Perpetual calendar. Calendar magic. Magic squares. Producing cubes by addition. Bible tests. Part III, Solutions to recreations: Solutions to amusements in mathematics. Solutions to brain teasers. Solutions to brain nuts. Solutions to puzzles and riddles. Solutions to Bible tests. Index.

Note: A manual for the organizing and conduct of mathematics clubs, and a collection of mathematical recreations. It is the aim of the author to stimulate interest in the recreational and curious aspects of mathematics which are not included in the elementary courses in the subject. Puzzles, brain teasers, and mathematical stunts of various kinds are included.

JONES, SAMUEL ISAAC

Mathematical nuts for lovers of mathematics. Nashville, Tenn.: Samuel I. Jones, 1932. 340 p. illus. 20 cm. \$3.50. 131

Contents: Nuts for young and old. Nuts for the fireside. Nuts for the classroom. Nuts for the math club. Nuts for the magician. Nuts for the professor. Nuts for the doctor. Nuts cracked for the weary. Nut kernels. Index.

Note: An extensive collection of mathematical problems and puzzles of various kinds, designed for teachers, students, and lovers of mathematics. Answers are provided in a separate section.

KOKOMOOR, FRANKLIN WESLEY

Mathematics in human affairs. New York: Prentice-Hall, Inc., 1942. 754 p. illus. 23 cm. (Prentice-Hall mathematics series; A. A. Bennett, editor) \$5.00. 132

Contents: The social function of mathematics. A world of approximations. Shape and size. Arithmetic comes of age. Widening the system and its symbolism. Equations on duty. Families of equations. Problems of dependence. Calculating the inaccessible. Interrelations of angles and sides. Sidestepping clumsy calculations. Chains of related numbers. Pocketbook mathematics. Yardsticks of chance. Picturing a functional relation. Rules and tools of geometry. Handling statistical data. Changeable rates of change. The notion of integration. The way ahead. Appendix (tables). Glossary of symbols. Index.

Note: This book is designed for the layman and beginning college student. The treatment combines discussions of the history and cultural aspects of mathematics with expositions of mathematical principles, study guides, and exercises for self-instruction.

PALMER, CLAUDE IRWIN, AND SAMUEL FLETCHER BIBB

Practical mathematics for home study, being the essentials of arithmetic, geometry, algebra and trigonometry. Third edition. New York: McGraw-Hill Book Company, Inc., 1942. 697 p. illus. 19 cm. \$4.00. 133

Contents (abridged): Arithmetic: Common fractions. Decimal fractions. Weights and measures. Percentage, ratio and proportion. Powers and roots. Geometry: Fundamental ideas. Areas of polygons. Triangles. The circle. Constructions and graphical methods. Prisms. Cylinders. Pyramids, cones, frustrums, the sphere, and other solids. Algebra: Addition and subtraction. Multiplication. Division. Special products and quotients. Factoring. Equations. Exponents, powers, and roots. Quadratic equa-

tions. Graphical methods. Logarithms. Trigonometry: Functions. Tables and their uses. Right triangles. Relation between trigonometric functions. Graphical representation. Functions involving more than one angle. Solution of oblique triangles. Tables. Index.

Note: A one-volume revision of Palmer's four-volume work *Practical mathematics*, New York, 1912-18, intended primarily for home study for the practical man. The nearly 3,000 drill exercises and problems are adapted in large part from engineering and trade journals, handbooks, and practical experience. Theory and principles are discussed always in relation to the practical application of the principle involved. Treatment is reduced to the simplest terms practicable and no prior mathematical knowledge is assumed. The third edition contains new problems and new applications in technical science.

RAPPOLT, FRANK A.

Simplified mathematics and how to use the slide rule. Garden City: Doubleday, Doran and Company, Inc., 1943. 300 p. illus. 21 cm. \$2.95.

134

Contents (abridged): Arithmetic. Learning to use fractions. Decimal, the new way of expressing fractions. Use of percentage. Powers and roots. Ratio and proportion. Arithmetical short-cuts. Units of measurement and weight. The metric system. Geometry. Geometrical magnitudes and shapes. Geometrical constructions. Mensuration. Algebra. Terms, symbols and expressions. Positive and negative quantities. Algebraic manipulation. How to solve equations and problems. Learning to use logarithms. Trigonometry. Trigonometric functions. Solution of triangles. How to use the slide rule. How to read the scales. How to multiply and divide. Powers and roots. Solving practical problems. How to use the underside of the slide rule. Answers to all problems. Tables of logarithms.

Note: This volume is designed as a rapid home-study course for those who have little or no previous training in mathematics. The problems are related to practical problems in daily work, and answers are given at the end of the volume. Some 40 pages are devoted to the use of the slide rule.

SCHAAF, WILLIAM LEONARD

Mathematics for everyday use. New York: The New Home Library, 1942. 363 p. illus. 21 cm. \$0.69.

135

Contents (abridged): Operations with whole numbers. Operations with parts of numbers. Weights and measures. Algebra. Geometry. Graphic methods. Mathematics of the household. Mathematics of the kitchen. Mathematics of budgets and income. Mathematics of home ownership, house and garden. Mathematics of travel, communication, buying and selling, investments and insurance. Mathematics of taxes.

Note: A clear and simple exposition of the basic principles of arithmetic, algebra, and geometry, intended primarily for self-instruction. The book is written either for the person wishing to renew his knowledge of mathematics or for one desiring an elementary introduction to the subject. The outstanding feature of the book lies in its emphasis on the practical application of mathematics to the problems of everyday life.

SOMMERS, HOBART H.

Living mathematics reviewed. Chicago: Wilcox and Follett Co., 1943. 360 p. illus. 20 cm. \$2.50.

135a

Contents: In the beginning. Starting from the scratch pad. Parts. Can you speak algebra? Which way do we go? Relations in pictures. More algebra. Three sides to this question. The H.C.F. and the L.C.M. Ratio and proportion. Similar shapes. Areas. This is going to hurt a little. Secrets of the circle. Dangerous crossings. Constants and variables. What is a solid? Pictures of equations. Assorted solids. Graphic quadratics. The sphere. Against the law. Global geometry. Numerical trigonometry. General triangles. Areas of triangles. Logarithms. The law of tangents. Military trigonometry. Spherical trigonometry. Oblique triangles. Calling on calculus. Exercises. Tables. Index.

Note: A review for home study of the highlights of mathematics from arithmetic to calculus, intended for adults with some background of mathematics. The material is presented mainly in the form of problems completely worked out. Answers to exercises are included.

General Textbooks

BAKER, EDWARD GEORGE

A first course in mathematics for students of engineering and the physical sciences. New York: D. Van Nostrand Company, Inc., 1942. 295 p. illus. 23 cm. \$3.00.

136

Contents: Trigonometric functions and vectors. Numerical computation. Radian measure. Solution of right triangles. Rotating vectors. The language of algebra. The linear function. Simultaneous linear equations. The theory of exponents. Logarithms. Analytical trigonometry. Oblique triangles. The quadratic function. Complex numbers. Algebraic and trigonometric equations. Progressions. Analytic geometry: The straight line. The conics. Transformation of coordinates. Polar coordinates. Plane curves. Three-dimensional geometry. Derivatives and integrals. Permutations and combinations. Index.

Note: This text teaches the methods and principles of mathematics and their application in science and engineering. It is designed for first-year college students, and covers college algebra, trigonometry, and analytic geometry.

BRENEMAN, JOHN WILLIAM

Mathematics. Prepared under the direction of the Division of Engineering Extension, the Pennsylvania State College. New York: McGraw-Hill Book Company, Inc., 1941. 210 p. illus. 23 cm. (The Pennsylvania State College. Industrial series) \$1.75.

137

Contents: Simple operations. Common fractions. Decimal fractions. Ratio and proportion. Powers and roots. Areas and volumes of simple figures. Circular speeds. Tables. Formulas. Fundamentals of algebra. Equations. Simultaneous equations. Geometric constructions. Trigonometry. Oblique triangles. Logarithms. Solution of triangles by logarithms. Appendix. Index.

Note: This book offers brief treatments of the subjects listed above. Many of the problems were suggested by men teaching in industry and technical schools and by directors of industrial education programs.

COOLEY, HOLLIS RAYMOND, AND OTHERS

Introduction to mathematics; a survey emphasizing mathematical ideas and their relations to other fields of knowledge, by Hollis R. Cooley, David Gans, Morris Kline and Howard E. Wähler. Boston, New York: Houghton Mifflin Company, 1937. 634 p. illus. 24 cm. \$3.50.

138

Contents: Introduction. Part I, The development of elementary mathematics. The elements and axioms of mathematics. Algebraic expressions and equations as a generalization of arithmetic. The use of exponents in computation. The problems and methods of elementary geometry. Indirect measurement—an application of geometry. Coordinate geometry. Part II, The function concept: Some types of functions. Finding equations for useful functions. The use of functions for predictions. Functions as quantitative descriptions. Restrictions on the use of functions. Part III, The limit concept: The concept of a limit. The rate of change of a function. The use of limits in defining concepts. Part IV, Some topics in modern mathematics; the nature of mathematics; relations to other fields of knowledge. Infinite classes. Non-Euclidean geometry. The nature of mathematics. The theory of relativity. The further significance of mathematics for other fields of knowledge.

Note: This book offers fundamental material for an orientation or appreciation course in college mathematics. Exercises and references to literature are included.

CURRIER, CLINTON HARVEY, AND OTHERS

A course in general mathematics, by Clinton Harvey Currier, Emery Ernest Watson, and James Sutherland Frame. Revised edition. New York: The Macmillan Company, 1939. 382 p.

illus. 22 cm. (A series of mathematical texts, for colleges, edited by E. R. Hedrick) \$3.00.

139

Contents: Functions and graphs. Straight line formulas. Exponents. Logarithms. Trigonometry. Solution of triangles. Relations among trigonometric functions. Theory of equations. Differentiation of algebraic functions. Integration. Progressions and series. Interest formulas. Binomial theorem. Laws of growth. Exponential function. Permutations and combinations. Conic sections. Polar coordinates and allied topics. Complex numbers. Space of three dimensions. Theory of measurements. Tables. Answers. Index.

Note: The elements of algebra, trigonometry, analytic geometry, and calculus, intended as a text for use in the freshman year of colleges and universities and assuming only the minimum entrance requirements in elementary algebra and plane geometry. The revised edition consists of a rearrangement of material, plus new data on compound interest and annuities, new text-figures, and enlarged tables.

DAUS, PAUL HAROLD, AND OTHERS

Basic mathematics for war and industry, by Paul H. Daus, John M. Gleason, and William M. Whyburn. New York: The Macmillan Company, 1944. 277 p. illus. 22 cm. (A series of mathematical texts, for colleges, edited by E. R. Hedrick) \$2.00.

140

Contents (abridged): Arithmetic. Algebra. Geometry. Plane trigonometry. Solid geometry and spherical trigonometry. Tables. Answers. Index.

Note: Selected principles of elementary mathematics in convenient form for use in practical courses in industry or in the armed services. Practical applications are stressed in the problems and exercises. Useful also in vocational school courses or for home study.

DAVIS, HAROLD THAYER

A course in general mathematics. Bloomington, Ind.: The Principia Press, 1935. 316 p. illus. 23 cm. \$2.50.

140a

Contents: Our number system. Problems in arithmetic. The processes of algebra. The law of exponents and logarithms. Arithmetic and geometric series. The binomial theorem. Interpolation and its uses. Functional relationships. The quadratic equation. Functions of the theory of investment. Permutations and combinations. Probability. The theory of equations. The theory of proportion. The ratios of trigonometry. The application of trigonometry. The function of statistics. Mathematical recreations. The meaning of mathematics. Tables. Answers to problems. Index.

Note: Originally planned for students preparing to become teachers of arithmetic, the work in its present form provides a reasonably complete course in algebra, and through the emphasis of computational methods and the choice of illustrations, the work is also adaptable as an introduction to a standard course in the theory of investment. The latter half of the book is devoted to trigonometry and algebra and prepares the student for analytic geometry and calculus. There is also a preparatory course in the theory and application of statistics. The historical point of view is stressed throughout.

ELLIOTT, W. W., AND E. ROY C. MILES

College mathematics; a first course. New York: Prentice-Hall, Inc., 1943. 396 p. illus. 23 cm. \$4.00.

141

Contents: Part I, Algebra: Review topics. Functions and graphs. Exponents, radicals, complex numbers. The quadratic function and the quadratic equation. Mathematical induction and the binomial theorem. Theory of equations. Logarithms. Progressions. Interest and annuities. Permutations. Combinations. Probability. Part II, Trigonometry: Angles and their measure. Trigonometric functions. Values of functions of acute angles. Applications. Values of trigonometric functions for general angles. Applications. Addition formulas. Inverse trigonometric functions, trigonometric equations. Part III, Introduction to analytic geometry: Curve and equation. The linear equation and the straight line. Special types of second degree equations and their loci. The locus of the general second degree equation. Part IV, Introduction to calculus: The derivative. Differentiation of algebraic func-

tions. Applications of the derivative. Integration. Part V, Miscellaneous exercises. Index.

Note: Primarily for the use of students who take only one year of mathematics and who are interested in the natural sciences or in business administration rather than in the exact sciences or engineering. Adaptable also for students who expect to continue the study of mathematics beyond the first year. An eighteen-page pamphlet of mathematical tables accompanies the text.

HARKIN, DUNCAN CLAIRE

Fundamental mathematics. New York: Prentice-Hall, Inc., 1941. 434 p. illus. 23 cm. (Prentice-Hall mathematical series, Albert A. Bennett, editor) \$4.00.

142

Contents (abridged): Part I, Dealing with counting: Numbering and number names. Two. Development of the number concept. The decimal system. Finite modular arithmetic. The calendar. Fractions. Sum of geometric series. Part II, Marks and their meaning: Symbolism. Applications. Part III, Algebra: Discovery. Arithmetic series of higher order. Mathematical induction. The values of a function. The solutions of equations by algebra. Diophantus's solution of quadratic equations. Proportion. Continued fractions. Part IV, Geometry: A miniature world. Convex polyhedra. Euclidean plane geometry. Similarity. Squaring the circle. Part V, Wonder-working calculus: How small is small? Taylor series. Convergence. Integration. Integral inversion. Systematic integration. Fourier series. References. Index.

Note: A general survey for first- and second-year college students of the fundamentals of mathematics from the elementary facts of addition to the complex series. The material is presented in a sound and attractive way. Extensive references are cited for each chapter.

HART, WALTER WILSON

Basic mathematics, a survey course. Boston: D. C. Heath and Company, 1942. 461 p. illus. 20 cm. \$1.52.

143

Contents: Part I: Arithmetic computation. Elementary geometry. Mensuration of figures. Elementary algebra. Part II: Logarithms. Elementary trigonometry. Demonstrative geometry. Solid geometry. Advanced algebra. Tables. Index.

Note: A survey of secondary mathematics for students who are preparing for service in the armed forces and industry. Based partly on material in *Bulletin TM-1-900* of the United States War Department and *Leaflet no. 62* of the United States Office of Education, as well as *Bulletins 24* and *26* of the United States Civil Aeronautics Administration. Practical problem material includes applications to aeronautics, artillery practice, navigations, and industry. A condensed version of the same book is offered as *Basic mathematics*, Brief edition, Boston: D. C. Heath and Company, 1942, 234 p., \$1.20.

HART, WILLIAM LEROY, AND OTHERS

First year college mathematics, by William L. Hart, W. A. Wilson, and J. I. Tracey. With tables. Boston: D. C. Heath and Company, 1943. 886 p. illus. 22 cm. \$4.00.

144

Contents (abridged): Essentials of college algebra, by William L. Hart. Plane and spherical trigonometry, by William L. Hart. Analytic geometry, by W. A. Wilson and J. I. Tracey. Tables, compiled by William L. Hart.

Note: Offers under one cover three separate texts designed particularly for men of the armed forces who are to be sent to college or technical schools or other emergency training programs. Useful also as a basis for a normal one-year course in college mathematics for any students who have had elementary high school mathematics. The first text is based on William L. Hart's *College algebra*, revised edition, Boston, 1938; the second, on Walter W. and William L. Hart's *Plane trigonometry, solid geometry, and spherical trigonometry*, Boston, 1942; and the final text presents the complete content of Wilson and Tracey's *Analytic geometry*, alternate edition, Boston, 1937.

HELLIWELL, CHARLES HAROLD, AND OTHERS

Fundamentals of college mathematics, by Charles Harold Helliwell, Arthur Tilley, and Howard Elmer Wahlert. New York: The Macmillan Company, 1935. 406 p. illus. 20 cm. \$3.90.

145

Contents: Review topics. The number systems of algebra. Functions and graphs. Simultaneous linear equations. Quadratic equations. General methods of solving the n th degree equations. Exponents and logarithms. Trigonometry—the trigonometric functions. Trigonometry—the solution of triangles. Trigonometry—analysis. Coordinate geometry—the straight line. Limits. Differentiation of algebraic functions. Applications of differential calculus. Integration of algebraic functions. Coordinate geometry—the conic sections. Translation of coordinates. Polar coordinates. Trigonometric functions. Exponential and logarithmic functions. Progressions and expansions. Permutations, combinations, and probability. Tables. Answers. Index.

Note: This textbook presupposes only a knowledge of elementary algebra and plane geometry. The material is presented in such a way that the student may be led gradually from familiar ideas of algebra to the solution of the n th degree equation, then through the basic ideas of trigonometry and the analytic geometry of the straight line to the differential and integral calculus. Answers to alternate problems are given at the end of the book.

HILL, MICHAEL ARENDELL, AND JOSEPH BURTON LINKER

Introduction to college mathematics. New York: Henry Holt and Company, 1938. 373 p. 24 cm. \$2.65. 146

Contents: Part I, Algebra and trigonometry: Introduction. Functions. Graphical representation of functions. Factoring. Fractions. Exponents and radicals. Logarithms. Solution of right triangles by logarithms. Linear equations. Quadratic functions and equations. Equations of higher degree. Functions of multiple angles. Oblique triangles. Complex numbers. Part II, Elements of analytic geometry and calculus: The straight line. The circle. The conics. Polar and parametric forms. Differentiation. Integration. Answers to odd numbered exercises. Index. Tables.

Note: Part I is the same as that of the author's *First year college mathematics*, New York, 1936, and presents algebra and trigonometry as a unified whole. Part II includes the basic principles of calculus in addition to analytic geometry. Intended for use in comprehensive one-year college courses for general college students.

JOHNSTON, FRANCIS EDGAR

Introductory college mathematics. New York: Farrar & Rinehart, Inc., 1936. 314 p. illus. 21 cm. \$2.60. 147

Contents: Trigonometric functions. Functions of several angles. Exponents and logarithms. The solution of triangles. The straight line; introduction to determinants. The quadratic equation; the factor theorem. Mathematical induction. Complex numbers. Polar coordinates; curve tracing. The conic sections. The general equation of the second degree. Tangents, normals, and diameters. Application of analytic methods. Coordinates in space; the equation of the plane. The general theory of determinants. The straight line in space. Answers. Tables. Index.

Note: Algebra is here treated as a tool subject and algebraic concepts are introduced and developed as they are needed for the study of trigonometry and analytic geometry. The calculus is not introduced except for the notion of the derivative as related to the slope of a curve. Intended for freshman college courses.

KEAL, HARRY MORTON, AND CLARENCE J. LEONARD

Essential mathematics for skilled workers. New York: John Wiley & Sons, Inc., 1942. 293 p. illus. 18 cm. (Cass Technical High School series) \$2.00. 148

Contents: Arithmetic review. The equation. Evaluation. Positive and negative numbers. Ratio and proportion. Cutting speed, pulleys, and gears. Technical formulas involving squares and square root. Quadratic equations. Simultaneous equations. The graph. Geometry. Logarithms. Right triangulation. Oblique triangles. Applied problems. Tables. Index.

Note: This book contains a review of arithmetic, elementary algebra, practical geometry, logarithms, applied trigonometry, and the slide rule, with a maximum of practice and a minimum of abstract theory. Shop practice has been avoided to make the book suitable for any applied science. Simple applications and formulas from many fields are used and classified for their interest and practice value.

LASLEY, JOHN WAYNE, AND EDWARD TANKARD BROWNE

Introductory mathematics. New York: McGraw-Hill Book Company, Inc., 1933. 439 p. illus. 23 cm. \$2.75. 149

Contents: Part I, Algebraic functions: The linear function. The quadratic function. Functions of higher degree. The rate of change of a function. Functions changing at a given rate. Part II, Transcendental functions: Exponential and logarithmic functions. Trigonometric functions. Applications of the logarithmic and trigonometric functions to the solution of oblique triangles. Index.

Note: A text for college freshmen, incorporating what in the judgment of the authors are the better features of the classical compartment type and the fusion point of view.

LOGSDON, MAYME IRWIN

Elementary mathematical analysis, with tables. New York: McGraw-Hill Book Company, Inc., 1932-33. 2 v. illus. 23 cm. \$4.00. 150

Contents: Volume I: Variables. Functions. Notations. Trigonometric functions and their uses. The logarithmic and exponential functions and their uses. The use of logarithms in computation. Further trigonometric relations and their uses. Functions defined by statistical data. Polynomials of the first degree. Simultaneous linear equations. Polynomials of the second degree. Systems of equations. Polynomials. Applications of maxima and minima. Rational functions. Volume II: The number system of elementary mathematics. Solution of equations. Radicals and equations containing radicals. Simultaneous linear equations in more than two variables. Determinants. Trigonometric analysis and applications. The ellipse. The hyperbola. The parabola. Conic sections. Transformation of coordinates. Polar coordinates. Certain special curves. Progressions. Mathematical induction. The binomial theorem. Permutations and combinations. Partial fractions. Probability. Index.

Note: An arrangement of the material of trigonometry, college algebra, and analytical geometry for the general college student not intending to specialize in mathematics or engineering. The ideas and method of the calculus are introduced early. Volume I meets the needs of the student who can give only one semester or one quarter to college mathematics. Volume II extends the treatment to meet the needs of the student who wishes to prepare for the calculus and more advanced courses and of the student who needs some mathematics as preparation for statistical work in nonmathematical fields.

MERRIMAN, GAYLORD MAISH

To discover mathematics. New York: John Wiley and Sons, Inc., 1942. 435 p. illus. 23 cm. \$3.00. 151

Contents: The fountainhead. Magic of the mind. The divine integer. Work of man. Algebraic counterpoint. "Euclid alone?" Geometry's royal road. Declaration of dependence. Eventually and forever after. Theme with variations. Power—and snowballs. Period piece. Peak in Darien. Appendix. Notes and exercises. Author index. Subject index.

Note: An informal discussion of certain significant principles of mathematics. The treatment is designed to interest the college student, but the author has made a special effort to avoid the conventional textbook style. The book is of interest to mathematically inclined lay readers. Full notes, exercises, and bibliographical references are given in the appendix.

MOORE, JUSTIN HARTLEY, AND JULIO A. MIRA

The gist of mathematics. New York: Prentice-Hall, Inc., 1942. 726 p. illus. 23 cm. (Prentice-Hall mathematics series, Albert A. Bennett, editor) \$5.00. 152

Contents (abridged): The language of mathematics. Symbol technique. Balancing ideas. Modern wizardry. Some elementary concepts of space. Measuring space by triangles. Fundamental constructions. Comparison of numerical quantities. Comparison of magnitudes. Graphs. Triangle measuring. Introduction to areas. Areas and quadratics. Loci or the paths of a point. Encircling space. Angle reckoning. The girdled field. The march of numbers. Logarithms. Solid shapes. Volumes. The hierarchy of balances. Complex numbers. Limits. Additional exercises and problems. Appendices. Index. Tables.

Note: An introduction to general mathematics for first- and second-year college students. The appendixes include a list of symbols, mensuration formulas, a list of facts regarding spatial relationships. The tables are supplied in a separate pamphlet inserted in a pocket.

MUNSHOWER, CARL WALLACE, AND JAMES FLETCHER WARDWELL

Basic college mathematics, a general introduction. New York: Henry Holt and Company, 1942. 612 p. illus. 24 cm. \$3.20. 153

Contents: Introduction. Functions of first degree. The power function. The quadratic function. Summation. Polynomial functions. Other algebraic functions. Logarithmic functions. Exponential functions. Trigonometric functions. Trigonometric relations. Triangles. Further properties of trigonometric functions. Inverse trigonometric functions. Polar coordinates. Complex numbers. Hyperbolic functions. Implicit functions of second degree. Implicit functions relating three variables. Determinants. Permutations, combinations, probability. Answers to odd-numbered problems. Tables. Formulas for reference. Index.

Note: Surveys and unifies, through the concept of function, the material of the basic collegiate mathematics curriculum—algebra, trigonometry, analytic geometry, and the elements of calculus. Designed mainly for students taking only one course in college mathematics.

RICHARDSON, MOSES

Fundamentals of mathematics. New York: The Macmillan Company, 1941. 525 p. illus. 24 cm. \$3.25. 154

Contents (abridged): Introduction. Logic, mathematics, and science. The simplest numbers. Further evolution of the number system. The logic of algebra. The algebra of logic, and other algebras. Arithmetic, exponents, and logarithms. Impossibilities and unsolved problems. Analytic geometry. Functions. Limits and the calculus. Trigonometric functions. Probability and statistics. Natural numbers and mathematical induction. Cardinal numbers, finite and transfinite. Euclidean and non-Euclidean geometry. Two simple mathematical sciences. The nature of mathematics. Appendix. Tables. Answers. Index.

Note: A textbook for college students. Much of the exposition is presented in narrative form. The book is intended for liberal arts students who will not specialize in nor use mathematics extensively in their life work. Supplemental bibliographies are presented at the end of most chapters.

RICHTMEYER, CLEON C., AND JUDSON W. FOUST

First year college mathematics. New York: F. S. Crofts & Company, 1942. 461 p. illus. 23 cm. \$3.25. 155

Contents: Preface. Foreword. A review of elementary algebra. Functions and graphs. Derivatives and antiderivatives. First degree functions and linear equations. Second degree functions and quadratic equations. General polynomial functions and polynomial equations. Fractional functions and equations. Irrational functions and equations. Trigonometric functions of acute angles. Trigonometric functions of general angles. Common logarithms. Solution of right triangles by logarithms. Solution of oblique triangles. Radian measure, inverse functions, graphs. Systems of equations. Introduction to analytic geometry. The straight line. The circle. Parabola, ellipse, and hyperbola. Transformation of coordinates. Tangents and normals. Polar coordinates. Parametric equations. Progressions. Permutations, combinations, probability. Mathematical induction and binomial theorem. Complex numbers. Natural logarithms and exponentials. Answers to self-tests. Index.

Note: A unified course covering algebra, trigonometry, plane analytics, introduction to the fundamental concepts of differentiation, and integration. Features include a brief review of algebra in the first chapter, more than 500 self-tests, 3976 problems, and many practical illustrative examples. The organization is flexible so that certain topics can easily be omitted to meet the varying needs of shorter courses.

SLOBIN, HERMON LESTER, AND WALTER E. WILBUR

Freshman mathematics. Revised edition. New

York: Farrar & Rinehart, Inc., 1938. 584 p. illus. 20 cm. \$3.50. 156

Contents: Book I, Algebra: Measurement and number. The fundamental operations applied to literal number symbols. Review topics of elementary algebra. Constants, variables, and graphic representation. First degree equations in one unknown. Variations. Simultaneous first degree equations. Determinants. Exponents—radicals. Quadratic functions and equations. Systems containing simultaneous equations. Integral rational functions. Logarithms. Progressions. Mathematical induction. Permutations, combinations, and probability. Partial fractions. Infinite series. Review exercises. Book II, Trigonometry: Trigonometric functions. Trigonometric identities and conditional equations. Solution of triangles. Complex numbers. Book III, Analytic geometry: Points, line-segments. Graphs of equations. Equations of loci. The straight line. The circle. The ellipse. The hyperbola. The parabola. The general equation of the second degree. Curve fitting. Parametric representation. Solid analytic geometry. Answers. Index.

Note: Presents algebra, trigonometry, and analytic geometry as a tandem course, permitting adequate preparation in each subject, the use of arithmetic and algebra in trigonometry, and the use of all three in analytical geometry. The revised edition contains new material on determinants, identities, complex numbers, curve fitting, and other subjects.

UNDERWOOD, RALPH SYLVESTER, AND FRED W. SPARKS

Living mathematics; a first year college course. New York: McGraw-Hill Book Company, Inc., 1940. 365 p. illus. 23 cm. \$3.00. 157

Contents (abridged): Part I, Algebra: The haphazard beginning. Onward to algebra. A sentence and what comes of it. Now we picture it. Putting exponents to work. A toy becomes a tool. Part II, A look over the field: Measuring the inaccessible. New life in old figures. We creep upon solutions. Variables caught in action. Our results grow prophetic. A ladder without a top. Fun with figures. Index.

Note: This textbook previously published in mimeographed form in 1938 under the title *Mathematics made different* specifically covers in Part I the ground of an orthodox three-semester-hour course in algebra. In Part II, trigonometry, analytic geometry, more advanced algebra, and calculus with a brief explanation of the theory of numbers are highlighted in such a manner as to arouse in the student and the non-specialist an interest in mathematics and its place in modern life. Illustrative material and exercises appear throughout the book. Tables of logarithms, compound interest and discount, annuity, trigonometric functions, and the American experience tables of mortality are given.

WELLS, VOLNEY HUNTER

First year college mathematics. New York: D. Van Nostrand Company, Inc., 1938. 409 p. illus. 23 cm. \$3.00. 157a

Contents (abridged): Part I, Trigonometry. Part II, Mathematical analysis: Cartesian coordinates. Equations and loci. Straight lines. Functions and their graphs. Solution of n th degree equations. Rate of change. Differentiation of polynomials. Parabolas. Circles. Differentiation of algebraic functions. Central conics. Curve tracing. Integration. Parametric equations. Transformation of coordinates. Polar coordinates. Complex numbers. Index. Answers.

Note: This work covers the essentials of college mathematics for freshmen, presenting the fundamentals of trigonometry, analytic geometry, and calculus. The latter subject is introduced early in Part II and there are continued applications of the calculus ideas and methods to a variety of algebraic and analytic problems. A large number of graded exercises are included.

Introductory Algebra

COOLEY, HOLLIS RAYMOND, AND OTHERS

College algebra; first year college mathematics, by Hollis R. Cooley, Palmer H. Graham, Frederick W. John, and Arthur Tilley. New York: McGraw-Hill Book Company, Inc., 1942. 384 p. illus. 23 cm. \$2.25. 158

Contents: Reasoning and mathematics. Rational numbers and operations. Irrational numbers and radicals. Brief review of real numbers. Imaginary and complex numbers. Algebraic expressions and relations. The binomial theorem. Progressions with applications to finance. Permutations and combinations. Probability. Linear and quadratic equations in one unknown. Linear equations in more than one unknown. Determinants. Functional relations. Variation and proportion. Graphs of some algebraic functional relations. Simultaneous quadratic equations. Equations of higher degree. Index.

Note: A first-year college text for students who wish to prepare for more advanced courses. No previous secondary-school knowledge of mathematics is presupposed, and there is much review material in condensed form following some of the chapters. Practical applications of the binomial theorem, permutations and combinations, and progressions are stressed in their relation to compound interest and statistical distribution.

COWLES, WILLIAM HENRY HARRISON, AND JAMES E. THOMPSON

A text book of algebra for colleges and engineering schools. New York: D. Van Nostrand Company, Inc., 1935. 402 p. illus. 23 cm. \$2.50.

159

Contents: Algebraic laws and principles. Simultaneous simple equations and graphs. Quadratic equations. Simultaneous quadratic equations. Imaginary and complex numbers. Logarithms. The slide rule. Ratio, proportion, and variation. Sequences, progressions, and series. Binomial, exponential, and logarithmic series. Permutations, combinations, and probability. Cubic, quartic, and higher equations. Index.

Note: Written for a course in college algebra, the significance between algebraic relationships and practical work has been stressed. Graphic presentation is emphasized as a preparation for analytical geometry and so that the student may be taught graphic methods in his first year of scientific and engineering study.

HARDING, ARTHUR McCracken, AND GEORGE W. MULLINS

College algebra. Revised edition. New York: The Macmillan Company, 1936. 379 p. illus. 19 cm. (A series of mathematical texts for colleges, edited by E. R. Hedrick) \$2.25.

160

Contents: Introduction. Special products and factoring. Fractions. Linear equations. Binomial theorem, exponents, radicals. Quadratic equations. Ratio and proportion. The progressions. Logarithms. Mathematical induction. Binomial theorem. Graphical representation of numbers. Linear functions. Quadratic functions. Simultaneous quadratic equations. Polynomial functions. Higher equations. Permutations and combinations. Probability. Determinants. Partial fractions. Interest and annuities. Complex numbers. Scales of notation. Tables. Answers. Index.

Note: Contains the material usually included in a one-semester course in college algebra. The chapters are arranged to permit flexibility of teaching, and there is emphasis upon the graphical method of solution as well as an introduction to the derivative. There is more introductory material plus additional problems in the revised edition.

KUHN, HARRY WALDO, AND JAMES HENRY WEAVER

Elementary college algebra. New York: The Macmillan Company, 1935. 359 p. illus. 20 cm. (A series of mathematical texts, edited by E. R. Hedrick) \$2.20.

161

Contents: Fundamental operations. Equations. Special products and factoring. Fractions. Functions and graphs. Systems of linear equations. Exponents and radicals. Quadratic equations. Inequalities, ratio. Proportion and variation. Systems of quadratic equations. Logarithms. Progressions. Compound interest and annuities. Mathematical induction. Binomial theorem. Complete numbers. Integral rational functions. Theory of equations. Solution of numerical equations. Permutations and combinations. Probability. Determinants. Partial fractions. Tables. Answers. Index.

Note: A suitable review of high school algebra is included and all material is presented in a simple logical manner suited to the mathematical maturity of freshmen students. Special emphasis is placed on graphical methods of solution.

PALMER, CLAUDE IRWIN, AND WILSON LEE MISER

College algebra. Second edition. New York: McGraw-Hill Book Company, Inc., 1937. 467 p. illus. 19 cm. \$2.50.

162

Contents: Fundamental operations. Type forms and factoring. Fractions. Functions and graphs. Linear equations. One unknown. Linear equations. More than one unknown. Exponents. Radicals. Quadratic equations. Simultaneous quadratic equations. Inequalities. Theory of quadratic equations. Ratio, proportion and variation. Logarithms. Binomial theorem and mathematical induction. Progressions and investment. Complex numbers. Theory of equations. Partial fractions. Permutations, combinations, probability. Determinants. Infinite series. Tables.

Note: A text that aims to make the student feel that he is dealing with a subject that has applications to his daily life. The exercises are numerous and range from quite simple problems to such as will test the ability of the better student. More than the usual number of actual applications to practical problems are included.

REAGAN, LEWIS MARTIN, AND OTHERS

College algebra, by Lewis M. Reagan, Ellis R. Ott, and Daniel T. Sigley. New York: Farrar & Rinehart, Inc., 1940. 445 p. illus. 21 cm. \$2.50.

163

Contents: Fundamental operations. Functions and graphical representation. Fractions and linear equations. Deductive and inductive reasoning. The binomial theorem. Choice. Probability. Statement problems. Exponents and radicals. Logarithms. Sequences and series. Interest and annuities. Complex numbers. Factorization of polynomials. Quadratic equations. Theory of equations. Systems of equations of higher degree. Determinants. Partial fractions. Ratio, proportion, and variation. Selected topics. Inequalities. Miscellaneous and review exercises. Appendix. Tables. Index.

Note: Review topics from elementary high-school algebra are introduced only as they are needed in each section for the development of new material. Certain topics requiring little knowledge of algebra are presented, such as choice and probability, to stimulate the interest of the freshman.

REES, PAUL KLEIN, AND FRED W. SPARKS

College algebra. New York: McGraw-Hill Book Company, Inc., 1939. 312 p. illus. 23 cm. \$2.25.

164

Contents: Functions, graphs, and linear equations. Systems of linear equations. Ratio, proportion, and variation. Exponents and radicals. Logarithms and exponential equations. Special products and factoring. Fractions, and fractional equations. Partial fractions. Quadratic equations. Higher degree equations. Simultaneous quadratic equations. Inequalities. Progressions. Compound interest and annuities. Mathematical induction. The binomial theorem. Permutations and combinations. Probability. Determinants. Complex numbers.

Note: The purpose of this book is to give the student the training in algebra that is fundamental for the more advanced courses in mathematics, in science, and in engineering. The opening chapters are devoted to functions, graphs, linear equations, systems of linear equations, and other topics not covered by high school algebra.

RIDER, PAUL REECE

College algebra. New York: The Macmillan Company, 1940. 372 p. illus. 22 cm. \$2.00.

165

Contents: Review of elementary algebra. Linear equations. Factoring. Fractions. Exponents and radicals. Quadratic equations. Systems of equations involving quadratics. Inequalities. Proportion and variation. Mathematical induction and the binomial formula. Progressions. Complex numbers. Theory of equations. Logarithms. Compound interest and annuities. Permutations and combinations. Probability. Determinants. Partial fractions. Infinite series. Finite difference. Tables. Answers. Index.

Note: For first-year students in colleges and technical schools. It presents a thorough review of the topics of elementary and intermediate algebra together with a complete course for more mature students. Special treatment is given the subject of determinants and the theory of equations.

RIETZ, HENRY LEWIS, AND A. R. CRATHORNE
College algebra. Fourth edition. New York: Henry Holt and Company, 1939. 298 p. illus. 22 cm. (American mathematical series; E. J. Townsend, general editor) \$1.90. 166

Contents: Introduction. A review of certain elementary operations of pre-college algebra. Functions and their graphs. Equations and their solutions. Systems of linear equations. Exponents and radicals. Quadratic equations. Systems of equations involving quadratics. Inequalities. Ratio, proportion, and variation. Progressions. Mathematical induction and the binomial theorem. Complex numbers. Theory of equations. Logarithms. Compound interest and annuities. Permutations and combinations. Relative frequency and probability. Partial fractions. Determinants. Limits. Infinite series. Answers. Index.

Note: For use in the freshman year of colleges and technical schools. Special attention is given to a review of high school algebra and to the application of algebraic methods to physical problems. The fourth edition contains new exercises and problems and new material on compound interest and annuities.

SMALL, LLOYD LEROY

College algebra. New York: McGraw-Hill Book Company, Inc., 1931. 450 p. illus. 21 cm. \$2.50. 167

Contents: Introduction. Variables and functions. Linear functions of one variable. Quadratic functions of one variable. Linear functions of several variables. Quadratic functions of several variables. Polynomial functions of one variable. Fractional functions of one variable. Irrational functions of one variable. Power functions and exponential functions of one variable. Logarithmic functions. Miscellaneous topics. Supplementary exercises.

Note: A unified presentation has been secured in this textbook by basing the arrangement and classification of material and the manner of treatment on the function concept.

SMITH, EDWIN RAYMOND

Algebra for college students. New York: The Dryden Press, 1942. 343 p. illus. 21 cm. (The Dryden Press. Mathematics publications: general editor, E. R. Smith) \$2.25. 168

Contents: Algebraic expressions and operations. Rational fractions. Radical expressions. Exponents. Functions defined by algebraic expressions. Quadratic equations. Theory of quadratic equations. Systems of equations. Logarithms. Exponential and logarithmic equations. Ratio, proportion, and variation. The binomial theorem. Inequalities. Progression. Interest and annuities. Complex numbers. Theory of equations. Partial fractions. Determinants. Infinite sequences and limits. Infinite series. Permutations and combinations. Probability. Statistics. Index. Answers of odd examples. Tables.

Note: An adaptation of the author's *College algebra*, New York, 1938. The present work is designed for students who have had but one year of high school algebra but may also be used by more advanced students if certain chapters are omitted or skimmed through briefly.

SISAM, CHARLES HERSHEL

College algebra. New York: Henry Holt and Company, 1940. 395 p. illus. 22 cm. \$2.15. 169

Contents: Fundamental operations. Factoring and fractions. Equations. Ratio, proportion, and variation. Functions, coordinates, and graphs. Simultaneous linear equations. Exponents and radicals. Quadratic equations. Systems of equations involving quadratics. Progressions. The binomial theorem. Inequalities. Complex numbers. Elements of the theory of equations. Advanced topics in the theory of equations. Logarithms. Permutations and combinations. Probability. Interest and annuities. Determinants. Partial fractions. Infinite series. Tables. Answers. Index.

Note: The subject matter is presented in such a way that the instructor may adapt his choice of material to the needs of students who have had no high school algebra and of those who have had one year or more of high school algebra. Some advanced material is included, such as partial fractions and infinite series.

URNER, SAMUEL EVERETT, AND WILLIAM B. ORANGE

Intermediate algebra. New York: McGraw-Hill Book Company, Inc., 1937. 432 p. illus. 19 cm. \$2.00. 170

Contents: Fundamental operations. Applied algebra. Algebraic technique. Further study of equations. Systems of equations. Radicals. Exponents. Imaginaries. Quadratic equations. Non-linear systems. Logarithms. Trigonometry. Progressions. Mathematics of investment. The binomial theorem. Determinants. Tables.

Note: Among the outstanding features of this book are: greater attention to development and explanation of the fundamentals in the earlier parts of the course; more consistent emphasis upon functional relationships and graphic methods; greater variety of significant applications, related to actual life situations; more careful development of concepts applying to equations; more experimental exercise material; more comprehensive treatment of interpolation.

WOLFE, JOHN H., AND OTHERS

Practical algebra with geometrical applications, by John H. Wolfe, William F. Mueller, and Seibert D. Mullikin. New York: McGraw-Hill Book Company, Inc., 1940. 314 p. illus. 20 cm. \$2.20. 171

Contents: Positive and negative numbers. Formulas. Fundamental operations. Special products and factoring. Fractions. Equations. Exponents. Standard formulas. Radicals. Graphs. Linear system of equations. Three unknowns. Geometric problems. Ratio and proportion. Quadratic equations. Radical equations. Trigonometry. Recurring gear and cam problems. Tables. Answers. Index.

Note: This text provides shop men and apprentices with the tools they need to solve problems arising in their work. It begins with simplest algebraic concepts, goes on with geometrical applications and a treatment of trigonometry to prepare the reader for accurate computations of those problems involving trigonometry. Many practice problems are included, with answers to every third problem given for the use of home students. Five-place trigonometric tables are also provided.

Higher Algebra

ALBERT, ABRAHAM ADRIAN

Introduction to algebraic theories. Chicago: The University of Chicago Press, 1941. 137 p. 23 cm. \$1.75. 172

Contents (abridged): Polynomials. Rectangular matrices and elementary transformations. Equivalence of matrices and of forms. Linear spaces. Polynomials with matrix coefficients. Fundamental concepts.

Note: This book is a text for a course making the appropriate transition from the intuitive to the abstract. It can be used to give training in the theory of matrices to the beginner, but with modern simple proofs. Its only prerequisite material is a knowledge of that part of the theory of equations given as a chapter of ordinary text in college algebra as well as a reasonably complete knowledge of the theory of determinants.

ALBERT, ABRAHAM ADRIAN

Modern higher algebra. Chicago: The University of Chicago Press, 1937. 319 p. 25 cm. (The University of Chicago science series) \$4.00. 173

Contents (abridged): Groups and rings. Rings with a unity element. Matrices. Similarity of square matrices. Symmetric and skew matrices. Finite groups. Fields over \mathcal{F} . The Galois theory. Cyclic fields. Algebra of matrices. Introduction to the transcendental theory of fields. Valuation functions. Glossary. Index.

Note: This is the first exposition of the theory of matrices over a general field. The modern viewpoint of automorphism groups is used to teach the Galois theory. The text is the first in English on algebra providing adequate foundation for the study of linear associative algebras and gives the only exposition in English of the theory of fields with a valuation, and consequently of p -adic numbers. Proofs of the theorems are exceptionally short and algebraic technique is emphasized throughout the text.

ALBERT, ABRAHAM ADRIAN

Structure of algebras. New York: American Mathematical Society, 1939. 210 p. 26 cm. (American Mathematical Society. Colloquium publications. Vol. xxiv) \$4.00. 174

Contents: Fundamental concepts. Ideals and nilpotent algebras. The structure theorems of Wedderburn. Simple algebras. Crossed products and exponents. Cyclic semi-fields. Cyclic algebras and p -algebras. Representations and Riemann matrices. Rational division algebras. Involutions of algebras. Special results. Bibliography. Index.

Note: This volume is divided roughly into two parts, the first being concerned with the general theory of algebras, the second containing applications to related problems. In the general theory of algebras there are two main topics of discussion, the first the reduction to simple algebras and the second the discussion of the simple algebras themselves. Among the applications of the theory of algebras treated are the theory of representations, the enumeration of the normal simple algebras over finite algebraic fields, cyclic systems, and the modern theory of Riemann matrices. This book is founded on the author's *Modern higher algebra*, described above.

ARTIN, EMIL, AND OTHERS

Rings with minimum condition, by Emil Artin, Cecil J. Nesbitt, Robert M. Thrall. Ann Arbor, Mich.: University of Michigan Press, 1944. 123 p. 23 cm. (University of Michigan. Publications in mathematics. No. 1) Paper, \$1.50. 175

Contents: Rings and vector spaces. Minimum condition. Matrix representations. Semisimple rings. Simple rings. Kronecker products of spaces and rings. Splitting fields and crossed products. Nonsemisimple rings with minimum condition. Index.

Note: This work is mainly a study of simple rings and their representation theory. It is partly based on material used for lectures at the University of Michigan and Indiana University, and is designed primarily for readers who are unfamiliar with algebraic methods.

BIRKHOFF, GARRETT

Lattice theory. New York: American Mathematical Society, 1940. 155 p. illus. 26 cm. (American Mathematical Society. Colloquium publications. Vol. xxv) \$2.50. 176

Contents: Partially ordered systems. Lattices. Modular lattices. Complemented modular lattices. Distributive lattices. Boolean algebras. Applications to function theory. Applications to logic. Applications to probability. Unsolved problems. Bibliography. Indexes.

Note: This is the first book on the far-reaching subject of lattices, a branch of topological algebra. The author takes the reader through the most important classes of lattices by imposing successively restrictive conditions. The last chapters are devoted to the application of lattice theory to function theory, logic and probability theory.

BIRKHOFF, GARRETT, AND SAUNDERS MACLANE

A survey of modern algebra. New York: The Macmillan Company, 1941. 450 p. illus. 22 cm. \$3.75. 177

Contents (abridged): The integers. Rational numbers and fields. Real numbers. Polynomials. Complex numbers. Group theory. Vectors and vector spaces. The algebra of matrices. Linear groups. Rank and determinants. Algebra of classes. Transfinite arithmetic. Rings and ideals. Algebraic number fields. Galois theory. Bibliography. Index. Index of special symbols.

Note: Presupposing nothing but high school algebra, this textbook for college students gives an integrated study of the theory of equations, elementary number theory, and modern algebra which have exerted influence on modern physics, philosophy, and higher mathematics.

JACOBSON, NATHAN

The theory of rings. New York: The American

Mathematical Society, 1943. 150 p. 26 cm. (Mathematical surveys. No. II) \$2.25. 178

Contents: Groups and endomorphisms. Vector spaces. Non-commutative principal ideal domains. Structure of rings of endomorphisms and of abstract rings. Algebras over a field. Multiplicative ideal theory. Bibliography. Index.

Note: This book treats theories of fundamental importance in modern algebra. It gives an account of the general theory of rings that satisfies the chain condition for ideals. The theory of vector spaces and representation theory are explained in detail and the structure theory of abstract rings is obtained through the regular representation. The exposition is self-contained and elementary and may be followed by the reader who is not an expert in modern algebra.

MACDUFFEE, CYRUS COLTON

An introduction to abstract algebra. New York: John Wiley and Sons, Inc., 1940. 303 p. 23 cm. \$4.00. 179

Contents: The theory of numbers. Finite groups. Algebraic fields. Integral algebraic domains. Rings and fields. Perfect fields. Matrices. Linear associative algebras. Index. Symbols.

Note: This textbook for graduate students presupposes a course in theory of equations. The abstract point of view is developed gradually, with discussions of special cases, and concrete instances of abstract ideas when they are presented. The author endeavors to give to the student a selected body of facts from number theory, group theory, etc., which will serve as a background for understanding and appreciating the generalized results.

MACDUFFEE, CYRUS COLTON

Vectors and matrices. Ithaca, N.Y.: The Mathematical Association of America, 1943. 192 p. illus. 19 cm. (The Carus mathematical monographs. No. 7) \$2.00. 180

Contents: Systems of linear equations. Vector spaces. Determinants. Matrix polynomials. Union and intersection. Rational canonical form. Elementary divisors. Orthogonal transformations. Endomorphisms. Bibliography. Index.

Note: A presentation of the technique in matrix theory, which has been developed during the present century by writers on the rational reduction of a matrix. Intended primarily for teachers and students specializing in mathematics. There is a brief bibliography.

MENGER, KARL

Algebra of analysis. Notre Dame, Ind.: University of Notre Dame, 1944. 50 p. 23 cm. (Notre Dame mathematical lectures. Number 3) Paper, \$1.00. 180a

Contents: Introduction. The algebra of functions of one variable. The algebra of calculus. On functions of higher rank.

Note: A development in terms of operator-theory notation of that class of analysis consisting of formulae in whose proofs the concept of limit is used, including the bulk of formulae of calculus concerning elementary functions and some formulae concerning all differentiable functions. These and related formulae are developed from a few assumptions concerning the three operations of addition, multiplication, and substitution, and the two operators of derivation and antiderivation. The latter part of the work contains a sketch of the theory of functions of several variables.

MOORE, ELIAKIM HASTINGS

General analysis. With the cooperation of Raymond Walter Barnard. Philadelphia: The American Philosophical Society, 1935-39. 2 v. 23 cm. (Memoirs of the American Philosophical Society. Vol. I) \$3.00 per volume. 181

Contents (abridged): Part I, The algebra of matrices: Matrices with elements in a quasi-field. Hermitian matrices. Positive Hermitian matrices. Glossary of symbols. Index. Part II, The fundamental notions of general analysis: Theory of limits. Modular functions. Modular matrices. Linear transformations. Glossary of symbols. Index.

Note: A formal presentation of the author's theory of classes of functions on a general range, with applications to linear equations, the latter including those in a Hilbert space and linear integral equations as special instances. The present two volumes represent only half of the work as originally planned, since Parts III and IV, entitled *Generalized Fourier series and modular spaces* and *The characteristic value problem in general analysis*, have not as yet been published. The present work contains an introduction which describes the genesis of the general analysis theory and provides a survey in broad outline of its content. In addition each chapter has a brief introduction setting forth the principal results attained in the chapter.

WEDDERBURN, JOSEPH HENRY MACLAGAN

Lectures on matrices. New York: American Mathematical Society, 1934. 200 p. illus. 26 cm. (American Mathematical Society. Colloquium publications. Vol. xvii) \$3.35. 183

Contents: Matrices and vectors. Algebraic operations with matrices. The characteristic equation. Invariant factors and elementary divisors. Vector polynomials. Singular matrix polynomials. Compound matrices. Symmetric, skew and Hermitian matrices. Commutative matrices. Functions of matrices. The automorphic transformation of a bilinear form. Linear associative algebras. Appendixes. Bibliography. Index.

Note: The fundamental nature of matrix theory extends its roots under algebra, number theory, geometry, differential and integral equations, wave mechanics—a fairly representative cross-section of modern mathematics. In this volume, which is an outgrowth of the author's lectures given at Princeton since 1920, the entire subject has been completely reworked and the proofs recast.

Theory of Groups

CARMICHAEL, ROBERT DANIEL

Introduction to the theory of groups of finite order. Boston: Ginn and Company, 1937. 447 p. 21 cm. (Textbooks in mathematics, edited by R. D. Carmichael) \$5.00. 184

Contents: Introduction. Five fundamental theorems. Additional properties of groups in general. Abelian groups. Prime-power groups. Permutation groups. Defining relations for abstract groups. Groups of linear transformations. Galois fields. Groups of isomorphisms of Abelian groups of order p^m and type $(1, 1, \dots, 1)$. Finite geometries. Collineation groups in the finite geometries. Algebras of doubly transitive groups of degree p^n and order $p^n (p^n - 1)$. Tactical configurations. Index.

Note: An introduction to the subject for the serious student of advanced mathematics. The author establishes important connections of the theory of finite groups with other domains of mathematics, and brings the reader to the boundary of present knowledge with an outlook on the fields yet to be explored. The material is based largely on existing expositions of the theory, including the works by Burnside, Hilton, Miller, Blichfeldt, and Dickson. The main novelty in the organization of the material is the bringing together of five fundamental theorems in chapter II and in giving the proofs of these as rapidly as possible for the beginning student. More than 750 exercises are included.

MATHEWSON, LOUIS CLARK

Elementary theory of finite groups. Under the editorship of John Wesley Young. Boston: Houghton Mifflin Company, 1930. 165 p. illus. 20 cm. \$2.80. 185

Contents: Examples of groups and some definitions. Permutations and permutation groups. Permutation groups: transitivity and primitivity. Some groups of movements and other special groups. Some general properties of groups. On Abelian groups. On abstract definitions and some well-known groups. The group of isomorphisms and the composition-series. On groups of linear substitutions. Some applications of group theory in other fields. Index.

Note: This is an elementary textbook suited to graduate or advanced undergraduate students beginning a study of the subject. A background of some topics in higher or modern algebra, theory of equations, and theory of algebraic numbers are de-

sirable but not essential. A few original theorems appear in this work for the first time, and the proofs of some older ones have been simplified. There are numerous exercises throughout the work and references to other texts are given at the end of each chapter.

MILLER, GEORGE ABRAM

The collected works of George Abram Miller. Urbana, Ill.: University of Illinois, 1935-38. 2 v. 28 cm. \$7.50 each. 186

Contents (abridged): Historical note on the determination of all the permutation groups of low degrees. Intransitive substitution groups of ten letters. Historical note on the determination of abstract groups of a given order. On the groups that can be represented as multiply transitive substitution groups. Some reminiscences with regard to Sophus Lie. History of the theory of groups to 1900. Some methods of constructing substitution groups. A fundamental theorem with respect to transitive substitution groups. Generalization of the Hamiltonian groups. A new chapter in trigonometry. The groups which contain less than six cyclic subgroups of the same order. Note on the definition of a complete group. Appendix. Subject index. Name index.

Note: A selection of 171 articles from the published writings of George Abram Miller, who retired in 1931 from active service in the Department of Mathematics at the University of Illinois. The articles originally appeared in periodicals and journals over a period of forty years. The contributions range over a large part of the theory of finite groups, and represent a definite contribution to mathematical knowledge. The appendix lists forty papers which were not included.

MURNAGHAN, FRANCIS DOMINIC

The theory of group representations. Baltimore: The Johns Hopkins Press, 1938. 369 p. 23 cm. \$5.00. 187

Contents: Groups and matrices. Reducibility. Group characters. The symmetric group. The characters of the symmetric group. The alternating group. Linear groups. Group integration. The orthogonal group. Spin representations of the rotation group. The crystallographic groups. The Lorentz group.

Note: This book gives an elementary and self-contained account of the theory of group representations with special attention to those groups, particularly the symmetric group and the rotation group, which have turned out to be of fundamental significance for nuclear physics. The theory of group integration is presented in a simple manner. Among the topics treated in detail are the analysis of the direct product of irreducible representations of the symmetric group; the Clebsch-Gordan series; the theory of two-valued or spin representations; the representations of the crystallographic groups and the analysis of their symmetrized Kronecker squares; the representations of the Lorentz group and the theory of semi-vectors.

Theory of Equations

ARTIN, EMIL

Galois theory; lectures delivered at the University of Notre Dame. Edited and supplemented with a section on applications by Arthur N. Milgram. Second edition, with additions and revisions. Notre Dame, Ind.: The University of Notre Dame, 1944. 82 p. 23 cm. (Notre Dame mathematical lectures. No. 2) \$1.25. 187a

Contents: Linear algebra. Field theory. Applications, by A. N. Milgram.

Note: Three papers presenting a summary of certain aspects of the theory of equations based on the work of the French mathematician Évariste Galois (1811-1832). Vector spaces, homogeneous linear equations, extension fields, decomposition of polynomials into irreducible factors, Nöther equations, Kummer's fields, and applications to solvable equations are presented in condensed form. The importance of the papers lies in the author's own improvement on the classical theory. Twelve pages of new material in the form of revisions and expansion of certain details are included in the second edition.

DICKSON, LEONARD EUGENE

New first course in the theory of equations. New York: John Wiley & Sons, Inc., 1939. 185 p. illus. 22 cm. \$1.75. 188

Contents (abridged): Complex numbers. Elementary topics. Integral and rational roots; upper limit to real roots. Impossibility of the trisection of an angle or construction of regular polygons of seven and nine sides. Solution by radicals of cubic and quartic equations. The graph of an equation; derivations. Number of real roots; isolation of a root. Solution of numerical equations. Determinants; systems of linear equations. Symmetric functions. Elimination; resultants and discriminants. Roots of unity and regular polygons. Appendix. Index.

Note: An elementary college textbook designed to follow, or to be studied concurrently with, differential calculus.

LOVITT, WILLIAM VERNON

Elementary theory of equations. New York: Prentice-Hall, Inc., 1939. 237 p. illus. 23 cm. (Prentice-Hall mathematical series; Albert A. Bennett, editor) \$2.50. 189

Contents: Introduction. Simultaneous linear equations in two and three variables. Solution of binomial equations. Properties of polynomials. Elementary theorems on the roots of an equation. Transformation of equations. Cubic and quartic equations. Bounds for the roots of an equation. Separation of the roots. Solution of numerical equations. Determinants. Symmetric functions of the roots. Resultants, discriminants, eliminants. Ruler and compass constructions. Answers. Index.

Note: Although the theory of equations is usually presented in a form suitable mainly for graduate and advanced undergraduate students, the present text makes the subject available to those who have completed a one-semester course in analytic geometry and who have not had calculus. The material deals with algebraic equations and with sets of linear equations, plus a few simple transcendental equations to show the generality and power of Newton's method of solution. Simultaneous algebraic equations of degree higher than the first are not considered. Simple methods are given for isolating the real roots of an equation as a preparatory step in determining their values by methods of approximation. Graeffe's method of determining all real and complex roots without preliminary determination of their approximate values is included for the first time in a text of this kind.

THOMAS, JOSEPH MILLER

Theory of equations. New York: McGraw-Hill Book Company, Inc., 1938. 211 p. 21 cm. \$2.00. 190

Contents: Introduction. Permutations. Determinants. Systems of linear equations. Polynomials in a single indeterminate. Graphical methods. Roots of unity. Single equation in a single unknown. Symmetric functions. Constructibility. Resultants and discriminants. Simultaneous systems. Miscellaneous exercises. Bibliography. Index. Answers.

Note: A textbook for a one-term course in the theory of algebraic equations for advanced undergraduate and graduate students. The author treats the topics in a manner which, although elementary, forms a natural approach to the Galois theory and other phases of algebra to be studied later by the specialists.

WEISNER, LOUIS

Introduction to the theory of equations. New York: The Macmillan Company, 1938. 188 p. 22 cm. \$2.50. 191

Contents: Complex numbers. Division and factorization of polynomials in a field. Further properties of polynomials in a field. Theory of equations in the field of rational numbers. Theory of equations in the field of real numbers. Elimination resultants, symmetric functions. Algebraic extensions of a field. Algebraically closed fields. Constructions by ruler and compasses. Miscellaneous exercises. Index.

Note: A text for use in first courses in higher algebra for students who have completed the introductory courses in the calculus. The concept of field dominates the entire work and serves as a unifying principle in the presentation of the theory of equations.

Theory of Numbers

DICKSON, LEONARD EUGENE

Modern elementary theory of numbers. Chicago: The University of Chicago Press, 1939. 309 p. illus. 20 cm. \$3.00. 192

Contents: Foundations of the theory of numbers. Theory of congruences. Quadratic residues and reciprocity law. Binary quadratic forms. Positive ternary quadratic forms. Universal theorems involving cubes. Sums of nine values of a cubic function. Indefinite ternary quadratic forms and universal and zero forms. Homogeneous, quadratic, diophantine equations. Generalizations of Cauchy's lemma; sums of values of a quadratic or quartic function. Conditions for solution of $F = 0$, where F is an indefinite quadratic form in four or more variables. Waring's problem. Positive quadratic forms in n variables. Appendix. Indefinitude of primes in an arithmetical progression. Index.

Note: An approach to the first principles of number theory, giving an elementary account of the essentials of the classic theory and of interesting topics of modern number theory. Provides a brief course for beginners and a supplementary course. Various new results are demonstrated.

DICKSON, LEONARD EUGENE

Researches on Waring's problem. Washington, D.C.: Carnegie Institution of Washington, 1935. 257 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 464) Paper, \$1.50; cloth, \$2.50. 193

Contents (abridged): Preface. Universal Waring theorem for tenth powers. Waring problem for fifteenth powers. Universal Waring theorem for seventeenth powers. Universal Waring theorem for seventh powers. Minimum decompositions into fifth powers.

Note: Discussion and application to various powers of Waring's theorem, propounded in 1770, that every positive integer is a sum of four squares, or nine cubes, or nineteen fourth powers.

DICKSON, LEONARD EUGENE

Studies in the theory of numbers. Chicago: The University of Chicago Press, 1930. 230 p. illus. 25 cm. (The University of Chicago science series) \$4.00. 194

Contents (abridged): Part I, Arithmetic of ternary quadratic forms. Part II, Minima of indefinite quadratic forms. Part III, Miscellaneous investigations of quadratic forms.

Note: The first six chapters deal with general aspects of quadratic forms, chiefly in three variables, with applications to quadratic Diophantine equations in n variables. The final three chapters are independent of each other and of earlier chapters. They present recent researches of especial interest concerning the geometrical reduction of positive forms, the determination of all universal zero forms, and the representation as sums of squares.

HANCOCK, HARRIS

Development of the Minkowski geometry of numbers. New York: The Macmillan Company, 1939. 839 p. illus. 22 cm. \$12.00. 195

Contents (abridged): Surfaces that are nowhere concave. The volume of bodies. Bodies which with respect to their volumes have more than one point with integral coordinates. Applications. Algebraic numbers. Arithmetical theory of a pair of lines. Shorter papers by Minkowski. A criterion for algebraic numbers. The theory of continued fractions. Periodic approximation of algebraic numbers. A further analytic-arithmetic inequality. The arithmetic of the ellipsoid. Computation of a volume through successive integrations. The extreme standard bodies. Densest placement of congruent homologous bodies. Miscellany. New theory of quadratic forms, region of discontinuity for arithmetical equivalence. Index.

Note: A text for advanced students of pure mathematics, presenting the entire theory of the geometry of numbers as originally presented by the German mathematician, Hermann Minkowski (1864-1909). The author has attempted to simplify

the presentation by first deriving the results in a two and three dimensional geometry with illustrative figures and then discussing the general theory analytically with the use of such expressions as are indicative of geometric concepts. The concept of the convex body, fundamental in Minkowski's researches, is offered as a fruitful source of investigation in the theory of numbers. This work is a sequel to the author's *Foundations of the theory of algebraic numbers*, New York, 1932 (see below).

HANCOCK, HARRIS

Foundations of the theory of algebraic numbers. New York: The Macmillan Company, 1931. 2 v. illus. 20 cm. \$16.00. 196

Contents (abridged): Volume I, Introduction to the general theory: The general notion of realms of rationality. Algebraic integers. The moduli of Dedekind. Divisibility. Generalized notions of division. Finite moduli. Algebraic moduli. The modular systems of Kronecker. The quadratic law of reciprocity. Application of the theory of ideals of quadratic realms to a discussion of Fermat's theorem. Geometric presentation of ideals. The cubic realms. Index. Volume II, The general theory: Theory of ideals. The Kronecker theory of forms. The divisors of the discriminant. Algebraic units. Extracts from Minkowski's *Geometry of numbers*. The number of ideal. Composite forms. Relative realms. Sub-realms. Super-realms. The Galois theory. Relations of a realm to its divisors. Development of algebraic numbers in series. Index.

Note: The purpose of this treatise for advanced students of mathematics is to offer an approach to a higher and more generalized arithmetic through a systematic study of the algebraic numbers. An attempt is made to show how the field of rational numbers is broadened by the introduction of the algebraic numbers and how thereby the realm of rationality is extended. The work follows the method of the Dedekind theory and compares that treatment with the fundamental forms and equations of Kronecker, the discriminant and order-modul being taken as common ground.

USPENSKY, JAMES VICTOR, AND M. A. HEASLET
Elementary number theory. New York: McGraw-Hill Book Company, Inc., 1939. 484 p. illus. 21 cm. \$4.00. 197

Contents: Elementary properties of integers. Divisibility and related topics. Euclid's algorithm. Diophantine equations of the first degree. On prime numbers. A general combinational theorem and its applications. On the congruence of numbers. Congruences with one unknown. Lagrange's theorem and its applications. Residues of powers. Arithmetical properties of Bernoulli numbers. Quadratic residues. Some problems connected with quadratic forms. Some Diophantine problems. Liouville's methods. Index.

Note: An elementary textbook on number theory for the college student majoring in mathematics or for the interested undergraduate, covering the field of arithmetical investigation and the properties of numbers. The deep relations existing between polygonal numbers and integers in general is shown by means of several of Fermat's theorems. There is an extensive treatment on the congruence of numbers and quadratic residues, and many applications such as magic squares, card shuffling, calendar calculations, and the like. No knowledge of mathematics higher than college algebra is required.

WEYL, HERMAN

Algebraic theory of numbers. Princeton, N.J.: Princeton University Press, 1940. 223 p. 22 cm. (Annals of mathematics studies. No. 1) Paper, \$2.35. 198

Contents: Algebraic fields. Theory of divisibility (Kronecker, Dedekind). Local primadic analysis (Kummer, Hensel). Algebraic number fields. Amendments.

Note: This memoir is based on the notes of a course on theory of numbers given at Princeton University by the author. The work presents an outline of the fundamental arithmetic concepts and facts concerning algebraic fields. The author has axiomatized Kronecker's approach to the problem of divisibility and has introduced the Kummer-Hensel p -adic theory as a method for penetrating more deeply into the subject. Hilbert's theory of Galois fields, Minkowski's geometric principle, finite Abelian groups, zeta-function and related Dirichlet series, and the general theory of class fields are among the topics discussed. There is a selected bibliography of 17 books.

WINTNER, AUREL

Eratosthenian averages. Baltimore, Md.: The Waverly Press, Inc., 1943. 81 p. 25 cm. \$2.00. 198a

Contents: Part I, Eratosthenian summations: Mean values. The Eratosthenian matrix. The pair of Eratosthenian summation methods. Euler products. Tauberian theorems for the Eratosthenian summation methods. Part II, Arithmetical almost periodicities: The Eratosthenian matrix and almost periodic functions. The transposed matrix and Fourier series. The sieve of Eratosthenes and harmonic analysis. Multiplicative functions. Part III, The statistics of the prime number theorem: The distribution of primes and Fourier constants. Poisson's law and the distribution of primes. The statistics of the sum of two squares. The ergodic law of multiplicative sets. Appendix. Bibliography. Index.

Note: This monograph deals with two aspects of the distribution of primes which are roughly indicated by the headings Statistics and Almost-periodicity, the first being related to the analytic theory of numbers and the second to the harmonic analysis of deviations from the average. Intended for mathematicians, the work makes considerable demands upon the reader's intelligence and mathematical knowledge. The bibliography lists 95 articles which have appeared mainly in European journals between 1900 and 1942.

WINTNER, AUREL

The theory of measure in arithmetical semi-groups. Baltimore, Md.: The Waverly Press, Inc., 1944. 56 p. 25 cm. \$2.00. 198b

Contents: The arithmetical derivatives. The zeta-functions. The generators. The divisor problems. Content and measure. Bibliography.

Note: The principal object of this monograph is the isolation of those properties of the asymptotic distribution of the primes in the sequence of all positive integers which remain valid if the latter sequence is replaced either by an arbitrary arithmetical semi-group or by any measurable set of positive integers. The problems considered have been suggested by the sections dealing with the statistics of the prime number theorem in the author's *Eratosthenian averages*, Baltimore, 1943 (see Index). The bibliography contains 45 references to the world literature of the subject.

WRIGHT, HARRY NOBLE

First course in theory of numbers. New York: John Wiley & Sons, Inc., 1939. 108 p. illus. 22 cm. \$2.00. 199

Contents: Divisibility. Simple-continued fractions. Congruences. Quadratic residues. Diophantine equations. Table of primes. Index.

Note: A textbook for a one semester course, prepared in connection with the course offered at City College, New York. The author has endeavored to make it relatively easy reading for the student, without loss of completeness. Exercises are provided, and the arrangement is designed to meet the needs of classroom use. Power residues and indices are used in the chapter on congruences to make possible relatively simple and interesting solutions of certain problems, and to form a natural introduction to the chapter on quadratic residues.

Calculus of Operations

DAVIS, HAROLD THAYER

The theory of linear operators from the standpoint of differential equations of infinite order. Bloomington, Ind.: The Principia Press, 1936. 628 p. illus. 27 cm. (Indiana University. Waterman Institute. Contribution no. 72) \$8.00. 200

Contents: Linear operators. Particular operators. The theory of linear systems of equations. Operational multiplication and inversion. Grades defined by special operators. Differential equations of infinite order with constant coefficients. Linear systems of differential equations of infinite order with constant coefficients—the Heaviside calculus. The Laplace differential equation of infinite order. The generalized Euler differential equation of infinite order. Differential operators of infinite order of

Fuchian type—infinite systems. Integral equations of infinite order. The theory of spectra. Bibliography. Index.

Note: This comprehensive mathematical treatise presents an outline of the theory of linear operators and the applications of this theory to the study of general types of linear functional equations. The development of the subject is traced from its origin in the symbols of integral and differential calculus down to the present time when the invention and exploration of new operational symbolism has become one of the important methods of extending the domain of analysis. Throughout the book the author has attempted to indicate the many problems, in essentially all domains of science, which lead to operators of the type studied in this work. A number of typical examples of these applications are given. The development of the study of functional equations from Volterra and Fredholm through Hill, Poincaré and von Koch is indicated historically, and the extension of the domain of quadratic and bilinear forms, culminating in the theory of spectra, is outlined in detail.

SEELEY, WALTER JAMES

An introduction to the operational calculus. Scranton, Pa.: International Textbook Company, 1941. 167 p. illus. 21 cm. (International texts in electrical engineering; E. E. Dreese, consulting editor) \$2.00. 201

Contents: Differential equations. First order linear differential equations. Higher order linear differential equations. Operational method of solving differential equations. Solution of equations by the partial fraction method. Review of preceding chapters. Circuit analysis. Alternating electromotive forces. The Heaviside expansion theorem. Heaviside's operational methods. Circuit analysis by operational formula. Non-unit function. Appendix. Table of formulas.

Note: This volume limits itself to the use of operational calculus in the solution of differential and partial differential equations with constant coefficients, such as are found in problems dealing with electrical, mechanical, and acoustical systems. It is intended for engineering undergraduates with a limited mathematical background. Problems are given at the end of each chapter.

STEPHENS, EUGENE

The elementary theory of operational mathematics. New York: McGraw-Hill Book Company, Inc., 1937. 313 p. illus. 21 cm. \$3.50. 202

Contents (abridged): Introduction and definitions. The operator $D = d/dx$. Applications to ordinary linear differential equations with constant coefficients. Algebraic theorems. Matrices. System of ordinary linear differential equations with constant coefficients. Other operators. Application to partial linear differential equations with constant coefficients. The noncommutative operator. Solutions in series. The differential equation in mathematical physics. Initial or terminal conditions. Formulas. Operational. Historical. Bibliography. Index.

Note: The primary purpose of this book is to give the student a working knowledge of a powerful tool for use in practical or research work in physics and engineering. The text is a manual of operational procedure which involves first, the symbolization of the operators of the calculus; second, the algebraization of the symbols, their simplification by means of the laws of algebra; and third, the reinterpretation of the resulting forms as operators, which are found to be easier to use than the original ones. One of the features of the book is the large number and variety of problems.

Vector Analysis

CRAIG, HOMER VINCENT

Vector and tensor analysis. New York: McGraw-Hill Book Company, Inc., 1943. 434 p. illus. 23 cm. \$3.50. 203

Contents (abridged): Preliminary remarks. Infinite sequences and functions. The calculus of functions of two variables. Parameterized arcs and allied matters. Determinants, the e -systems, and certain transformation equations. The algebra of vectors. A simple N -dimensional space. The differential calculus of vectors. Integral transformations. The tensor concept. Extensors and the differential calculus of tensors. Classical dynamics. Special relativity. General relativity. Index.

Note: This textbook, based on a series of lectures, is intended to provide physics and engineering students with a working knowledge of advanced calculus. A background of general calculus is necessary. Four supplemental bibliographies are included.

PHILLIPS, HENRY BAYARD

Vector analysis. New York: John Wiley & Sons, Inc., 1933. 236 p. illus. 22 cm. \$2.50. 204

Contents: Elementary operations. Partial differentiation. Integration. General coordinates. Irrotational and selenoidal vectors. Electrostatic fields. Harmonic functions. Scalar and vector potentials. Linear vector functions. Index.

Note: In this book vector analysis is presented in the form that is required for work in theoretical electricity and hydrodynamics. For these subjects the analysis of vector fields and the study of the quantities which characterize each type of field are of primary importance, as the book brings out. The discussion of these matters separately rather than their introduction in connection with one of the typical fields enables the book to show which results follow from mathematics and which are dependent on physical hypothesis.

TAYLOR, JAMES HENRY

Vector analysis, with an introduction to tensor analysis. New York: Prentice-Hall, Inc., 1939. 180 p. illus. 23 cm. (Prentice-Hall mathematics series; A. A. Bennett, editor) \$3.80. 205

Contents (abridged): Algebra of vectors: Affine coordinate systems and translations. Scalars and vectors. Addition and scalar multiplication of vectors. Linear dependence. Linear transformations. Plane areas as vectors. Applications of the algebra of vectors. Differential calculus of vectors: Vector functions of a scalar. Geometry of space curves. Motion of a particle. The geometry of a surface. Scalar and vector fields. Integral calculus of vectors: Definite integrals. Differential operations. Divergence and related theorems. Introduction to tensor analysis: Tensors and invariants. Covariant differentiation. References. Index.

Note: A textbook for advanced students of engineering or pure mathematics presenting an introduction to vector analysis which is intended to lead naturally to its extension, tensor analysis. Included is a discussion of the theory of linear dependence and the notion of invariants with respect to a group of transformations.

Probabilities

GREENHOOD, ELISHA RUSSELL

A detailed proof of the chi-square test of goodness of fit; the Harvard Phi Beta Kappa prize essay for 1939. Cambridge: Harvard University Press, 1940. 61 p. illus. 17 cm. \$1.25. 206

Contents: Introduction. Explanation of the problem. The proof. Characteristics of the chi-square curve. Limitations and criticisms of the chi-square test of goodness of fit. References.

Note: A paper to present proof to bridge the gap between what is known as the chi-square test of goodness of fit and the actual mathematical curve, the chi-square curve. Textbooks on statistical methods jump from a description of the chi-square test to tables of the chi-square distribution with no hint as to how the tables were derived. This paper attempts to derive the formula of the chi-square curve from considerations of the chi-square test of goodness of fit, and then proceeds to examine in the light of the proof the cautions and conditions that always accompany a description of the test.

NAGEL, ERNEST

Principles of the theory of probability. Chicago, Ill.: The University of Chicago Press, 1939. 80 p. 23 cm. (International encyclopedia of unified science. Vol. 1, no. 6) \$1.00. 207

Contents (abridged): The materials for the study of probability. The calculus of probability in its interpretations. Unsettled problems of general methodology. Selected bibliography.

Note: The problems of probability are classified in three groups: syntactical, semantical, and pragmatic.

USPENSKY, JAMES VICTOR

Introduction to mathematical probability.
New York: McGraw-Hill Book Company, Inc.,
1937. 411 p. illus. 23 cm. \$5.00. 208

Contents: Computation of probability by direct enumeration of cases. Theorems of total and compound probability. Repeated trials. Probabilities of hypotheses and Bayes' theorem. Use of difference equations in solving problems of probability. Bernoulli's theorem. Approximate evaluation of probabilities in Bernoullian case. Further considerations on games of chance. Mathematical expectation. The law of large numbers. Application of the law of large numbers. Probabilities in continuum. The general concept of distribution. Fundamental limit theorem. Normal distribution in two dimensions. Limit theorems for sums of independent vectors. Origin of normal correlation. Distribution of certain functions of normally distributed variables. Appendixes: Euler's summation formula. Stirling's formula. Some definite integrals. Method of moments and its applications. On a Gaussian problem. Table of probability integral. Index.

Note: Written for persons who desire to acquire a fundamental knowledge of the methods and results of the mathematical theory of probability. Presents a simple yet rigorous exposition, of which about one half deals with elementary matters easily accessible to undergraduate students while the other half is devoted to modern and more advanced research. Many problems of varying degrees of difficulty are included, with solutions for many of them indicated or given in full.

Approximations

BAKST, AARON

Approximate computation. New York: Bureau of Publications, Teachers College, Columbia University, 1937. 287 p. illus. 23 cm. (National Council of Teachers of Mathematics. Twelfth yearbook) \$1.75. 209

Contents (abridged): Part I, The teaching of approximate computation: Approximate computation in secondary school mathematics. Approximate computation: approximate numbers. Numerical operations. Logarithms of natural numbers. Natural trigonometric functions. Approximate computation of the first type. Approximate computation of the second type. Part II, Theory of numerical processes: Approximations. The methods of approximate computation. Logarithms. Trigonometric functions. History of approximate computation. Appendix: Rounding off digits. Note on antilogarithms. Bibliography.

Note: This is a technical treatment of the subject for specialists, including teachers of mathematics. It is concerned primarily with the determination of significant digits, or, in other words, the evaluation of the maximum error.

SCARBOROUGH, JAMES BLAINE

Numerical mathematical analysis. Baltimore: The Johns Hopkins Press, 1930. 416 p. illus. 25 cm. \$5.50. 211

Contents: The accuracy of approximate calculations. Interpolation. The accuracy of interpolation formulas. Interpolation with two independent variables. Trigonometric interpolation. Numerical differentiation and integration. The accuracy of quadrature formulas. The solution of numerical algebraic and transcendental equations. Graeffe's root-squaring method for solving algebraic equations. The numerical solution of differential equations. Convergence and accuracy of the iteration process. Other methods for the numerical solution of differential equations. The normal law of error and the principle of least squares. The precision of measurements. Empirical formulas. Harmonic analysis of empirical functions. Tables. Index.

Note: This book is designed as a textbook and reference work for students and workers in mathematics, statistics, engineering, and the exact natural sciences, and for all others whose work leads to numerical results. A knowledge of calculus to the extent of the usual first course is necessary for its proper understanding, but the majority of the methods and formulas can be used intelligently without calculus. The most important principles, methods, and processes used for obtaining numerical results are outlined and methods for estimating the accuracy of such results are given in nearly all cases. Sufficient theory is given to show the soundness of the methods and processes de-

scribed, and the reader is shown by a variety of examples how to apply the processes and use the formulas connected with them. The limitations of the methods are pointed out and illustrated by appropriate examples.

SEWELL, WALTER EDWIN

Degree of approximation by polynomials in the complex domain. Princeton, N.J.: Princeton University Press, 1942. 236 p. 22 cm. (Annals of mathematics studies. No. 9) Paper, \$3.00. 211a

Contents: Preliminaries. Part I, Problem alpha: Polynomial inequalities. Tchebycheff approximation. Approximation measured by a line integral. Part II, Problem beta: Preliminaries. Tchebycheff approximation measured by a line integral. Special configurations. Bibliography.

Note: The scheme of this monograph is to trace the progress of the study of approximation by polynomials and to motivate and explain the material evolved. The work aims to present theorems and their proofs and also to stimulate interest in the subject by pointing out the limitations as well as the extent of the existing methods and calling attention to numerous specific problems as yet unsolved. Many new results are published here for the first time. The bibliography contains about 100 references to the world literature on the subject.

WALSH, JOSEPH LEONARD

Interpolation and approximation by rational functions in the complex domain. New York: American Mathematical Society, 1935. 382 p. illus. 26 cm. (American Mathematical Society. Colloquium publications. Vol. xx) \$6.00. 212

Contents: Possibility of approximation; analytic functions. Interpolation and lemniscates. Degree of convergence of polynomials. Overconvergence. Best approximation by polynomials. Orthogonality and least squares. Interpolation by polynomials. Interpolation by rational functions. Approximation by rational functions. Interpolation and functions analytic in the unit circle. Approximation with auxiliary conditions and to non-analytic functions. Existence and uniqueness of rational functions of best approximation. Bibliography. Index.

Note: This book deals primarily with infinite sequences or series of polynomials and rational functions converging toward a given analytic function and fulfilling certain additional conditions. The conditions are characterized either by the coincidence of the polynomial or rational function with the given analytic function in proper points (problem of interpolation) or lying close to it as possible (problem of approximation). The connection between the interpolative and approximate properties is investigated.

Series

DAVIS, H. T., EDITOR

Northwestern University contributions to continued fractions. A collection of mathematical papers related to continued fractions, by members of the Mathematics Department of Northwestern University, and collaborating mathematicians. Evanston, Ill.: Northwestern University, 1942. 228 p. 23 cm. \$2.25. 213

Contents: On the Padé approximants associated with the continued fractions and series of Stieltjes, by H. S. Wall. On the relationship among the diagonal files of a Padé table, by H. S. Wall. On certain continued fractions, by H. S. Wall. A convergence theorem for continued fractions, by W. T. Scott and H. S. Wall. Continued fraction expansions for arbitrary power series, by W. T. Scott and H. S. Wall. Continued fraction expansions and totally monotone sequences, by H. S. Wall. Hausdorff methods of summation and continued fractions, by H. L. Barabedian and H. S. Wall. A class of functions bounded in the unit circle, by H. S. Wall. A continued fraction related to some partition formulas of Euler, by H. S. Wall. Formulations of the Hausdorff inclusion problem, by H. L. Garabedian and others. Some recent developments in the theory of con-

tinued fractions, by H. S. Wall. Value regions for continued fractions, by W. T. Scott and H. S. Wall. The transformation of series and sequences, by W. T. Scott and H. S. Wall. The continued fraction as a sequence of linear transformation, by J. Findlay Paydon and H. S. Wall. Hausdorff means included between (C, O) and $(C, 1)$, by H. J. Greenberg and H. S. Wall.

Note: This volume contains a collection of reprints of papers on continued fractions and related subjects which previously appeared in such publications as the *Transactions* and *Bulletin* of the American Mathematical Society, *American mathematical monthly*, *Duke mathematical journal*, and *Annals of mathematics*.

MOORE, CHARLES NAPOLEON

Summable series and convergence factors. New York: American Mathematical Society, 1938. 105 p. 26 cm. (American Mathematical Society. Colloquium publications. Vol. xxii) \$2.00. 214

Contents: Convergence factors in convergent series. Summation of series of Nörlund means. Convergence factors in summable series. Convergence factors in summable double series. Convergence factors in summable multiple series. Convergence factors in restrictedly convergent multiple series. Bibliography. Index.

Note: The concept of convergence factors plays a fundamental role in the theory of the summability of divergent series; all methods of summation of such series can be classified as mean-value methods or convergence-factor methods. In either case the object of the summability method is to determine a value or "generalized sum" for the series. Although convergence factors were at first applied only to summable series, it was soon seen that they could yield valuable information when applied to convergent series. The author classifies convergence factors into two types. In the first type he places the factors which have only the property that they preserve convergence for a convergent series or produce convergence for a summable series; in the second, he places the factors which not only maintain or produce convergence but have the additional property that they may be used to obtain the sum or generalized sum of the series.

SHOHAT, JAMES ALEXANDER, AND J. D. TAMARKIN

The problem of moments. New York: American Mathematical Society, 1943. 140 p. 26 cm. (Mathematical surveys. No. 1) \$2.25. 215

Contents: Brief historical review. Distribution functions. Theorems of Helly. Extension theorems for non-negative functionals. Stieltjes inversion formula. The Hamburger moment problem. The Stieltjes moment problem. The trigonometric moment problem. The Hausdorff one-dimensional moment problem. The Hausdorff two-dimensional moment problem. Theory of the Hamburger moment problem. Various modifications of the moment problem. Approximate quadratures. Bibliography. Index.

Note: The subject of the problem of moments has extensive literature, but has not hitherto been treated in book form. The main attention is given to the classical moment problem, but a special chapter is devoted to the theory of approximate ("mechanical") quadratures, which is intimately related to the theory of moments.

Calculus

BACON, HAROLD MAILE

Differential and integral calculus. New York: McGraw-Hill Book Company, Inc., 1942. 771 p. illus. 23 cm. \$3.75. 216

Contents: Functions and limits. The derivative. General rules for differentiation of algebraic functions. Simple applications of the derivative. Differentiation of trigonometric and inverse trigonometric functions. Differentiation of logarithmic and exponential functions. The differential. Further applications of derivatives and differentials. Polar coordinates. Theorem of the mean, indeterminate forms, and Taylor's theorem. Integration, standard forms. Methods of integration. The definite integral. Geometric applications of the definite integral. Physical applications of the definite integral. Partial differentiation. Multiple integrals. Infinite series. Introduction to differential equations. Brief table of integrals. Answers to odd-numbered problems. Index.

Note: The material covered consists of the standard topics included in a first course in calculus, with considerable latitude given the instructor in the discussion and proofs. A completely rigorous treatment is not attempted, certain proofs are necessarily omitted, and the student is encouraged to grasp the ideas with a minimum of assistance from the instructor.

COHEN, ABRAHAM

Elements of calculus. Boston: D. C. Heath and Company, 1940. 583 p. illus. 20 cm. \$3.50. 217

Contents: Fundamental principles. Differentiation of algebraic functions. Applications. Curve sketching. Physical applications. Differentiation of transcendental functions. Geometric applications. Special curves. Integration and methods. Definite integral. Applications of the definite integral. Partial derivatives. Envelopes. Multiple integrals. Infinite series. Miscellaneous theorems and applications. Appendix. Index.

Note: An introductory text intended for both the student of pure mathematics and the student of science or engineering. Proofs requiring concepts and processes beyond the elementary student's understanding are omitted, while numerous and varied applications of calculus are treated in some detail. Exercises are graded and appear in pairs so that the proficient student need consider only alternate exercises. The appendix contains an added section on limits, a treatment of hyperbolic functions, a summary of solid analytic geometry, and formulas and tables for reference.

DALAKER, HANS H., AND HENRY E. HARTIG

The calculus. Third edition. New York: McGraw-Hill Book Company, Inc., 1935. 276 p. illus. 23 cm. \$2.25. 218

Contents (abridged): Functions. Notation. Limits. Continuity. Differentiation. Successive and implicit differentiation. Examples for the use of the derivative. Inverse functions. Function of a function. Differentiation of exponential, logarithmic, and trigonometric functions. List of formulas for differentiation. Maxima and minima. Infinitesimals, differentials, parametric equations. Applications to geometry. Rectangular coordinates. Polar coordinates. Rates. Velocities. Accelerations. Law of the mean. Indeterminate forms. Integration. Integration by parts. Integration the inverse of differentiation. Integration of rational fractions. Trigonometric integrals. The definite integral. The fundamental theorem of the integral calculus. Centroids. Radius of gyration. Moment of inertia. Liquid pressure. Work. Partial differentiation. Iterated integrals. Double and triple integrals. Infinite series. Expansion of functions. Hyperbolic functions. Change of variables. Trapezoidal rule. A mean value theorem. Simpson's rule. Differential equations. Formulas, curves, and integrals for reference. Index.

Note: This textbook for second-year college students develops the principles and methods of calculus hand-in-hand with their application to stated problems. Particular attention is given to the discussion of basic principles and meaning, and stress is also laid on the variety of methods of attack. The method largely used is that of proposing and solving carefully chosen illustrative problems. The third edition contains new exercises and new text-figures, but is otherwise substantially unchanged.

DRESDEN, ARNOLD

Introduction to the calculus. New York: Henry Holt and Company, 1940. 428 p. illus. 24 cm. \$3.40. 219

Contents: Set of points. Limits. Continuous functions. Derivatives of functions. Technique of differentiation. Maxima and minima of functions. Infinitesimals, differentials and infinities. Trigonometric and inverse trigonometric functions. Exponential and logarithmic functions. Geometrical applications of the differential calculus. Polar coordinates. Applications to mechanics. The definite integral. Technique of integration and some applications. Further technique of integration and further applications. Applications of integration to mechanics. Taylor's theorem. Infinite series and infinite sequences. Improper integrals. Double and triple integrals. Ordinary differential equations of the first order. Linear differential equations. Index.

Note: A college text presenting the subject from the point of view of its applicability to physics, chemistry, and engineering. Much emphasis is placed on the need for a thorough understanding of the fundamental principles plus a knowledge of the exact conditions under which the formal processes are applicable.

An unusual feature is the introduction of the theory of point sets and the theory of continuous functions in the first two chapters, which though difficult for the beginner are intended to make the later development of calculus more logical and understandable.

ETTLINGER, HYMAN JOSEPH, AND M. B. PORTER

The calculus. New York: The Dryden Press, 1942. 330 p. illus. 21 cm. (The Dryden Press mathematics publications. General editor, E. R. Smith) \$3.25. 220

Contents: Part I, Differential calculus: Increment. Limit. Derivative. Derivatives of sums, products, and powers. Further derivatives of algebraic functions. Derivatives of the trigonometric and exponential functions. Application of derivatives. Length, curvature, partial derivatives. Part II, Integral calculus: Integration. Area. Definite integral. Summation. Application of summation. Double and triple integrals. Taylor's formulas. Method of approximation. Infinite series. Ordinary differential equations. Part III, Appendix: Functions and their graphs. Supplementary problems. Formulas and numerical tables. Answers. Index.

Note: This textbook is intended for a variety of college students, including engineering students, students majoring in the natural sciences, students specializing in mathematics, and general college students. The fundamental principles are illustrated by geometrical and graphical interpretations and by examples drawn from everyday experiences. The two fundamental methods of differentiation and integration are illustrated by problems in the various fields of the natural sciences familiar to the student, and the theory of summation is given detailed treatment, with applications to physics and statistics. There are about 2500 problems in the volume.

FITE, WILLIAM BENJAMIN

Advanced calculus. New York: The Macmillan Company, 1938. 399 p. illus. 22 cm. \$5.00. 221

Contents: System of real numbers. Functions of one variable. Functions of more than one variable. Taylor's expansion of the remainder. The definite integral. Indefinite integral. Improper and infinite integrals, double and triple integrals. Infinite series. Power series. Trigonometric series and series of orthogonal functions. Implicit functions—functional determinants. Applications to geometry. Calculus of variations. Functions of a complex variable. Index.

Note: This text is designed for use in an introductory course in mathematical analysis for those who intend to specialize in mathematics. Included in the scope of the text is a discussion of uniform and quasi-uniform convergence, the limit of error in Simpson's rule, Stirling's series for gamma function, double power series, and a section on the application of the calculus of variations to problems in economics. A knowledge of differential and integral calculus is assumed.

FORD, WALTER BURTON

A first course in the differential and integral calculus. Revised edition. New York: Henry Holt and Company, 1937. 369 p. illus. 24 cm. \$3.25. 222

Contents: Fundamental notions and definitions. The derivative of a function. General theorems concerning the derivative. The derivative as a measure of rates. Differentiation of the transcendental functions. Maxima and minima; points of inflection. Further applications of the derivative to geometry. Curvature. Parametric equations. Rates. Partial derivatives. Singular points; asymptotes; curve tracing. Law of the mean; indeterminate forms. Infinite series. Maclaurin and Taylor series. Infinitesimals; differentials. Derivatives in polar coordinates. Integration; general introduction. Preliminary applications of integration. Integrals of special types. The definite integral. The definite integral as the limit of a sum. Successive integration. Differential equations. Appendix: The method of least squares. Integral tables. Formulas of trigonometry. Radian measurement of an angle. Trigonometric tables. Tables of squares, cubes, square roots, and cube roots. Diagrams of important curves. Index.

Note: The revised edition of this college text retains the plan of the first edition which made use of theorems to demonstrate the central facts and formulas of the subject. Special attention is given to the application of the calculus to elementary physics. The material has been enlarged and some of it rewritten.

FRANKLIN, PHILIP

Methods of advanced calculus. New York: McGraw-Hill Book Company, Inc., 1944. 486 p. illus. 21 cm. \$4.50. 223

Contents (abridged): Elementary functions for complex values and Taylor's series. Partial differentiation and implicit functions. Vectors, curves, and surfaces in space. Integration. The definite integral. Multiple integrals. Line integrals. Complex variables. The gamma function and related definite integrals. Elliptic integrals. Vector analysis. Differential equations. Legendre polynomials and Bessel functions. Fourier series and partial differential equations. The calculus of variations and LaGrange's equations. Bibliography. Answers. Index.

Note: A textbook for students, engineers, and scientists. The inclusion of answers makes possible its use for self-study and review.

FRANKLIN, PHILIP

A treatise on advanced calculus, including those parts of the theory of functions of real and complex variables which form the logical basis of the infinitesimal calculus and its applications to geometry and physics. New York: John Wiley & Sons, Inc., 1940. 595 p. illus. 23 cm. \$6.00. 224

Contents: Real numbers. Limits of functions. Exponential, logarithmic, and trigonometric functions. Differentiation. Complex numbers. Integration. Integrable functions. Extensions and applications of integration. Infinite series and infinite products. Partial differentiation. Multiple integration. Sequences of functions. Functions of complex variables. Fourier series and integrals. Differential equations. The gamma function and other definite integrals. Bibliography. Index.

Note: A textbook for students majoring in mathematics and for graduate students who desire a more logical treatment of the subject than is feasible in a first course. The Taylor series is studied at length and derived by the use of analytic functions, and an existence theorem for implicit functions is established in connection with partial differentiation. Elliptic integrals, Riemann integration of bounded functions, and the Stieltjes integral are also discussed.

GRIFFIN, FRANK LOXLEY

An introduction to mathematical analysis. Revised edition. Boston: Houghton Mifflin Company, 1936. 546 p. illus. 21 cm. \$3.25. 226

Contents (abridged): Functions and graphs. As to exact relationships. Differentiation. Integration. Trigonometric functions. Logarithms. Exponential and logarithmic functions. Rectangular coordinates. Solution of equations. Trigonometric analysis. Definite integrals. Progressions and series. Combinations, probability, and statistical method. Complex numbers. Exercises for review. Appendix. Abbreviations and symbols. Index.

Note: In this college textbook the author has presented material for a unified introductory course which will give the student some knowledge of the important branches of mathematics including differential and integral calculus. The arrangement of the topics is designed to make their relationships apparent. The revised edition is rearranged and contains new material and new problems.

GRANVILLE, WILLIAM ANTHONY, AND OTHERS

Elements of the differential and integral calculus. Revised edition. By William Anthony Granville, Percy F. Smith and William Raymond Longley. Boston: Ginn and Company, 1941. 556 p. illus. 24 cm. (Mathematical texts for colleges, edited by P. F. Smith) \$3.75. 227

Contents (abridged): Differential calculus—collection of formulas. Variables, functions, and limits. Differentiation. Rules for differentiating algebraic forms. Various applications of the derivative. Successive differentiation and applications. Differentiation of transcendental functions—applications. Applications to parametric equations, polar equations, and roots. Differentials. Curvature—radius and circle of curvature. Theorem of mean value and its applications. Integral calculus—integration—rules for integrating standard elementary forms. Constant of integration.

The definite integral. Integration a process of summation. Formal integration by various devices. Reduction formulas—use of table of integrals. Centroids, fluid pressure, and other applications. Differential and integral calculus—series. Expansion of functions. Ordinary differential equations. Hyperbolic functions. Partial differentiation. Applications of partial derivatives. Multiple integrals. Curves for reference. Table of integrals. Index.

Note: A revised edition of a standard text which first develops the calculus for functions of one variable and follows this by a treatment of the calculus for functions of more than one variable. This revised edition offers improved explanatory material, fresh exercises, completely revised problems, and an additional chapter on hyperbolic functions.

KELLS, LYMAN MORSE

Calculus. New York: Prentice-Hall, Inc., 1943. 509 p. illus. 23 cm. (Prentice-Hall mathematics series; A. A. Bennett, editor) \$5.00. 228

Contents: Fundamental ideas. The derivative. Applications. Derivative of product and quotient. Applications. Derivatives of trigonometric functions. Differentiation of logarithmic and exponential functions. Infinitesimals, differentials, and curvature. The law of the mean. Indeterminate forms. Integration. Integral as limit of a sum. Applications. Approximate integration. Formal integration. Trigonometric integrals and applications. Partial fractions. Centroids. Moment of inertia. Partial differentiation. Multiple integrals. Infinite series. Expansion in series. Ordinary differential equations. Tables. Answers to exercises. Index.

Note: A college-level introduction to differential and integral calculus. Emphasizes applications and reasoning through analytical approach to each topic. Makes extensive use of illustrations to explain each step. The first section presents basic materials and applications: concepts of function, its average rate of change, and the limit of this average rate. Derivatives, differentials, and definite integrals follow. Integration, as reversed differentiation, is used early and repeatedly, but without confusing differential and integral formulas.

LOVE, CLYDE ELTON

Differential and integral calculus. Fourth edition. New York: The Macmillan Company, 1943. 483 p. illus. 24 cm. \$3.25. 229

Contents: Functions. Limits. Continuity. The derivative, slope, rate of change. Differentiation of algebraic functions. Applications of the derivative. Trigonometric and inverse trigonometric functions. Exponential and logarithmic functions. The differential curvature. Motion. The indefinite integral. Trigonometric integrals. Integration by substitutions. Integration by rational fractions. The definite integral. Applications of the definite integral. Centroids. Moments of inertia. Indeterminate forms. Curve tracing. Infinite series. Functions of several variables. Multiple integrals. Differential equations of the first order. Differential equations of the higher order. Rectilinear motion. Plane curvilinear motion. Index.

Note: In the fourth edition the topic of integration has been introduced early in the book for the benefit of those students who require the essentials of calculus as soon as possible for use in other college courses. The instructor may, however, complete the differential calculus before taking up the integral. There are new problems and text-figures also.

McKELVEY, JOSEPH VANCE

Calculus. New York: The Macmillan Company, 1937. 420 p. illus. 20 cm. (A series of mathematical texts, for colleges, edited by E. R. Hedrick) \$3.00. 230

Contents: Differential calculus: Introduction. Functions. Limits and continuity. Increments. Derivatives. Differentiation of algebraic functions. Interpretations of the derivative. Transcendental functions. Differentials. Parametric equations. Rolle's theorem. Mean value theorem. Indeterminate forms. Functions of more than one variable. Curvature. Singular points. Integral calculus: Integration. Integration by parts. Substitutions. Rational fractions. The definite integral. Length of arc. Area of surface of revolution. Improper integrals. Multiple integrals. Center of mass. Moment of inertia. Work. Infinite series. Differential equations. Answers to problems. Table of integrals. Index.

Note: This introductory college text describes and illustrates new ideas first and gives definitions, terminology, and theorems afterwards. Two major items, the derivative and the definite integral, are presented in detail from the increment point of view.

McSHANE, EDWARD JAMES

Integration. Princeton: Princeton University Press, 1944. 392 p. 23 cm. (Princeton mathematical series. 7) \$6.00. 230a

Contents: Some theorems on real-valued functions. The Lebesgue integral. Measurable sets and measurable functions. The integral as a function of sets; convergence theorems. Differentiation. Continuity properties of measurable functions. The Lebesgue-Stieltjes integral. The Perron integral. Differential equations. Differentiation of multiple integrals. Index.

Note: This book was written to introduce beginning graduate students of mathematics to the theories of integration. The method of development of the theory is a modification of that devised by Daniell, the Lebesgue integral appearing as the result of a two-stage extension of the classical integral of a continuous function. The proofs are so arranged that the Lebesgue-Stieltjes integral is obtained with little additional discussion. The Perron integral is also studied. Ordinary differential equations are treated in considerable detail, in order that the theorems obtained shall be suited to the needs of the calculus of variations.

MARCH, HERMAN WILLIAM, AND HENRY C. WOLFF

Calculus. Third edition. New York: McGraw-Hill Book Company, Inc., 1937. 424 p. illus. 19 cm. (Modern mathematical texts, edited by C. S. Slichter) \$2.50. 231

Contents: Derivative. Limits. The power function. Differentiation of algebraic functions. Second derivative. Point of inflection. Maxima and minima. Applications. Infinitesimals. Differentials. Definite integrals. Circular functions. Inverse circular functions. Exponential and logarithmic functions. Polar coordinates. Integration. Applications of the process of integration. Improper integrals. Solid geometry. Successive integration. Center of gravity. Moment of inertia. Curvature. Evolutes. Envelopes, series. Taylor's and Maclaurin's theorems. Indeterminate forms. Total derivative. Exact differential. Differential equations.

Note: This text develops the fundamental processes of the calculus through direct reference to problems in geometry, physics, and mechanics. Features of the book are the early introduction of integration, the unification of differential and integral calculus, and the unusually large number of carefully selected, graded problems.

MIDDLEMISS, ROSS RAYMOND

Differential and integral calculus. New York: McGraw-Hill Book Company, Inc., 1940. 416 p. illus. 23 cm. \$2.50. 232

Contents: Functions and their graphs. The limit of a function. The derivative. Differentiation of algebraic functions. The second derivative. The trigonometric functions. The exponential and logarithmic functions. Derivative of arc. Curvature. Parametric equations. Collection of formulas. Review problems. The limit of a function (continued from Chapter II). The differential. Integration. Applications of the indefinite integral. Trigonometric integrals. Methods of integration. The definite integral. Duhamel's principle. Applications to geometry. Mean value of a function. Approximate integration. First moment. Centroid. Second moment. Radius of gyration. Liquid pressure. Work. Partial derivatives. Multiple integrals. Infinite series. Expansion of functions. Differential equations. Table of integrals. Numerical tables. Index. Answers.

Note: Features of this introductory college text are the interpretation of the graph of $f(x)$ as a picture which shows how the value of the function increases and decreases as x increases, and the preliminary instruction and practice in setting up equations and sketching their graphs. Numerous problems emphasize applications to engineering and physics.

MILES, EGBERT J., AND JAMES S. MIKESH

Calculus. New York: McGraw-Hill Book Company, Inc., 1930. 638 p. 23 cm. \$3.75. 233

Contents: Numbers, constants, variables, functions. Limits. Rate of change. Formulas for differentiation. Some simple applications of derivatives. Derivative functions and functional behavior. Graphic significance. Application of maxima and minima. Geometric applications. Practical applications of the derivative and the derivative function. Integration. The constant of integration. The definite integral and applications. Definite integral

considered as the limit of a sum. Approximations. Functions of two or more variables. The exponential and logarithmic functions. Trigonometric functions. Appendixes. Answers. Index.

Note: A textbook designed to make the concepts of functionality and functional behavior play a more active and dominant part in calculus by considering the chief processes of the subject from the rate-of-change standpoint. Numerous applications in geometry and mechanics are pointed out and the student is given a review of subjects in algebra and trigonometry while the fundamental facts are being outlined. The presentation is from an arithmetic standpoint and the notation modified accordingly. Geometric limits, intercepts and symmetry, and partial fractions are given in the appendixes.

MILLER, FREDERIC HOWELL

Calculus. New York: John Wiley & Sons, Inc., 1939. 419 p. illus. 23 cm. \$3.00. 234

Contents: Variables, functions, and limits. The derivative concept. The processes of differentiation. Differentials and numerical approximations. Maxima and minima. Tangents, normals and curvature. Time-rates and motion. Analytical evaluation of limits. Partial derivatives. Curve tracing. The integral concept. The processes of integration: standard integral forms; integration by parts; trigonometric integrals; integration by substitution; integration of rational functions. Definite integrals. Geometric applications of integration. Physical applications of integration. Multiple integrals. Infinite series: series of constant terms; series of variable terms. Differential equations: differential equations of the first order; differential equations of higher order. Appendixes: Formulas for reference. Greek alphabet. Numerical tables. Tables of integrals. Answers to exercises. Index.

Note: This book has been designed to give an understanding of the basic concepts and methods of calculus, by presenting the subject not only as a powerful tool, but also as an important branch of mathematical analysis. These are features of note: the author presents a new and rigorous treatment of integration; a sharp distinction is made between a double or triple integral and an iterated integral; Duhamel's theorem and its abstruse applications are avoided; geometric and physical interpretations of the derivative are introduced before the general processes of differentiation; an adequate treatment of differential equations is given; in the treatment of analytical evaluation of limits the expression "indeterminate form" and the use of certain symbols have been avoided, in the interest of clarity and simplicity; geometric and physical interpretations, principles, and necessary specific formulas have been expressed as theorems; more than 2300 exercises are given; for use in computations, numerical tables have been incorporated; answers to most of the exercises are given.

NEELLEY, JOHN HAVEN, AND JOSHUA IRVING TRACEY

Differential and integral calculus. Second edition. New York: The Macmillan Company, 1939. 495 p. illus. 22 cm. (A series of mathematical texts, edited by E. R. Hedrick) \$3.25. 235

Contents: Coordinate systems. Graphs. Equations of defined curves. Empirical equations. The derivative. Differentiation of algebraic, logarithmic, and exponential functions. Some applications of the derivative. Differentials. Theorem of mean value. Trigonometric functions—curvature. Solid analytic geometry. Partial differentiation, directional derivatives. Envelopes. Integration. Methods of integration. Definite integrals. Applications and interpretations of integrals. The definite integral as the limit of a sum. Multiple integration. Additional applications of the fundamental theorem. Infinite series with constant terms. Power series and some applications. Hyperbolic functions. Exact differentials and line integrals. Some differential equations of the first order. Differential equations of higher order. Applications of differential equations. Statics, dynamics, electricity. Standard integrals. Index.

Note: Designed for use both in academic colleges and in engineering schools, this text avoids certain rigorous proofs which belong more properly in an advanced course, while emphasis is laid on applications. The second edition contains a larger number of problems for purposes of drill, plus minor textual changes.

NELSON, ALFRED LEWIS, AND OTHERS

Calculus, by Alfred L. Nelson, Karl W. Folley, and William M. Borgman. Boston: D. C. Heath and Company, 1942. 366 p. illus. 24 cm. \$2.75. 236

Contents: Variables, functions, limits. Differentiation of powers of x . Integration of powers. Applications. Differentiation of algebraic functions. Differentiation of trigonometric functions. Differentiation of logarithmic and exponential functions. Parametric representation. Curvature. Differentiation with respect to time. Polar coordinates. Mean value theorems. Indeterminate forms. Curve tracing. Integration. Definite integrals. Applications of the definite integral. Infinite series. Hyperbolic functions. Partial differentiation. Multiple integrals. Differential equations. Tables. Index.

Note: Integration as well as differentiation is introduced early in the text for those students who need the subject primarily as a tool in engineering and other scientific courses running concurrently in the college curriculum. Following a brief preliminary study, including applications, a more complete and rigorous treatment is undertaken.

ROBBINS, CHARLES KENDALL, AND NEIL LITTLE

Calculus. New York: The Macmillan Company, 1940. 398 p. illus. 23 cm. \$3.25. 237

Contents (abridged): The derivative. Functions. Differentiation. Maxima and minima. Logarithms and exponential functions. Related time rates. Limits. Continuity. Function of a function. Law of the mean. Indeterminate forms. Expansion of functions. Hyperbolic functions. Higher derivatives. Parametric equations. Curvature. Tangential and normal acceleration. Differentials. Infinitesimals. Partial differentiation. The definite integral. Lengths. Areas. Integral tables. The limit of a sum. Areas. Volumes. Applications to mechanics. Multiple integration. Differential equations. Approximation methods. Infinite series. Review exercises. Tables. Formulas for reference. Tables of integrals. Index.

Note: Topics usually treated in an introductory chapter have been discussed as needed throughout the text, and applications are introduced as soon as possible. The use of integration formulas has been avoided until the various processes of integration have been given.

SHERWOOD, GEORGE EULAS FOSTER, AND ANGUS E. TAYLOR

Calculus. New York: Prentice-Hall, Inc., 1942. 503 p. illus. 23 cm. (Prentice-Hall mathematics series; A. A. Bennett, editor) \$5.00. 238

Contents: Variables, functions and the notion of a limit. The derivative. General formulas of differentiation. Algebraic functions. Applications. Differentiation of transcendental functions, with applications. Differentials, the law of the mean. Further applications. More about limits. The definite integral. Integration. Geometrical applications of definite integrals. Physical applications of definite integrals. Analytic geometry of three dimensions. Partial differentiation. Some applications of partial differentiation. The hyperbolic functions. Further methods of integration. Double integrals. Triple integrals. Infinite series. Taylor's series and Taylor's formula with the remainder. Appendix. Index.

Note: This college textbook is designed for the prospective engineer, mathematician, and scientist. There are numerous geometrical and physical applications, exercises for each topic, and numerous problems and answers. Each chapter ends in a summary. The emphasis is on the fundamentals of calculus, without a sharp separation between differential and integral calculus.

SLOBIN, HERMON LESTER, AND MARVIN R. SOLT

A first course in calculus. New York: Farrar & Rinehart, Inc., 1935. 426 p. illus. 21 cm. \$3.00. 239

Contents: Constants, variables, functions, limits. The derivative of a function. General theorems on differentiation. Differentiation of transcendental functions. Applications of the derivative. Derivatives of higher order. Applications of derivatives to physical problems. Undetermined forms. Partial differentiation. Integration. Integration formulas. Methods of integration. The integral as the limit of a sum. Multiple integration. Application to physical problems. Infinite series. Functions and their power series. Ordinary differential equations. Formulas. Answers. Index.

Note: The elements of theory and the applications of calculus presented in as simple a form as possible for introductory

college courses. Applications of the theory are introduced as soon as possible at every stage of the subject and many illustrations are worked out in detail. For both liberal arts and technical institutions.

SOKOLNIKOFF, IVAN STEPHEN

Advanced calculus. New York: McGraw-Hill Book Company, Inc., 1939. 446 p. illus. 23 cm. \$4.00. 240

Contents (abridged): Limits and continuity. Derivatives and differentials. Functions of several variables. Definite integrals. Multiple integrals. Line integrals. Infinite series. Power series. Application of power series. Improper integrals. Fourier series. Implicit functions.

Note: This book, intended for the student with one year of preparation in calculus, seeks to develop a critical attitude toward analytical processes. The more rigorous arithmetic proofs are supplemented by further bibliographical references. There are numerous illustrative exercises and problems scattered throughout the text.

THOMPSON, JAMES EDGAR

The calculus for the practical man. New York: D. Van Nostrand Company, Inc., 1931. 323 p. illus. 20 cm. (*His: Mathematics for self-study*) \$2.00. 241

Contents (abridged): Preface. Introduction. Fundamental ideas, rates and differentials. Functions and derivatives. Differentials of algebraic functions. Use of rates and differentials in solving problems. Differentials of trigonometric functions. Velocity, acceleration, and derivatives. Interpretation of functions and derivatives by means of graphs. Maximum and minimum values. Problems in maxima and minima. Differentials of logarithmic and exponential functions. Reversing the process of differentiation. Integral formulas. Interpretation of integrals by means of graphs. Graphical applications of integration. Use of integrals in solving problems. The natural law of growth and the number "e." Index.

Note: This book, like others in the series, is an outgrowth of a demand for mathematics books which may be read as well as studied. It is designed for readers with an interest in the meaning and simpler technique of mathematical science and for those who must work without the aid of an instructor. In conformity with this plan, some topics usually found in books on the calculus are omitted from the volume. The method of rates is used rather than the method of limits.

WOODS, FREDERICK SHENSTONE

Advanced calculus. New edition. A course arranged with special reference to the needs of students of applied mathematics. Boston: Ginn and Company, 1934. 397 p. illus. 24 cm. \$4.60. 242

Contents (abridged): Preliminary. Power series. Partial differentiation. Implicit functions. Applications to geometry. The definite integral: applications to geometry. The definite integral: the gamma and beta functions. Line, surface, and space integrals. Vector notation. Differential equations of the first order. Differential equations of higher order. Bessel functions. Partial differential equations. Calculus of variations. Functions of a complex variable. Elliptic integrals. Answers. Index.

Note: An advanced course in the calculus that meets the needs of students of mathematical physics or of applied science who require a knowledge of many subjects not treated in the usual one-year course.

WELLS, VOLNEY HUNTER

Elementary calculus. New York: D. Van Nostrand Company, Inc., 1941. 410 p. illus. 23 cm. \$3.25. 243

Contents: Variables, limits, functions and equations. Differentiation of polynomials. The differential. The indefinite integral. Algebraic functions. The definite integral. Trigonometric functions. Exponential and logarithmic functions. Integration. Applications of differentiation and integration. Indeterminate forms. Infinite series. Polar coordinates. Solid analytic geometry. Partial differentiation. Multiple integration. Elementary differential equations. Index. Tables.

Note: In this text there are many specific features of clarity and simplicity—such as the careful treatment of infinitesimals and differentials, with applications to simple polynomials. The treatment then proceeds through indefinite intervals and their application, definite intervals and their use, followed by extension of the techniques to trigonometric, inverse trigonometric, logarithmic, and exponential functions, and problems arising from them. The remaining seven chapters of the book form a basis from which topics may be selected for a course of any desired length.

Calculus of Variations

CHICAGO UNIVERSITY. DEPARTMENT OF MATHEMATICS

Contributions to the calculus of variations, 1938-1941. Theses submitted to the Department of Mathematics of the University of Chicago. Chicago: The University of Chicago Press, 1942. v.p. illus. 24 cm. \$3.00. 244

Contents: The minimum of a function of integrals in the calculus of variations, by Carroll Parker Brady. The problem of Bolza for double integrals in the calculus of variations, by Edward Alfred Nordhaus. Differential systems with boundary conditions involving the characteristic parameter, by Augusto Bobonis. Applications of the covariant derivative of Cartan in the calculus of variations, by Ellen Clayton Stokes. Invariant multiple integrals in the calculus of variations, by Aubrey Wilfred Landers, Jr. The Hamilton-Jacobi theory for the problems of Bolza and Mayer, by Mary Kenny Landers. Index theorems for the problem of Bolza in the calculus of variations, by Katharine Elizabeth Hazard. Minima of double integrals with respect to unilateral variations and applications to subharmonic functions, by Joseph Harmon Levin. Differential systems involving k-point boundary conditions, by Ralph Mansfield. An analogue of Green's theorem for multiple integral problems in the calculus of variations, by Albert B. Carson. Bibliography for the theory of multiple integrals in the calculus of variations.

Note: The fourth in a series sponsored by the Mathematics Department of the University of Chicago, containing the theses accepted for Ph.D. degree at the university during the years 1930-1941. The present volume contains theses, covering original research, submitted between 1938 and 1941, together with bibliographies arranged chronologically, by subject and by author, on the theory of multiple integrals. The volumes are photolithographed from typescript. Each thesis has a special title-page and separate paging.

MORSE, MARSTON

The calculus of variations in the large. New York: The American Mathematical Society, 1934. 368 p. 16 cm. (American Mathematical Society. Colloquium publications. Vol. xviii) \$5.35. 245

Contents: The fixed end point problem in non-parametric form. General end conditions. The index form. Self-adjoint systems. The functional on a Riemannian space. The critical sets of functions. The boundary problem in the large. Closed extremals. Solution of the Poincaré continuation problem. Bibliography. Index.

Note: The background for the theory in this volume lies in two rather distinct fields of mathematics. We have on the one hand the theory of critical points of functions of n real variables. In the author's earlier papers he established a simple set of relations between the numbers of critical points of various types and the connectivity numbers of the domain over which the function ranges. On the other hand we have the calculus of variations and its modern treatment as a part of the functional calculus. The calculus of variations in the large derives its interest in large part from the fact that it undertakes a study of the configurations to which a calculus of variations gives rise, namely, the extremals, with respect to important properties apart from the question of whether or not they furnish extreme values for a definite integral. In classical calculus of variations only such arcs AB are considered which contain no point A' conjugate to A. The theory of this book reveals the importance of extremal arcs AB upon which there may be one or more points conjugate to A.

Functions

BLISS, GILBERT AMES

Algebraic functions. New York: American Mathematical Society, 1933. 218 p. illus. 23 cm. (American Mathematical Society. Colloquium publications. Vol. xvi) \$3.35. 246

Contents: Single-valued analytic functions. Algebraic functions and their expansions. Rational functions. The Riemann surface of an algebraic function. Integrals of rational functions. Abel's theorem. Birational transformations. The reduction of singularities by transformation. Inversion of Abelian integrals. Examples. Bibliography. Index.

Note: In the chapter on rational functions there is given an extremely brief and clear account of the theory of divisors. The integrands of the three elementary types of Abelian integrals are set up by the arithmetic methods of Dedekind and Weber. The book gives a careful account of the topology of Riemann surfaces and of the general properties of Abelian integrals. In the chapter on the reduction of singularities there is a thorough treatment of the problem of reducing the singularities of an algebraic curve, by means of birational transformation, to double points with distinct tangents.

FORD, WALTER BURTON

The asymptotic developments of functions defined by Maclaurin series. Ann Arbor: University of Michigan Press, 1936. 143 p. illus. 27 cm. (University of Michigan studies. Scientific series. Vol. xi) \$2.00. 247

Contents: Preliminary considerations. First general theorem. The theorem of Barnes. Maclaurin series whose general coefficient is algebraic in character. Second general theorem. Auxiliary theorems. Maclaurin series whose general coefficient involves the reciprocal of a single gamma function. Functions of exponential type. Maclaurin series whose general coefficient involves the reciprocal of the product of two gamma functions. Functions of Bessel type. Determination of the asymptotic behavior of the solutions of differential equations of the Fuchsian type. Bibliography.

Note: A monograph on the fundamental problem in the theory of functions of a complex variable, dealing with the nature of the function $f(z)$ as defined by its Maclaurin series when z approaches infinity. A review of earlier work is presented and a new general theorem of asymptotic developments is introduced.

GALE, ARTHUR SULLIVAN, AND CHARLES WILLIAM WATKEYS

Elementary functions and applications. Revised. New York: Henry Holt and Company, 1941. 409 p. illus. 22 cm. \$2.50. 248

Contents: Functions, equations, and graphs. Algebraic functions. Differentiations. Exponential and logarithmic functions. Trigonometric functions. Integration. Statistical methods. Measurement. Probability. Curve fitting. Correlation. Index.

Note: A study of the elementary functions, algebraic and transcendental, and their applications to problems arising in various fields of knowledge. The book presents one year's work in mathematics for college freshmen. The revised edition contains new material on conics, interest and discount, and spherical triangles, plus a rearrangement of chapters.

GEORGES, JOEL SAMUEL, AND JACOB M. KINNEY

Introductory mathematical analysis. New York: The Macmillan Company, 1938. 605 p. illus. 23 cm. \$3.00. 248a

Contents: Functional representation. The linear function $y = ax + b$. The function $Ax + By + Cz + D = 0$. The power function $y = ax^n$. The quadratic function $y = ax^2 + bx + c$. Polynomial functions. Circular functions. Exponential functions. The quadratic function $f(x, y) = 0$. Trigonometric analysis. Polar representation. Parametric representation. Surfaces.

Tables: Square roots (4 places). Cube roots (4 places). Common logarithms of numbers (5 places). Logarithms of trigonometric functions (5 places). Natural values of trigonometric functions (5 places). Natural logarithms (5 places). Index.

Note: A text for advanced students of college mathematics. It presents the mathematical concepts and processes traditionally given in separate courses as college algebra, trigonometry, and analytic geometry, in terms of separate manifestations of the basic concept of function. A knowledge of mathematics through differential calculus is assumed.

SHOHAT, JAMES ALEXANDER, CHAIRMAN, AND OTHERS

A bibliography on orthogonal polynomials. Report of the Committee on a Bibliography on Orthogonal Polynomials, Division of Physical Sciences, National Research Council, J. A. Shohat, chairman, Einar Hille, and Joseph L. Walsh. Washington, D.C.: The National Research Council of the National Academy of Sciences, 1940. 204 p. 25 cm. (Bulletin of the National Research Council. No. 103, August, 1940) \$3.00. 249

Contents: List of periodicals. Outline of the subject of orthogonal polynomials. List of authors, articles, and abstracts. List of books and theses. Abbreviated topical index. Table of totals.

Note: This bibliography contains 1,952 articles, 89 books, 39 theses, representing 643 authors, and covers published works from the original memoir of Legendre in 1784 to the works of Hilbert and others of the 1930s. An outline of orthogonal polynomials is included, giving the properties, applications, and nature of the polynomials. The greater part of the work consists of the list of authors, articles, and abstracts, which is arranged alphabetically by author. Titles appear in their original form and no attempt at translation into English is made. After the title and location of each article appears an abstract of each article in code symbols which refer to the outline previously mentioned. Among works other than articles, no attempt is made to list books on mathematical statistics and probability, and only those books are listed which treat orthogonal polynomials extensively.

SNOW, CHESTER

The hypergeometric and Legendre functions with applications to integral equations of potential theory. Washington, D.C.: National Bureau of Standards, Department of Commerce, 1942. 319 p. illus. 28 cm. Paper, U.S., \$2.00; foreign countries, \$2.50. 250

Contents: Transformations of the hypergeometric function: Definitions and preliminary formulas. Homographic substitutions. Non-linear substitutions. Integral representations. Some relations of contiguity. Associated Legendre functions. Heun's function. Generalizations of Fourier's integral. Some integral equations of potential theory. Applications.

Note: This is an outline of the theory and a collection of formulas pertaining to the ordinary hypergeometric function with special reference to the associated Legendre functions. The linear and quadratic transformations and analytic continuations of the hypergeometric function of z to all parts of the z -plane are written out at great length and for unrestricted values of its three parameters. The work includes an attempt to make accessible those transformations and properties of associated Legendre functions of general argument and parameters which are most commonly required, in physics without trespassing upon the proper ground of treatises devoted to the theory of these functions. Lithographed from pencilled manuscript.

SZEGÖ, GÁBOR

Orthogonal polynomials. New York: American Mathematical Society, 1939. 401 p. illus. 26 cm. (American Mathematical Society. Colloquium publications. Vol. xxiii) \$6.00. 251

Contents: Definition of orthogonal polynomials; principal examples. General properties of orthogonal polynomials. Jacobi polynomials. Laguerre and Hermite polynomials. Zeros of orthogonal polynomials. Inequalities. Asymptotic properties of the classical polynomials. Expansion problems associated with the classical polynomials. Representation of positive functions. Polynomials orthogonal on the unit circle. Asymptotic properties of general orthogonal polynomials. Expansion problems associated with general orthogonal polynomials. Interpolation. Mechanical quadrature. Polynomials orthogonal on an arbitrary curve. Problems and exercises. Bibliography. Index.

Note: The general concept of orthogonal polynomials was introduced into mathematical analysis in the middle of the 19th century by P. L. Chebyshev. Recent years have seen a great deal of progress in this field. This volume furnishes a detailed and systematic treatment of the subject for an exposition of which mathematicians previously had available only the brief monograph by J. Shohat, *Théorie générale des polynômes orthogonaux de Tchebichef*, Mémorial des sciences mathématiques, Paris, 1934. Much new material is presented, such as the distribution of zeros, asymptotic representations, and mechanical quadrature; many old results are presented in a novel setting, with more precise or general statements, as well as new proofs.

WEYL, HERMANN

Meromorphic functions and analytic curves, by Hermann Weyl, in collaboration with F. Joachim Weyl. Princeton, N. J.: Princeton University Press, 1943. 269 p. illus. 23 cm. (*Annals of mathematics studies*. No. 12) Paper, \$3.50.

252

Contents: Introduction. Early history and bibliography. Geometric and function-theoretic foundations. First main theorems for meromorphic curves. The second main theorem for meromorphic curves. First and second main theorems for analytic curves. The defect relations.

Note: This technical paper represents a continuation and advancement of the material presented in the authors' *Meromorphic curves*, Princeton, N. J., 1938 (*Annals of mathematics*, Vol. 39, July, 1938, p. 516-538). After a brief introductory review the present work develops a theory for the simultaneous study of three or more meromorphic or "part-form" functions on a Riemann surface, thus passing from plane to n -dimensional algebraic curves. Although most emphasis is placed upon meromorphic curves, the main results are carried over to the general case of analytic curves where the z -plane is replaced by an arbitrary Riemann surface. The bibliography lists 12 books and papers which form the chief landmarks in the historic development of the subject from 1876 to 1941.

Differential Equations

ACNEW, RALPH PALMER

Differential equations. New York: McGraw-Hill Book Company, Inc., 1942. 341 p. illus. 23 cm. \$3.00.

253

Contents: Introduction to differential equations. The differential equation $y' = f(x)$. Linear equations of first order and first degree. Linear differential equations. Use of series. Linear differential equations with constant coefficients. Mechanical problems. Electric circuits. Newton's equation $my'' = f(y)$ and the pendulum problem. Eigenvalues, Fourier series, and partial differential equations. Exact equations of first order; integrating factors. Special methods of solving $f(x, y, y') = 0$; singular solutions. Picard's method of approximating solutions $y' = f(x, y)$; existence theorems. Approximations to solutions and existence theorems for equations of higher order and for systems of equations. Appendix; bending of beams. Index.

Note: An unusually thorough text designed to facilitate the mastery of those techniques by which differential equations are obtained and solved and by which the solutions are used in pure and applied mathematics.

COHEN, ABRAHAM

An elementary treatise on differential equations. Second edition, completely revised. Boston: D. C. Heath and Company, 1933. 344 p. illus. 20 cm. \$2.50.

254

Contents: Differential equations and their solutions. Differential equations of the first order. Applications. Additional methods of solution for differential equations of the first order. Singular solutions. Linear differential equations of the second order. Miscellaneous methods for solving equations of higher order than the first. Integration in series. Total differential equations. Systems of simultaneous equations. Partial differential equations. Partial differential equations of the first order. Partial differential equations of higher order than the first. Notes. Index. Answers.

Note: Intended to present a sufficiently broad outline so as to be useful as a work of reference as well as a college textbook. Principles and devices are described which are employed in the integration of most types of differential equations. The second edition contains new material on the solutions of equations by means of series, plus new exercises and problems.

CONKWRIGHT, NELSON BUSH

Differential equations. New York: The Macmillan Company, 1934. 234 p. illus. 19 cm. (A series of mathematical texts, for colleges, edited by E. R. Hedrick) \$2.25.

255

Contents: Introduction and definitions. Equations of the first order and the first degree. Applications. Equations of the first order and higher degree than the first. Singular solutions. Linear equations with constant coefficients. Linear equations of the second order. Exact equations, equations of special forms, integration in series. Total differential equations. Numerical approximation. Partial differential equations of the first order. Partial differential equations of the second and higher orders. Index.

Note: A text for one-semester courses of sophomore or junior grade. References are given throughout the text to standard treatises on the existence theorems for the use of students with sufficient background in mathematical analysis.

FORD, LESTER R.

Differential equations. New York: McGraw-Hill Book Company, Inc., 1933. 263 p. illus. 23 cm. \$2.50.

256

Contents: Introduction to differential equations. Special methods for the equation of the first order. Linear equations of the second order. The method of successive approximations. Systems of ordinary equations. Interpolation and numerical integration. The numerical solution of differential equations. Linear equations. Certain classical equations. Partial differential equations of the first order. Partial differential equations of the second order. Index.

Note: In the introductory material and in connection with equations of the first order, the geometrical and intuitive aspects are emphasized, using lineal and circular elements, disks, and conical elements to give the student a pictorial view of the problem. This is followed by a more rigorous mode of treatment which involves accurate statements and logical proofs of existence theorems, based on the method of successive approximations. There is also a chapter on interpolation and numerical integration, plus material on linear dependence as related to general linear equations.

FRANKLIN, PHILIP

Differential equations for electrical engineers. New York: John Wiley & Sons, Inc., 1933. 299 p. illus. 22 cm. \$2.75.

257

Contents: Complex numbers. Average values and Fourier series. Linear differential equations with constant coefficients. Partial derivatives and partial differential equations. The physical meaning of certain partial differential equations. Solutions of partial differential equations satisfying given boundary values. Analytic functions. Convergence of Fourier series. Bibliography. Index.

Note: A textbook which treats the problems of current flow determination in networks with lumped constants, the geometric and physical meaning of partial derivatives and partial differential equations, and theory of power series and Fourier series. Practical applications are stressed in examples and problems.

KELLS, LYMAN MORSE

Elementary differential equations. Second edition. New York: McGraw-Hill Book Company, Inc., 1935. 248 p. illus. 21 cm. \$2.00.

258

Contents: Definitions and elementary problems. Particular solutions and simple applications. Differential equations of the first order and the first degree. Simultaneous equations and problems involving first-order differential equations. First-order equations of degree higher than the first. Singular solutions. Linear differential equations with constant coefficients. Applications of linear equations with constant coefficients. Miscellaneous differential equations of order higher than the first. Integration in series. Applications. Partial differential equations of the first order. Partial differential equations of order higher than the first. Index. Answers.

Note: A textbook for the advanced student of engineering, physics, or pure mathematics which combines a presentation of formal theory with practical applications. Fundamental types of differential equations are presented together with illustrative examples and numerous carefully graded exercises. Substitutions, integration by inspection, and use of integrating factors receive particular emphasis. The second edition contains new chapters on simultaneous equations, numerical approximation, and existence theorems, plus a brief treatment of the theory of operators and of Fourier's series.

MILLER, FREDERIC HOWELL

Partial differential equations. New York: John Wiley and Sons, Inc., 1941. 259 p. illus. 23 cm. \$3.00. 259

Contents (abridged): Ordinary differential equations. Partial differentiation and space geometry. Origins of partial differential equations. Linear equations of first order. Non-linear equations of first order. Fourier series. Linear equations of second and higher orders. Non-linear equations of second order. Answers to exercises. Index.

Note: Planned to fill the need of students of analysis, geometry, and the physical sciences for an adequate treatment of partial differential equations similar to the usual course in ordinary differential equations.

MORRIS, MAX, AND ORLEY E. BROWN

Differential equations. Revised edition. New York: Prentice-Hall, Inc., 1942. 355 p. illus. 23 cm. \$4.00. 260

Contents: Introduction. Differential equations of the first order and first degree. Equations of the first order, but not of the first degree. Linear differential equations. Numerical approximation to solutions. Integration in series. Ordinary differential equations in more than two variables. Partial differential equations of the first order. Linear partial differential equations with constant coefficients. Partial differential equations of order two. Table of integrals. Table of logarithms. Answers to exercises. Index.

Note: An advanced mathematics text covering the methods of solving ordinary and partial differential equations, such as are encountered in mechanics, physics, and geometry. Adaptable to the needs of engineering, liberal arts, or mathematics students. Theory is stressed only to the extent justified by a background of one year of calculus.

MOULTON, FOREST RAY

Differential equations. New York: The Macmillan Company, 1930. 395 p. illus. 22 cm. \$6.00. 261

Contents: Generalities and definitions. Analytic differential equations. Differential equations analytic in a parameter. Variation of parameters. Integrals of differential equations. Analytic implicit functions. The problem of elliptic motion. The sine-amplitude function. The deviation of falling bodies. The damped gyroscope. The method of successive integrations. Numerical solution of differential equations. The Cauchy-Lipschitz process. Generalities on linear differential equations. Linear differential equations with constant coefficients. Applications of linear differential equations. Linear differential equations with periodic coefficients. Differential equations in infinitely many variabilities. Appendices. Index.

Note: A textbook on the general classes of ordinary differential equations, both from the theoretical and the practical point of view. The contents are part of the lectures on differential equations given by the author at the University of Chicago for over twenty years. Several chapters of the book are devoted to the treatment of unusually difficult problems, mostly of a physical nature. These problems illustrate a number of the most important methods in differential equations and in implicit functions, and are treated from both the logical and the practical point of view.

NATIONAL RESEARCH COUNCIL

Numerical integration of differential equations. Report of Committee on Numerical Integration, Division of Physical Sciences, National Research Council, Albert A. Bennett, chairman. Washington, D.C.: The National Research Council of the National Academy of Sciences, 1933. 108 p. 24 cm. (Bulletin of the National Research Council. No. 92, November, 1933) Paper, \$0.50. 262

Contents: The interpolational polynomial, by Albert A. Bennett. Successive approximations, by Albert A. Bennett. Step-by-step methods of integration, by William E. Milne. Methods for partial differential equations, by Harry Bateman. Index.

Note: This report is intended for the student desirous of learning the theory of numerical integration of differential equations and for the practical computer. The subject either includes or presupposes the theory of restricted numerical tables and certain topics connected with interpolation and quadrature, matters which are treated in the first chapter of the present work. Univariate tables only are discussed, and central difference formulas have been included on account of their importance in handling results. Among the subjects treated are statistical theory in differential equations, the fundamental limiting processes used in numerical integration, and the approximation technique effective in dealing with ordinary differential equations. A considerable number of illustrative examples are included, and there are lengthy bibliographies following each chapter.

RAINVILLE, EARL DAVID

Intermediate course in differential equations. New York: John Wiley & Sons, Inc., 1943. 213 p. 21 cm. \$2.75. 263

Contents: Linear equations of the second order. Riccati equations. Preliminary material on complex variables. Solution in series. Equations of Fuchsian type. The hypergeometric equation. Confluence of singularities. Whittaker's confluent hypergeometric equation. Some classical equations. Applications. Index.

Note: This textbook for advanced students of mathematics, chemistry, and physics is intended to bridge the gap between elementary courses and really advanced courses, and attempts to furnish the student with further tools for constructing computable solutions for specific differential equations, in particular for linear equations in the neighborhood of regular singular points. A knowledge of advanced calculus is assumed.

REDDICK, HARRY WILFRED

Differential equations. New York: John Wiley & Sons, Inc., 1943. 245 p. illus. 22 cm. \$2.50. 264

Contents: Preliminary ideas. The formation of differential equations. Differential equations of first order. Linear equations with constant coefficients. Some special higher order equations. Simultaneous equations. Series solutions. Answers. Index.

Note: This textbook for courses in engineering and liberal arts colleges deals with methods of solving ordinary equations. It includes no treatment of partial differential equations. Six hundred problems with the answers are included.

RITT, JOSEPH FELS

Differential equations from the algebraic standpoint. New York: American Mathematical Society, 1932. 172 p. 23 cm. (American Mathematical Society. Colloquium publications. Vol. xiv) \$2.70. 265

Contents: Decomposition of a system of ordinary algebraic differential equations into irreducible systems. General solutions and resolvents. First applications of the general theory. Systems of algebraic equations. Constructive methods. Constitution of an irreducible manifold. Analogue of the Hilbert-Netto theorem. Theoretical decomposition process. Analogue for form quotients of Lüroth's theorem. Riquier's existence theorem for orthonomic systems. Systems of algebraic partial differential equations. Index.

Note: The author sets himself the task of developing a theory of elimination which will reduce the existence problem for a

finite or an infinite system of algebraic differential equations to the application of the implicit function theorem taken with Cauchy's theorem in the ordinary case and Riquier's in the partial. The author shows that every system is equivalent to a finite number of closed irreducible systems $\Sigma_1, \Sigma_2, \dots, \Sigma_r$. The final step is the development of a theoretical process for finding a finite system of equations equivalent to a closed irreducible system Σ_1 . The difficulties arising in the Riquier method of elimination are avoided in the author's process.

THOMAS, JOSEPH MILLER

Differential systems. New York: American Mathematical Society, 1937. 118 p. 26 cm. (American Mathematical Society. Colloquium publications. Vol. xxi) \$2.00. 266

Contents: Generalities on symbols and systems. Grassmann algebra. Differential rings. Commutative monomials and polynomials. Algebraic systems. Algebraic differential systems. Function systems and differential systems. Pfaffian systems. Consistency examples. Illustrative examples. Bibliography. Index.

Note: There are two types of "differential systems": systems of (partial) differential equations and the Pfaffian systems. It has been known since Cauchy and Pfaff that there are many relations between solutions of the corresponding two types of equations. It is the main purpose of this book to develop the existence of solutions for the two types of equations from a formalized algebraic approach and to exhibit their relations from the viewpoint of Riquier's theory of "orthonomic systems."

Continuous Groups

EISENHART, LUTHER PFAHLER

Continuous groups of transformations. Princeton: Princeton University Press, 1933. 301 p. 23 cm. \$4.00. 267

Contents: The fundamental theorems. Properties of groups. Differential equations. Invariant sub-groups. The adjoint group. Geometrical properties. Contact transformations. Bibliography. Index.

Note: This book sets forth the general theory of Lie and his contemporaries and the results of recent investigations with the aid of the methods of the tensor calculus and concepts of the new differential geometry. Of the exercises, some involve merely direct application of the formulas of the text, but many of them constitute extensions of the theory which would properly be included as portions of a more extensive treatise. References to the sources of these exercises are given for the benefit of the reader. For students of higher mathematics.

Fourier Series

CHURCHILL, RUEL VANCE

Fourier series and boundary value problems. New York: McGraw-Hill Book Company, Inc., 1941. 206 p. illus. 23 cm. \$2.50. 268

Contents: Introduction. Partial differential equations of physics. Orthogonal sets of functions. Fourier series. Further properties of Fourier series; Fourier integrals. Solution of boundary value problems by the use of Fourier series and integrals. Uniqueness of solutions. Bessel functions and applications. Legendre polynomials and applications. Index.

Note: Presents an introductory treatment of Fourier series and their application to the solution of boundary value problems in the partial differential equations of physics and engineering. The book seeks first to equip the student with that part of the theory of orthogonal sets of functions which is essential to the usual applications arising in the physical sciences; and second, to give him a thorough knowledge of the classical process of solving boundary value problems in partial differential equations, with the aid of those expansions in series of orthogonal functions.

JACKSON, DUNHAM

Fourier series and orthogonal polynomials. Oberlin, O.: The Mathematical Association of

America, 1941. 234 p. illus. 19 cm. (The Carus mathematical monographs. No. 6) \$2.00. 269

Contents: Fourier series. Legendre polynomials. Bessel functions. Boundary value problems. Double series—Laplace series. The Pearson frequency functions. Orthogonal polynomials. Jacobi polynomials. Hermite polynomials. Laguerre polynomials. Convergence. Exercises. Bibliography. Index.

Note: Based on a course given by the author at the University of Minnesota. The treatment is for advanced mathematical students and other readers with a knowledge of calculus and a familiarity with mathematical concepts.

LEVINSON, NORMAN

Gap and density theorems. New York: American Mathematical Society, 1940. 246 p. illus. 26 cm. (American Mathematical Society. Colloquium publications. Vol. xxvi) \$4.00. 270

Contents: On the closure of $e^{i\lambda x}$. Zeros of entire functions of exponential type. On non-harmonic Fourier series. Fourier transforms of nonvanishing functions. A density theorem of Polya. Determination of the rate of growth of analytic functions from their growth on sequences of points. An inequality and functions of zero type. Existence of functions of zero type bounded on a sequence of points. The general higher indices theorem. The general unrestricted Tauberian theorem for larger gaps. On restrictions necessary for certain higher indices theorems. Appendix.

Note: This volume is in many respects a companion volume of the earlier Colloquium series publication of Paley and Wiener's *Fourier transforms in the complex domain*, described below. The same tools are used in both; certain topics such as the closure of trigonometric sequences are treated in both. The technique of the Fourier transform in the complex domain developed in the Paley-Wiener volume has been further extended in the solution of such problems as the general unrestricted gap Tauberian theorem. In the case of many of the problems discussed, the results obtained are shown to be the "best possible."

PALEY, RAYMOND EDWARD ALAN CHRISTOPHER, AND NORBERT WIENER

Fourier transforms in the complex domain. New York: American Mathematical Society, 1934. 184 p. illus. 25 cm. (American Mathematical Society. Colloquium publications. Vol. xix) \$3.35. 271

Contents: Quasi-analytic functions. Szász's theorem. Certain integral expansions. A class of singular integral equations. Entire functions of the exponential type. The closure of sets of complex exponential functions. Non-harmonic Fourier series and a gap theorem. Generalized harmonic analysis in the complex domain. Random functions. The harmonic analysis of random functions. Bibliography. Index.

Note: This volume covers a great variety of topics which are unified by the central idea of the application of the Fourier transform in the complex domain. The authors had long been convinced of the importance of the Fourier-Mellin transforms as a tool in analysis but knew of no systematic development of their use. Perhaps the nearest approach to such a development is found in the researches of H. Bohr, Jessen, and Besicovitch. With its aid, they were able to attack such diverse analytic questions as those of quasi-analytic functions, Mercer's theorem on summability, Milne's integral equation of radiative equilibrium, the theorems of Müntz and Szász concerning the closure of sets of powers, and Titchmarsh's theory of entire functions of semi-exponential type with real negative zeros.

Transformations

HALMOS, PAUL R.

Finite dimensional vector spaces. Princeton: Princeton University Press, 1942. 195 p. 22 cm. (Annals of mathematics studies. No. 7) Paper, \$2.35. 272

Contents (abridged): Spaces; Definition of vector space. Comments on notation and terminology. Definition of linear dependence. Characterization of linear dependence. Dimension of vector space. Linear manifolds. Calculus of linear manifolds. Conjugate space. Direct sums. Transformations: Definitions and examples of linear transformations. Definition of matrices. Isomorphism between matrices and operators. Reducibility. Projections. Adjoint operators. Range and null space of a linear transformation. Super diagonal form. Orthogonality: Concept of an inner product. Formal definition of unitary space. Applications of Schwarz's inequality. Projection theorem. Hermitian transformations. Cayley transform. Spectral theorem for Hermitian polar decomposition. Minimax principle. Ergodic theorem for unitary transformations. Power series. Appendixes. Bibliography. List of notations. Index of definitions.

Note: Addressing the advanced undergraduate or beginning graduate student, the author treats linear transformations on finite dimensional vector spaces by the methods of more general theories than the Hilbert space theory and elementary matrix theory. The purpose is to emphasize the simple geometric notions common to many parts of mathematics and their applications. The bibliography lists fourteen books on the subject.

MURRAY, FRANCIS JOSEPH

An introduction to linear transformations in Hilbert space. Princeton, N.J.: Princeton University Press, 1941. 135 p. 22 cm. (Annals of mathematics studies. No. 4) Paper, \$1.75. 273

Contents: Introduction. Hilbert space. Realizations of Hilbert space. Additive and closed transformations. Weak convergence. Projections and isometry. Resolutions of the identity. Bounded self-adjoint and unitary transformations. Canonical resolution and integral representations. Symmetric operators. References to further developments. References to applications. Index.

Note: This paper presents a set of results which the author calls the group germ of the theory of operators in Hilbert space, and is concerned with the structure of a single normal operator. The elementary portions of the subject are given as geometrical a form as possible and the integral representations of unitary, self-adjoint, and normal operators are linked with the canonical resolution. The bibliography is annotated.

WIDDER, DAVID VERNON

The Laplace transform. Princeton: Princeton University Press, 1941. 406 p. 23 cm. (Princeton mathematical series. . . .6) \$6.00. 274

Contents: The Stieltjes integral. Fundamental formulas. The moment problem. Absolutely and completely monotonic functions. Tauberian theorems. The bilateral Laplace transform. Inversion and representation problems for the Laplace transform. The Stieltjes transform. Bibliography. Index.

Note: This book is designed for the student of advanced mathematics who has a working knowledge of the theory of one complex and of one real variable, and who is particularly interested in analysis. The material on the Stieltjes integral, as well as that on the Stieltjes transform and on completely monotonic functions, has not hitherto appeared in book form. Several proofs of the prime number theorem are included, to introduce one of the most elegant illustrations of the analytic method. Effort has been made to insure that the book is complete in itself, and proofs have been included of results with which the student might not be familiar.

Elementary Geometry

KERN, WILLIS FREDERICK, AND JAMES R. BLAND
Geometry, with military and naval applications. New York: John Wiley and Sons, Inc., 1943. 152 p. illus. 21 cm. \$1.75. 275

Contents (abridged): Plane figures. Lines—planes—angles. Solids for which $V = Bh$. Solids for which $V = 1/3 Bh$. Solids for which $V = (\text{mean } B)/h$. The sphere. Volumes and surfaces of revolution—polyhedrons. Summary and review. Appendixes: Trigonometric functions—right triangle. A theorem on limits; proof of Cavalieri's theorem; references from plane geometry. Tables. Answers. Index.

Note: A presentation of the fundamental, practical essentials of solid geometry, with special emphasis upon their military and naval applications. The authors aim to develop a space intuition

by use of exercises which call for visualization of cross sections of solids in connection with reducing a problem in solid geometry to a number of simple problems in plane geometry. The proof of each volume formula is based on Cavalieri's theorem.

KERN, WILLIS FREDERICK, AND JAMES R. BLAND
Solid mensuration, with proofs. Second edition. New York: John Wiley & Sons, Inc., 1938. 172 p. illus. \$2.00. 276

Contents: Plane figures. Lines—planes—angles. Solids for which $V = Bh$. Solids for which $V = 1/3 Bh$. Solids for which $V = (\text{mean } B)/h$. The sphere. Volumes and surfaces of revolution—polyhedrons. The general prismatoid. Summary and review. Appendix. Tables. Answers. Index.

Note: An analysis of the fundamental, practical essentials of solid geometry. In this revision simple proofs of the volume and surface formulas are given. By basing the proof of each volume formula on Cavalieri's theorem the conventional treatment is greatly simplified. Further simplification is obtained by considering the elementary and most familiar solids first and by separating the solids into natural groups.

SCHAAF, WILLIAM LEONARD

Plane and solid geometry for home study. Philadelphia: The New Home Library, 1944. 432 p. illus. 20 cm. \$0.69. 277

Contents: Introduction. Part I, Plane geometry: Nature of logical geometry. Congruence of triangles. Parallel lines. Inequalities. Quadrilaterals and polygons. Circles. Loci and constructions. Similarity and proportion. Measurement of area. Part II, Solid geometry: Lines and planes in space. Dihedral and polyhedral angles. Prisms and pyramids. Cylinders and cones. The sphere. Formulas of plane geometry. Formulas of solid geometry. Solutions and answers. Index.

Note: A textbook, planned for those who wish to study geometry at home, which endeavors to indicate the applications of the subject to everyday needs. The introduction stresses the relation between the science and the objects seen in the world around us, and presents the basic concepts and terminology. Theorems with illustrative problems follow for both plane and solid geometry.

SIGLEY, DANIEL TELL, AND WILLIAM T. STRATTON

Solid geometry and mensuration. New York: The Dryden Press, 1942. 164 p. illus. 21 cm. (The Dryden Press mathematics publications. General editor: E. R. Smith) \$1.75. 278

Contents: Review of plane geometry. Planes in space. Loci. Angles. Polyhedrons and prisms. Pyramids. Cylinders and cones. Cavalieri's theorem and prismoids. The sphere. Spherical geometry. Miscellaneous exercises. Appendix. Index.

Note: This textbook is designed for college students in colleges and technical schools who have not had the usual high school course in solid geometry. The main purpose of the text is to train the student in visualizing three-dimensional space and to emphasize the practical applications to problems in mensuration. The appendix contains a summary of the theorems from plane geometry, and tables of weights, measures, squares and cubes, logarithms and trigonometric functions are included.

THOMPSON, JAMES EDGAR

Geometry for the practical man. New York: D. Van Nostrand Company, Inc., 1934. 358 p. illus. 20 cm. (His: Mathematics for self-study) \$2.00. 279

Contents: Part I, Introduction to geometry: Origin and development of geometry. Some preliminary ideas and methods of geometry. Part II, Properties of plane figures: Some properties of straight lines and angles. Plane figures formed by straight lines and angles. Some properties of the circle. Proportion and similar figures. Part III, Measurement of geometrical figures: Dimensions and areas of plane figures. Regular polygons and the measurement of the circle. Surface areas and volumes of solids having plane faces. The "three round bodies" and their measurement. Answers to exercises.

Note: The aim of this volume is to present the fundamentals of elementary geometry from the viewpoint of those who wish to

use it for practical purposes in the arts and industry and in the study of other branches of mathematics. The treatment of the subject attempts to be as informal as the nature of geometry allows.

Projective Geometry

COURT, NATHAN ALTSHILLER

Modern pure solid geometry. New York: The Macmillan Company, 1935. 311 p. illus. 22 cm. \$3.90. 280

Contents: Preliminary. The trihedral angle. The skew quadrilateral. The tetrahedron. Transversals. The oblique cone with a circular base. Spheres. Inversion. Recent geometry of the tetrahedron.

Note: This college textbook has been prepared as the natural continuation of the principles of modern geometry applied to the geometry of space. The subject matter has been limited to the point, line, plane, circle, and sphere. Conic sections are not dealt with, nor are their properties invoked in the proofs. There are frequent exercises and examples, and historical, biographical, and bibliographic notes appear at the end of the book.

GRAUSTEIN, WILLIAM CASPAR

Introduction to higher geometry. New York: The Macmillan Company, 1930. 486 p. illus. 22 cm. (A series of mathematical texts, edited by E. R. Hedrick) \$4.50. 281

Contents (abridged): Linear equations and linear dependence. Geometrical introduction. Homogeneous Cartesian coordinates. Linear dependence of points and lines. Harmonic divisions. Line coordinates. Cross ratio. Transformations. Metric geometry of the complex plane. One-dimensional projective geometry. Projective coordinates in the plane. Geometries. Point conics and line conics. Point curves and line curves. Projective, affine, and metric properties of conics. Projective theory of conics. Pairs and pencils of conics. Applications of transformations. The circle. Space geometry. Supplementary reading. Index.

Note: This is a textbook designed to initiate the student in the basic ideas and methods, and to furnish an adequate background for further geometrical studies. A few fields only are developed thoroughly, with special emphasis laid on fundamentals common to all geometry. The geometries associated with the projective group and the group of circular transformations, of the groups of geometrical transformations, are selected for intensive study. The systematic method of exposition, rather than the problem method, is used.

HOLGATE, THOMAS FRANKLIN

Projective pure geometry. New York: The Macmillan Company, 1930. 286 p. illus. 20 cm. \$3.30. 282

Contents: Primitive forms. Projection and section. Infinitely distant elements. The principle of duality. Simple and complete rectilinear figures. Harmonic forms. Metric properties. Anharmonic ratios. Projectively related primitive forms. Curves and pencils of rays of the second order. Pascal's and Brianchon's theorems. The theory of poles and polars. Applications of the pole and polar theory. Diameters and axes. Algebraic equations of conics. Projectively related forms of the second order. The theory of involution. Foci and focal properties of conics. Imaginary elements. Problems of the second order. The theory of inversions. Index.

Note: An introductory textbook for undergraduate college students. The author has excluded a discussion of the logical foundations on which modern geometry rests, to facilitate the work of the student. Also, technical language has been avoided in favor of colloquial phraseology wherever possible. The definition adopted for the projective relation between two forms is that of Von Staudt. The order of presentation is that of Reye, of whose work *Geometrie der Lage*, free use has been made.

SANGER, RALPH GRAFTON

Synthetic projective geometry. New York: McGraw-Hill Book Company, Inc., 1939. 175 p. illus. 21 cm. \$2.00. 283

Contents: Introductory concepts. Desargues' triangle theorem. Harmonic sets. One-dimensional projective transformations.

Conics. Cross ratio. Metric properties of projective figures. Synthetic space geometry. A brief historical sketch of the development of projective geometry. Index.

Note: A college textbook designed for a first course in plane synthetic projective geometry, developed largely by the methods used in classical geometry. Part of the material concerning the projectives between two one-dimensional forms has been developed for projectivities between pencils of lines rather than pencils of points. The text is not intended as a comprehensive summary but rather as a presentation of only sufficient theory to enable the reader to become familiar with certain phases of the subject and seek further information in the many classical treatises on projective geometry.

SHIVELY, LEVI STEPHEN

An introduction to modern geometry. New York: John Wiley & Sons, Inc., 1939. 167 p. 22 cm. \$2.00. 284

Contents: Introduction. Similarity. Theorems of Ceva and Menelaus. Harmonic points and lines. The triangle. Coaxial circles. Inversion. Poles and polars. Cross ratio. Involution. Constructions with ruler and compass. Selected theorems and problems. Bibliography. Index.

Note: This book is strictly elementary and introductory in nature. The content should be of particular value to those students who are preparing to teach high school mathematics, and of similar interest to those in liberal arts colleges who are majoring in mathematics. A fair degree of mathematical maturity is presupposed in addition to courses in high-school algebra, plane geometry, and the elements of trigonometry.

WATSON, EMERY ERNEST, AND MARGARET MARIE WATSON

Elements of projective geometry. Boston: D. C. Heath and Company, 1935. 260 p. illus. 20 cm. \$2.80. 285

Contents: Introduction. Prime forms, projection and section. Desargues's theorem. Harmonic ranges. Projectively related prime forms. Point-rows of the second order. Harmonic properties of the conic. Involution. The triangle. Diameters and axes. The foci and the focal properties of a conic. Ruled surfaces of the second order. Historical sketch of projective geometry. Index.

Note: This college textbook presupposes on the part of the student a knowledge of elementary geometry and a slight knowledge of trigonometry. It provides an introductory course for students who intend to enter the fields of higher mathematics, engineering, or the profession of teaching mathematics in secondary schools. The use of central projection has been made prominent in order to establish the idea of infinitely distant elements.

YOUNG, JOHN WESLEY

Projective geometry. Chicago, Ill.: Published for the Mathematical Association of America by the Open Court Publishing Company, 1930. 185 p. illus. 19 cm. (The Carus mathematical monographs. No. 4) \$2.00. 286

Contents: Introductory concepts. Projective space, the principle of duality. Desargues' theorem, harmonic sets. Projectivities in one-dimensional forms, the fundamental theorem. The Pascal and Brianchon theorems. Metric properties. Groups of projective transformations. The algebra of points and the introduction of analytic methods. Groups and geometries. Index.

Note: In the first five chapters of this introductory work the author has provided a systematic and elementary treatment of fundamental propositions, culminating in the theorems of Pascal and Brianchon and the polar system of a conic. The remaining chapters deal with the relation of the subject to metric geometries, and lay the foundation for the reader's use of analytic methods.

Descriptive Geometry

BRADLEY, HARRY CYRUS, AND EUGENE H. UHLER

Descriptive geometry for engineers. Second edition. Scranton, Pa.: International Textbook

Company, 1943. 266 p. illus. 22 cm. (International texts in mechanical engineering: C. F. Taylor, consulting editor) \$2.50. 287

Contents: Part I, Fundamental principles: Orthographic projection. Fundamental constructions. Problems on the point, line, and plane. Developable surfaces and developments. Surfaces of revolution. Warped surfaces. Intersections. Methods of revolution. Traces. Hip and valley angles for roofs of buildings. Part II, Application to engineering problems: Concurrent coplanar forces. Parallel coplanar forces. Non-concurrent coplanar forces. Forces in space. Geology. Mining engineering. Index.

Note: This book presents the necessary principles involved in the solution of most engineering problems involving mechanics, geology, mining, and architectural engineering. The theory is presented in rather condensed form and follows the method of most geometry textbooks in giving lemmas, construction, general cases, corollaries, and specific problems. The text is fully illustrated with mechanical drawings of the problems described. The second part of the book gives specific applications to engineering problems based on the theory outlined in Part I. The text is supplemented by a separate book of plates by the author entitled *Problems in descriptive geometry for engineers*, Scranton, Pa.: International Textbook Company, 1943, 157 p., paper, \$1.75.

BUBB, FRANK WILLIAM

Descriptive geometry. New York: The Macmillan Company, 1935. 234 p. illus. 22 cm. \$2.50. 287a

Contents: The purpose of descriptive geometry. Elementary drawing. Auxiliary views. On the solution of problems. Intersection and development of solids. Elementary surfaces. Development of surfaces. More general types of surfaces. Mining problems. Summary. Index.

Note: An introductory text for college students, showing the graphical methods of illustrating three-dimensional objects and problems by methods necessarily limited to two-dimensional plane surfaces. Emphasis is placed on the solution of problems in space prior to studying the two-dimensional system of drawing. All of the exercises given are suitable for drafting room or for outside assignment. Mainly for use in engineering and architectural courses. The author's *Descriptive geometry problem book*, New York: Macmillan, 1936, 90 p., \$1.75, is available for use in conjunction with this text.

FISCHER, FERDINAND AUGUST PAUL, AND JAMES A. CLEAR

Descriptive geometry for engineering and architectural draftsmen. Milwaukee: The Bruce Publishing Company, 1942. 244 p. illus. 28 cm. \$3.00. 288

Contents: Points. Lines. Profile projections. Coplanar lines. Perpendicular lines. Piercing points. Planes. Fundamental relations between points, lines, and planes. Plane intersections. Further relations of points, lines, and planes. Advanced problems in revolution and projection. Surfaces. Shades and shadows. Pictorial representations. Engineering applications. Prepared set of problems. Supplementary problems. Tests. Descriptive geometry tables.

Note: In this textbook for freshman college students of engineering and architecture, the graphical solutions of the descriptive geometry problems have been divided into successive steps. The first drawing of the series represents the given data. This is followed by a series of progressive stages culminating in the solution of the problem in the last step. From three to six steps are used, depending on the complexity of the problem. A brief description of each problem is given directly below the set of drawings on the same page. Applications are described in detail and a thorough study is made of intersections, developments, warped surfaces, shades, and shadows.

HOOD, GEORGE JÜSSEN

Geometry of engineering drawing; descriptive geometry by the direct method. Second edition. New York: McGraw-Hill Book Company, Inc., 1933. 348 p. illus. 23 cm. \$2.50. 289

Contents: Introductory. Principal views. Auxiliary views. Oblique views. Design of structures. Straight lines. Curved lines. Planes. Intersection and development of surfaces. Single-curved surfaces. Warped surfaces. Double-curved surfaces. Mining problems. Perspective drawings and shades and shadows. The projection method. Problems. Index.

Note: A second-year college textbook for engineering students, based on what the author calls the direct method of approach, or the method of three-dimensional visualization of the structure or object as opposed to the method of projections, ground lines, and traces of planes, which is held to create an undesirable two-dimensional visualization of the object. The student is taught to view and make drawings as if they were the objects themselves. The second edition contains new problems and new illustrations plus new practical applications.

LARKINS, JAMES THOMAS, JR.

Descriptive geometry. New York: Prentice-Hall, Inc., 1939. 317 p. illus. 23 cm. (Prentice-Hall mathematics series, Albert A. Bennett, editor) \$3.35. 290

Contents (abridged): Section One, The fundamental principles of points, lines and planes. Section Two, The piercing point as related to lines and planes. Section Three, Revolution and counter-revolution. Section Four, Application of sections One, Two and Three as related to plane problems and single- and double-curved surfaces of revolution. Index.

Note: A textbook for students in engineering and other college courses.

LEVENS, ALEXANDER SANDER, AND H. C. T. EGGERS

Descriptive geometry. New York: Harper and Brothers, 1941. 240 p. illus. 24 cm. \$2.75. 291

Contents: Preface. Introduction. Fundamentals. Non-metric problems. Auxiliary views. Measurement or metric problems. Surfaces, intersections and tangent planes. One-view drawings. Applications. Appendix. Index.

Note: A textbook for students of engineering. A coordinate system is introduced to correlate the graphic subject with the symbolic subject of analytic geometry. Just enough of the symbolic language is used in the body of the text to simplify the statement of the problems. The remainder of the analytic treatment is given in the appendix.

MILLAR, ADAM VAUSE, AND K. G. SHIELDS

Descriptive geometry. Boston: D. C. Heath and Company, 1939. 192 p. illus. 22 cm. \$2.40. 292

Contents: Principles of projection. Straight lines. Planes—line and plane relations. Shades and shadows—perspective. Curved lines and surfaces. Plane sections and developments of curved surfaces. Intersection of surfaces. Appendix. Index.

Note: Special features of this engineering college text are: the ground line is omitted and the student is thus led to concentrate on the object in space, auxiliary views are extensively used, and miniature layouts for the problems are included. The treatment is consistent with commercial drafting practice in the United States.

MILLER, HENRY WILLARD

Descriptive geometry. Seventh edition. New York: John Wiley and Sons, Inc., 1941. 254 p. illus. 23 cm. \$2.50. 293

Contents: Abbreviations, notations, conventions, definitions. The point and line. Planes. Simple relations of the point, line, and plane. Higher relations of the point, line, and plane. Applications of revolution in measurement of plane figures. Lines and surfaces. Tangent planes. Intersection of surfaces. Development of cylinders and cones. Shades and shadows. Perspective. Test exercises. Index.

Note: A textbook for engineering college students. The author pays tribute to the basic works of Monge, Warren, and Church, but he has successfully adapted his treatment of the subject to the needs of present-day engineers. The seventh edition contains 23 new sheets of test exercises designed to supplement the discussions and illustrations of the text as well as to test the student's understanding of theory.

ROEVER, WILLIAM HENRY

The Mongean method of descriptive geometry. New York: The Macmillan Company, 1933. 151 p. illus. 20 cm. \$3.00. 294

Contents: Introduction. Book I, The Mongean method of double orthographic projection: Representation of the point. Representation of the straight line—its traces. Representation of the plane. Profile, or third plane of projection. Fundamental problems of geometry of position. Other problems of geometry of position. Problems involving perpendicularity. Metrical problems. Other devices for the solution of metrical problems. Index.

Note: A revision for American use of that portion of Professor Loria's work on the Mongean method in his *Vorlesungen über darstellende Geometrie*, published in Germany in 1907. This text was approved by Professor Loria before publication. The original work has been modified to reduce the mathematical prerequisites and to emphasize the mathematical aspects of descriptive geometry. The subject is of interest to mathematicians and engineers.

ROWE, CHARLES ELMER

Engineering descriptive geometry; the direct method for students, draftsmen, architects, and engineers. New York: D. Van Nostrand Company, Inc., 1939. 299 p. illus. 23 cm. \$2.50. 295

Contents: Introduction. Principal views. Auxiliary views. Oblique views. Line and plane problems. Surfaces and developments. Surfaces and intersections. Warped surfaces. Geology and mining problems. Engineering problems. The Mongean method of descriptive geometry. Shades and shadows. Perspective drawing.

Note: This book deals directly with any problem as a space relationship, and solves the problem directly on the drawing board without using ground lines, folding lines, traces of planes or other devices commonly regarded as characteristic of descriptive geometry. In applying the direct method, fourteen fundamental principles form the working basis for the solution of all problems. An idea of the simplicity and scope of these principles may be gained by noting that three of them refer to orthographic drawing, and one each to the following: parallel lines, perpendicular lines, the normal view of a line, the end view of a line, the edge view of a plane, the normal view of a plane, the principal lines of a plane, the cutting plane, the piercing points of a line, the revolution of a line, the revolution of a plane.

SCHUMANN, CHARLES HENRY, JR.

Descriptive geometry; a treatise on the graphics of space for the scientific professions. Third edition. New York: D. Van Nostrand Company, Inc., 1938. 336 p. illus. 23 cm. \$2.75. 296

Contents: Preface to the second edition. Preface. Introductory principles and problems. Problems on points, lines and planes. Additional special problems. Lines. Single curved surfaces. Warped surfaces. Double curved surfaces and surfaces of revolution. Intersections of surfaces. Appendix: Plane and solid geometry theorems, plane curves. Index.

Note: This book emphasizes the practical applications of the problems, which are used effectively to teach space visualization and to develop engineering and architectural ability. It covers the fundamentals of problems on points, lines, planes, and solids both from the old method of plane traces and the newer so-called "direct" method where plane traces as such are not used. The unit-circle method of solution as well as the chapter on warped surfaces are features of special merit.

SMITH, WILLIAM GRISWOLD

Practical descriptive geometry. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1936. 275 p. illus. 23 cm. \$2.50. 297

Contents: Part I, The essentials of descriptive geometry: Fundamentals. Oblique plane solutions. Analytical solutions. Part II, Applications: Curved lines. Single curved surfaces. Warped surfaces. Double curved surfaces. Sheet-metal problems. Shades and shadows. Pictorial projection.

Note: A textbook for engineering college students. The problems are based on engineering situations.

SMUTZ, FLOYD ALONZO, AND RANDOLPH F. GINGRICH

Descriptive geometry; essential principles and applications for students of engineering and architecture. Second edition. New York: D. Van Nostrand Company, Inc., 1938. 237 p. illus. 23 cm. \$2.50. 298

Contents: Introduction. Drafting instructions. Fundamental concepts and operations. Space location of points and lines. Point and line problems. Point, line, and plane problems. Planes determined by traces. Surface. Tangents to surfaces. Intersections of surfaces. Application to shades and shadows.

Note: This book makes use of the "auxiliary plane" method of solution. Extensive use is made of auxiliary views resulting in simple open figures, pictorial views are frequently used side by side with corresponding orthographic representations, making it easy for the student to visualize the problem and the solution illustrated. Two sets of exercises are given, one for the recitation course and the other for the drafting room work.

WARNER, FRANK MELVILLE

Applied descriptive geometry with drafting-room problems. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 228 p. illus. 23 cm. \$2.25. 299

Contents: Orthographic drawing. Fundamental auxiliary views. Point-line-plane problems. Revolution. Concurrent noncoplanar forces. Curved lines and surfaces. Intersection of surfaces. Practice problems. Drafting-room problems.

Note: A practical treatment of descriptive geometry, introducing and developing principles in the typical situations in which they would be used by the engineer. Beginning with simple three-view orthographic projection and taking the reader through curved lines and surfaces, cones and cylinders, many problems from actual practice are given.

Trigonometry

BALLOU, DONALD HENRY, AND FREDERICK H. STEEN

Plane and spherical trigonometry, with tables. New York: Ginn and Company, 1943. 179, 10, 84 p. illus. 23 cm. \$2.40. 300

Contents: Part I, Plane trigonometry: Angles and coordinates. The trigonometric functions. Solution of right triangles and applications. Reduction theorems and formulas. Identities and equations. The addition formulas and derived relations. Solution of oblique triangles. Theory and use of logarithms. Summary of formulas. Part II, Spherical trigonometry: Right spherical triangles. Oblique spherical triangles. Applications. Summary of formulas. Index. Answers. Five-place tables.

Note: A college or engineering school textbook. A large number of graded exercises have been provided and the authors have made a special effort to use illustrations and indicate applications that will be interesting to the student. Haversines and haversine formulas are discussed in connection with great-circle sailing and celestial navigation. Throughout the section on spherical trigonometry the authors have kept in mind the uses in navigation and astronomy. The book is available from the same publisher without the five-place tables. The same publisher offers separately *Plane trigonometry, with tables*, 1943, 123, 7, 84 p., \$2.00, and *Spherical trigonometry, with tables*, 176, 84 p., \$1.25, by the same authors.

BAUER, GEORGE NEANDER, AND W. E. BROOKE

Plane and spherical trigonometry. Third revised edition. Boston: D. C. Heath and Company, 1932. 394 p. illus. 20 cm. \$2.20. 301

Contents: Plane trigonometry: Rectangular coordinates and angles. Trigonometric functions. Right triangles. Variations of the trigonometric reduction of functions of $n 90^\circ \pm \alpha$. Fundamental relations. Line values. Functions of the sum of two angles. Double angles. Half angles. Inverse functions. Oblique triangle. De Moivre's theorem with applications. Logarithms. Spherical

trigonometry: Fundamental formulas. Spherical right triangle. Oblique spherical triangle. Answers.

Note: Directed lines and Cartesian coordinates are introduced as a working basis in this college textbook for students preparing for the calculus. Inverse functions are treated more fully than is customary. The work on spherical trigonometry contains the development of all the formulas generally used in practical astronomy. New illustrative problems and minor textual changes are included in the third edition. With this is bound the authors' *Logarithmic and trigonometric tables*, New York, 1917.

BELL, CLIFFORD, AND TRACY Y. THOMAS

Essentials of plane and spherical trigonometry. New York: Henry Holt and Company, 1943. 308 p. illus. 22 cm. \$1.80; tables separate (paper), \$0.65. 302

Contents: Angles. Coordinates. Trigonometric functions. First applications. Aids in calculation. Trigonometric identities. Solution of oblique triangles. Trigonometric equations. The inverse functions. Spherical trigonometry: Preliminaries from solid geometry. The right spherical triangle. The oblique spherical triangle. Answers. Tables. Index.

Note: A brief course in plane and spherical trigonometry for use in U.S. Army courses and in beginning college courses, with emphasis on the computational side of the subject. Practical applications of the principles involved are presented at the close of each chapter and cover surveying, gun fire, airplane location, and navigation. A short review of solid geometry follows the section on plane trigonometry and eases the transition to spherical trigonometry. Use of the straight and circular slide rules is discussed, and prints are provided for their construction by the student. A protractor is also furnished with each text. Five-place tables give the natural functions and the logarithms of functions of angles in both degrees and mils.

BRANSON, JOHN WILLIAM, AND J. O. HASSLER

Trigonometry. New York: Henry Holt and Company, 1937. 271 p. illus. 21 cm. \$1.85. 302a

Contents: Functions of acute angles. Logarithms. Solution of right triangles. Functions of any angle. Introduction to oblique triangles. Functions of more than one angle. Oblique triangles concluded. Radian measure. Inverse functions. Graphical representation. Trigonometric equations. Complex numbers. Introduction to spherical trigonometry. Appendix.

Note: A presentation of the essentials of trigonometry for college freshmen which aims to encourage the student to think through and understand processes rather than memorize rules. Seventy-three pages of tables are included.

BRENKE, WILLIAM CHARLES

Plane and spherical trigonometry. With tables to four and five places. New York: The Dryden Press, 1943. 372 p. illus. 21 cm. (The Dryden Press mathematics publications; general editor, E. R. Smith) \$2.50. 303

Contents: The trigonometric functions. Variation of the trigonometric functions. Radian measure. Applications. Use of tables of natural functions. Logarithmic solution of right triangles. Applications. Projection of line segments. Vectors. Applications. Small angles. The mil unit. Applications. Functions of several angles. Oblique plane triangles. Inverse functions. Analytical trigonometry. Spherical trigonometry. Applications. Answers to odd-numbered exercises. Index. Appendixes.

Note: The complete text of this work is suitable for first-year college courses, but with the omission of certain chapters and topics the text can be used in senior high school. Chapters xi and xii are also published separately under the title *Spherical trigonometry*, New York: The Dryden Press, 1943, 28 p., \$0.90.

BRINK, RAYMOND WOODWARD

Plane trigonometry. Revised edition. With tables. New York: D. Appleton-Century Company, Inc., 1940. 110 p. illus. 20 cm. \$2.20. 304

Contents (abridged): The trigonometric functions. Trigonometric functions of an acute angle. Logarithms. The right triangle. Radian measure. Properties of the trigonometric functions. The fundamental relations. Functions of two angles. The oblique triangle. The inverse trigonometric functions. De Moivre's theorem and series expansions. Index.

Note: A beginning textbook for college students. Answers to exercises are given, making the text suitable for home-study or review purposes. Logarithmic and trigonometric tables are included.

BRINK, RAYMOND WOODWARD

Spherical trigonometry. New York: D. Appleton-Century Co., Incorporated, 1942. 62 p. illus. 21 cm. \$0.75. 305

Contents (abridged): The geometry of a sphere. The right spherical triangle. The oblique spherical triangle. The celestial sphere. Appendixes. The mil. The haversine. Latitudes and longitudes. Index.

Note: This textbook on the fundamentals of spherical trigonometry is suited to college students. Answers to problems are included, making the book adaptable to home-study.

CARSON, ALBERT BERTIE

Plane trigonometry made plain; with logarithmic and trigonometric tables. Chicago: American Technical Society, 1942. 389 p. illus. 21 cm. \$2.75. 306

Contents: Historical account. Principles of triangles. Trigonometric ratios. Logarithms. Practical applications. Oblique triangles. Reduction formulas. Relations between trigonometric functions. Functions of two angles. Graphical representation. Inverse trigonometric functions and equations. Logarithms of numbers. Natural trigonometric functions. Use of logarithms in solving triangles. Logarithms of trigonometric functions. Index.

Note: A detailed discussion, with figures and illustrative examples. Much attention is devoted to numerical work, and emphasis is placed on the application of trigonometrical principles in surveying, physics, and the machine shop. Answers to the problems are available in a separate pamphlet issued by the same publisher.

COWLES, WILLIAM HENRY HARRISON, AND JAMES E. THOMPSON

A text book of trigonometry for colleges and engineering schools. New York: D. Van Nostrand Company, Inc., 1936. 373 p. illus. 23 cm. \$2.50. 307

Contents: Angles and angle measure. Trigonometric functions of angles. Functions of acute angles and trigonometric tables. Right triangles. Applications and problems. Properties of functions of one angle. Functions of several angles. Inverse trigonometric functions. Properties of oblique triangles. Solution of oblique triangles. Applications and problems. Polar coordinates and complex numbers. Series expansions and related topics. Coordinates and graphs. Logarithms. The slide rule. Useful tables. Index. Answers.

Note: This book starts with a review of the needed principles of geometry and of logarithms and the slide rule. Trigonometric principles are clearly developed from familiar ideas of algebra and geometry. The radian measure of angles, and its notation, is used throughout the book, together with degree measure.

DOOLE, HOWARD POLLOCK

Plane and spherical trigonometry. New York: Thomas Y. Crowell Company, 1944. 183 p. illus. 19 cm. \$1.50. 307a

Contents: Introduction and definitions. Identities and equations involving only one angle. Functions of multiple angles. The use of logarithmic tables. Solution of triangles. Line values and graphs of trigonometric functions. Spherical trigonometry. Appendix. Tables. Index. Answers to odd-numbered problems.

Note: A compact but thorough course in the theoretical part of trigonometry. The first five chapters are sufficient for a brief theoretical course, while a brief numerical course may be laid out through a selection of certain topics outlined. The tables are useful solely for illustrative purposes, and a separate set of tables are needed for working the exercises and problem given.

GAY, HAROLD J.

Computation and trigonometry. New York: The Macmillan Company, 1938. 231 p. illus. 22 cm. \$2.00; with tables, \$2.50. 308

Contents: Accuracy and arithmetic. Logarithms. The slide rule. Angles and their measurement. The trigonometric functions. Identities and equations. The right triangle. Solid geometry and trigonometry. Functions of large angles. Graphs of the trigonometric functions. Formulas involving several angles. The oblique triangle. The right spherical triangle. The oblique spherical triangle. Applications of spherical trigonometry. Formulas. Index.

Note: A textbook for freshman college courses, presenting a review of logarithms and solid geometry together with a brief text on plane and spherical trigonometry. It is designed for students intending to continue with college mathematics. With this is bound: Earle Raymond Hedrick, *Logarithmic and trigonometric tables*, revised edition, New York, 1938.

HAMMOND, JACQUES REDWAY

Concise spherical trigonometry, with applications and reviews of solid geometry and plane trigonometry. Boston: Houghton Mifflin Company, 1943. 256 p. illus. 22 cm. \$2.20. 309

Contents: Introduction. Fundamental concepts. Right spherical triangles. The six types of general triangle solutions. Terrestrial applications. Celestial applications. Appendixes: Geometrical description and classification of ambiguous solutions. Alternate methods of spherical triangle solutions. Instruments for observing spherical trigonometric data. The *Nautical Almanac* and the *Air Almanac*. Answers to problems. Index.

Note: A textbook developed for use particularly in naval schools or pre-flight courses, the emphasis being upon the practical applications to navigation at sea and in the air. One method only is presented for solving all spherical triangles, namely, the Napier's rules solution of right spherical triangles, and the subject is based upon solid geometry by means of references and review in the Introduction. Completely worked-out examples are offered as guides for the solution of assigned problems, and there are discussions of the earth's surface geometry and its motions.

HARDING, ARTHUR McCracken, AND GEORGE W. MULLINS

Plane trigonometry. Revised edition. New York: The Macmillan Company, 1937. 172 p. illus. 20 cm. (A series of mathematical texts, edited by E. R. Hedrick) \$1.75; with tables, \$2.25. 310

Contents: Introduction. Coordinates. Angles, trigonometric functions. The right triangles. Logarithms. The solution of right triangles. The oblique triangle. Reduction formulas. Relations between the functions. Trigonometric analysis. Units of angle measure. Line values—graphic representation. Inverse trigonometric functions. Answers. Index.

Note: Contains the material usually required for a one-semester course in trigonometry for freshmen. An effort has been made to condense the essentials of the subject without sacrificing clarity. The revised edition contains a new chapter on logarithms, new material on approximations, and new problems.

HARDY, JAMES GRAHAM

A short course in trigonometry. Revised edition. New York: The Macmillan Company, 1938. 152 p. illus. 22 cm. \$1.75; with tables, \$2.25. 311

Contents: The trigonometric functions. General definitions. Relations between the trigonometric functions. Reduction to acute angles. Solution of oblique triangles. Variation of the trigonometric functions. Radian measure. Functions of several angles. The solution of trigonometric equations. Inverse functions. Logarithmic solution of triangles. Logarithms. Answers. Tables: 5 place Napierian and Briggsian logarithms and other tables.

Note: Written for students of some maturity, the book assumes a desire on their part to know more fully what trigonometry is and what it does. The subject is presented as a continuous development closely connected with other branches of knowledge. With this is bound: E. R. Hedrick, *Logarithmic and trigonometric tables*, revised edition, New York, 1938.

HART, WALTER WILSON, AND WILLIAM L. HART

Plane trigonometry, solid geometry and spherical trigonometry. Boston: D. C. Heath and Company, 1942. 280 p. illus. 23 cm. \$2.35. 312

Contents: Part I, Plane trigonometry: Functions of acute angles. Logarithms. Logarithmic solution of right triangles and applications. Trigonometric functions of any angle. Radian and mil measure. Variation and graphs of the functions. Simple identities and equations. Addition formulas. Oblique triangles. Advanced analytical topics. Polar coordinates. Part II, Solid geometry: Planes and polyhedral angles. Spherical geometry. Measurement of solids. Appendix. Part III, Spherical trigonometry: Right spherical triangles. Oblique spherical triangles. Application of spherical triangles and related topics in navigation. Answers to exercises. Index.

Note: A textbook planned with particular attention to the need for increased numbers of men and women in industry who can make practical applications of trigonometry and who have a substantial appreciation of spatial relations. The work is also adaptable for use in college courses where a rounded treatment of the subject is desired in a short period of time. Applications of current interest are placed at logical points throughout the text. Parts II and III are also published separately under title *Solid geometry and spherical trigonometry*, Boston: D. C. Heath and Company, 1942, 124 p., \$1.90.

KELLS, LYMAN MORSE, AND OTHERS

Plane and spherical trigonometry, by Lyman M. Kells, Willis F. Kern, and James R. Bland. Second edition. New York: McGraw-Hill Book Company, Inc., 1940. 401 p. illus. 23 cm. \$2.00. 313

Contents: Plane trigonometry: Trigonometric functions of an acute angle. Fundamental relations among the trigonometric functions. General definitions of trigonometric functions. Right triangles. Formulas and graphs. General formulas. Important formulas relating to triangles. Oblique triangles. Inverse trigonometric functions. Complex numbers. Logarithms. The slide rule. Spherical trigonometry: The right spherical triangle. The oblique spherical triangle. Various methods of solving oblique spherical triangles. Applications.

Note: A simple, logically arranged text. Features are the graded exercises, the treatment of synthetic division, the chapter on the slide rule, the abridged methods of multiplication and division, and the proposed model form for logarithmic computation. This edition is available with tables for \$2.75, and the tables are available separately at \$1.00. Also, there is an *Alternate edition* offered at the same price which is adapted to wartime use and in which military and nautical applications of trigonometry are stressed.

KELLS, LYMAN MORSE, AND OTHERS

Spherical trigonometry, with naval and military applications, by Lyman M. Kells, Willis F. Kern and James R. Bland. New York: McGraw-Hill Book Company, Inc., 1942. 163 p. illus. 23 cm. \$2.40. 314

Contents: Logarithms. Review of plane trigonometry. The right spherical triangle. Elementary applications. The oblique spherical triangle. Applications. Appendixes. Index. Answers.

Note: This text is designed to suit the needs of men who expect to become officers in the Navy, Army, or Air Corps. While treating the subject of spherical trigonometry in detail, it takes up the most important applications of trigonometry and logarithms to navigation and related topics. Each topic is explained carefully, illustrated by examples, and followed by a list of problems designed to give familiarity with the subject. The fundamental process of navigation, that of determining position, is considered in detail. Outlines are given for short, medium, and complete courses.

NELSON, ALFRED LEWIS, AND KARL W. FOLLEY

Plane and spherical trigonometry. Revised edition. New York: Harper & Brothers, 1943. 247 p. illus. 22 cm. \$2.40. 315

Contents: Trigonometric functions of acute angles. Trigonometric functions of the general angle. Oblique triangles. Logarithms. Logarithmic solution of triangles. Reduction formulas. Graphs. Trigonometric functions of two angles. Inverse trigonometric functions. Trigonometric equations. Complex numbers. Solution of spherical triangles. Applications of spherical trigonometry. Table I, Squares of numbers. Table II, Natural functions. Table III, Haversines. Table IV, Trigonometric formulas. Answers. Index.

Note: A revision of a standard college text, designed to meet the need for a course which is largely numerical in character. The order of the topics has been rearranged and the chapter on vectors has been expanded. There is now a chapter on the applications of spherical trigonometry, principally to navigation. Most of the problems appearing in the earlier edition have been replaced by new ones. The tables in this edition are also available separately from the same publisher, price: \$1.20.

PALMER, CLAUDE IRWIN, AND CHARLES WILBER LEIGH

Plane and spherical trigonometry. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1934. 365 p. illus. 23 cm. \$2.50. 316

Contents: Introduction. Trigonometric functions of one angle. Relations between trigonometric functions. Right triangles. Functions of large angles. Graphical representation of trigonometric functions. Practical applications and related problems. Functions involving more than one angle. Oblique triangles. Miscellaneous trigonometry equations. Complex numbers, De Moivre's theorem, series. Spherical trigonometry.

Note: A widely-used textbook. In this edition five-place logarithmic and trigonometric tables are bound in. The text and the tables are both available separately from the same publisher.

PATTERSON, KARL BACHMAN, AND A. O. HICKSON

Plane trigonometry. New York: F. S. Crofts and Co., 1936. 219 p. illus. 21 cm. \$1.75. 316a

Contents: Rectangular system of coordinates. Explanation of the tables of values of the trigonometric functions. Solution of right triangles. Functions of right triangles. Functions of certain angles. Identical relations. Fundamental relations. Identical relations among the functions of related angles. Logarithms. Solution of right triangles by logarithms. Fundamental relations involving more than one angle. Radian measure. Trigonometric equation. Line representation of the functions. Inverse functions and their graphs. Solution of oblique triangles. Complex numbers. De Moivre's theorem. Appendix. Answers.

Note: A feature of this freshman college text is the effort made to encourage the student to invent original exercises showing the application of trigonometric theory to practical problems.

RICKEY, FRANK A., AND J. P. COLE

Plane and spherical trigonometry. New York: The Dryden Press, 1942. 209 p. illus. 21 cm. (The Dryden Press mathematics publications; general editor, E. R. Smith) \$2.25. 316b

Note: A review of plane geometry constitutes the first chapter of this freshman college text, and a 16-page recapitulation of solid mensuration precedes the spherical trigonometry. Two tables of figures and their corresponding derived formulas serve as summaries of plane and solid geometry. The mil as a unit of angular measure is included, and vector representation of velocities, accelerations, and forces is emphasized. Plotting graphs in polar coordinates is part of the chapter on the functions of the general angle. The problems stress practical applications and answers to odd-numbered exercises are included. The appendix contains four-place trigonometric tables.

RIDER, PAUL REECE

Plane and spherical trigonometry. New York: The Macmillan Company, 1942. 275 p. illus. 22 cm. \$2.00; with tables, \$2.50. 317

Contents: Plane trigonometry: Trigonometric functions of acute angles. Solution of triangles. Approximate numbers and computation. Logarithms. Logarithmic solution of right triangles. Trigonometric functions of any angle. Solution of oblique triangles. Trigonometric formulas and identities. Radian measure. Graphic representations of the trigonometric functions. Inverse trigonometric functions. Trigonometric equations. Complex numbers. Spherical trigonometry: Introduction to spherical trigonometry. Solution to right spherical triangles. Solution of oblique spherical triangles. Applications of spherical trigonometry. Important formulas. Index. Answers to odd-numbered exercises.

Note: For use in introductory courses in colleges and technical schools. Discussion of the more difficult of the theoretical topics is postponed to the latter part of the book, while practical applications are introduced early in the text. Four-place tables and a protractor are provided.

RIETZ, HENRY LEWIS, AND OTHERS

Plane and spherical trigonometry, by H. L. Rietz, J. F. Reilly, and Roscoe Woods. Revised edition. New York: The Macmillan Company, 1936. 240 p. illus. 22 cm. (A series of mathematical texts, for colleges, edited by E. R. Hedrick) \$1.50; with tables, \$2.20. 318

Contents: Trigonometric functions of an acute angle. Simple applications—solution of right triangles. Trigonometric functions of any angle. Trigonometric identities, variation of the trigonometric functions—line values—graphs. Law of sines. Law of cosines—applications. Addition theorems and related formulas. Logarithms. Solution of triangles by logarithms. Radian measure of angles. Inverse trigonometric functions. Trigonometric equations. Tables. Answers to odd-numbered exercises and problems. Index.

Note: For freshmen students in colleges and technical schools. Outlines of courses of 30 and 45 lessons respectively are given for the instructor, and the book contains at least twice as many exercises and problems as can be used in a standard course.

ROSENBACH, JOSEPH BERNHARDT, AND OTHERS

Plane and spherical trigonometry, with tables, by Joseph B. Rosenbach, Edwin A. Whitman, and David Moskovitz. Boston: Ginn and Company, 1943. 342 p. illus. 20 cm. \$2.50. 319

Contents: Plane trigonometry: The trigonometric functions. Use of tables of trigonometric functions. Solution of right and oblique triangles. Radian measure. Fundamental identities. Logarithms. Solution of triangles with use of logarithms. Graphical representation of the trigonometric functions. Inverse trigonometric functions. General values. Complex numbers and De Moivre's theorem. Spherical trigonometry: Right spherical triangles. Oblique spherical triangles. Applications of spherical trigonometry. Formulas for reference. Answers. Index. Tables.

Note: A clear yet rigorous presentation of trigonometry. The subject is presented in such a way that the student can acquire both fundamentals and technique directly from the text. There are many illustrative examples and problems planned for both four-place and five-place computation, and complete directions for use of the tables. In the treatment of spherical trigonometry applications to terrestrial and astronomical problems are included. The same publisher offers this text without tables, and offers also the authors' *Plane trigonometry*, both with and without tables, which contains the same material as the plane portion of this work.

SKINNER, ERNEST BROWN

Introduction to trigonometry and analytic geometry. New York: The Macmillan Company, 1932. 189 p. 19 cm. (A series of mathematical texts, edited by E. R. Hedrick) \$2.00. 320

Contents: Rectangular coordinates. Angles and functions of angles. Applications of trigonometry to geometry. The solution of oblique triangles. Analytic trigonometry. Parametric equations. Exponential functions. Inverse functions. Transformation of coordinates. Transformation of the plane. Conic sections. The general equation of the second degree. Miscellaneous topics. Geometry of three dimensions. Curved surfaces. Index.

Note: A condensed course for college freshmen designed to cover the elements of trigonometry and analytic geometry in one semester as an introduction to the calculus. Visualization of the geometric aspect of each formula is stressed.

THOMPSON, JAMES EDGAR

Elements of spherical trigonometry. New York: D. Van Nostrand Company, Inc., 1942. 144 p. illus. 20 cm. \$1.65. 321

Contents (abridged): The sphere and spherical triangles. Formulas of spherical triangles. Solution of spherical right triangles. Solution of oblique spherical triangles. Applications and problems. Index. Answers to exercises.

Note: A concise, basic textbook written for college students. The inclusion of answers to problems makes possible its use for review or home study.

Analytic Geometry

BUCHANAN, HERBERT EARLE, AND G. E. WAHLIN

The elements of analytic geometry. New York: Farrar & Rinehart, Incorporated, 1937. 256 p. illus. 20 cm. \$2.25. 322

Contents: Introduction. Graphs and loci. Polar co-ordinates. The straight line. The circle. The conic sections. Derivatives, tangents, normals, and applications. The general equation of the second degree. Parametric equations and loci. Empirical equations—logarithmic co-ordinates. Rectangular co-ordinates in space. Planes and straight lines. Transformations of the co-ordinates. Curves and surfaces. Answers. Index.

Note: Intended to fill the needs of the student of calculus who knows very little algebra and less trigonometry, as well as those of the engineering student requiring the fundamentals of analytic geometry.

CAMPBELL, ALAN DITCHFIELD

Advanced analytic geometry. New York: John Wiley & Sons, Inc., 1938. 310 p. illus. 22 cm. \$4.00. 323

Contents (abridged): Part I, Introduction to affine plane analytic projective geometry: Various coordinate systems. Preliminary discussion of linear transformations. Introduction to affine linear transformations. Introduction to the study of cross-ratio. Preliminary discussion of groups of linear transformations and their associated geometries. Preliminary discussion of imaginary elements in geometry. Elementary discussion of n th degree curves. Conics and linear families of conics. Part II, Introduction to general plane analytic projective geometry. Introduction to the triangle of reference. Introduction to homogeneous co-ordinates. Some theorems about the line at infinity. Introduction to line coordinates and plane duality. Introduction to general analytic projective geometry. Introduction to correlations and polarities. Some theorems on conics. Some theorems about complete quadrangles. Further discussion of n -ics. Further discussion of linear families of conics. Index.

Note: The aim of this textbook for college students is to introduce the analytic side of projective geometry and such concepts as cross-ratio, triangle of reference, and general projective transformation.

CRENSHAW, BOLLING HALL, AND CINCINNATUS D. KILLEBREW

Analytic geometry and calculus. Second edition, revised by Ralph D. Doner. Philadelphia: The Blakiston Co., 1937. 222 p. illus. 24 cm. \$2.75. 324

Contents: Review of algebra and trigonometry. Points and distances. The straight line. The circle. Equations of the conics in the simplest standard form. Polar coordinates. Transformation of coordinates. Conics with axes parallel to the coordinate axes. Differentiation. Application of the derivative to mechanics. Tangents and normals. Some properties of the conics. Maxima and minima of functions of a single variable. Differentials. Formal integration. The definite integral. Applications of the integral calculus. Series.

Note: This book presents a compact introduction to analytic geometry and calculus. An unusually large number of illustrative examples are completely worked out, and straightforward explanations are provided. Answers are provided to the problems.

CURTISS, DAVID RAYMOND, AND ELTON JAMES MOULTON

Analytic geometry. Boston: D. C. Heath and Company, 1930. 338 p. illus. 20 cm. \$2.60. 325

Contents (abridged): Plane analytic geometry: Formulas from algebra and trigonometry. Coordinates and graphs. Preliminary formulas. Equations of straight lines. Problems concerning straight lines. The circle. Standard equations of the conic sections. Transformation of rectangular coordinates. Certain general methods. Parametric equations. Tangents and normals. Diameters, poles, and polars. The general equation of the second degree. Curve fitting. Solid analytic geometry: Preliminary formulas. Planes and straight lines. Surfaces and curves. Systems of co-ordinates. Index.

Note: A first-year college textbook containing sufficient material for two semesters but so arranged as to be adaptable for shorter courses by omitting certain marked chapters. A review of algebra and trigonometry is first presented, employing determinants and reduction and addition formulas wherever practicable so that the three related subjects are presented as a closely related whole. Curve plotting and fitting and the use of logarithmic paper are illustrated, and the latter portion of the book contains preparatory material for the calculus.

DRESDEN, ARNOLD

Solid analytical geometry and determinants. New York: John Wiley & Sons, Inc., 1930. 310 p. illus. 22 cm. \$3.00. 326

Contents: Determinants and matrices. Linear equations. Points and lines. Planes and lines. Other coordinate systems. General properties of surfaces and curves. Quadric surfaces, general properties. Classification of quadric surfaces. Quadric surfaces, special properties and methods. Properties of central quadric surfaces. Appendix. Index.

Note: This textbook is designed to give an introduction to methods and principles which have an important part in various fields of advanced mathematics. Among these are the methods based on the theory of determinants and on the concept of the rank of a matrix, which the author discusses in the first two chapters, together with a treatment of systems of linear equations. The text is so arranged that these two chapters may be used at the beginning of the course, or concurrently with the remainder of the book.

EISENHART, LUTHER PFAHLER

Coordinate geometry. Boston: Ginn and Company, 1939. 298 p. illus. 21 cm. \$2.75. 327

Contents: Points and lines in the plane. Lines and planes in space. Determinants. Transformations of coordinates. The conics. Locus problems. The quadric surfaces. Appendix. Index.

Note: A textbook for freshman college courses, which outlines the use of algebraic processes in the study of geometric problems and the geometric interpretation of algebraic equations. Intended for students interested in pure mathematics rather than its applications, the book aims to encourage the reader to think mathematically. An unusual feature is the presentation of coordinate geometry in the plane in such a manner as to lead readily to the study of lines and planes in space as a generalization of the geometry of the plane.

HILL, MICHAEL ARENDELL, JR., AND J. B. LINKER

Brief course in analytics. New York: Henry Holt and Company, 1940. 204 p. illus. 20 cm. \$1.50. 328

Contents: Basic definitions and theorems. Equations and loci. The straight line. Special equations of the second degree: The circle. The parabola. The ellipse. The hyperbola. Some lines associated with second degree curves. The conics. The general equation of the second degree. Equations in other forms. Elements of solid analytic geometry: The point. The plane. The line. Surfaces. Answers to odd numbered exercises. Index.

Note: An introductory text in analytic geometry for college students, designed for classes meeting three hours a week. There are numerous graded problems.

LEHMANN, CHARLES H.

Analytic geometry. New York: John Wiley & Sons, Inc., 1942. 425 p. illus. 23 cm. \$3.75. 328a

Contents: Plane analytic geometry: The point in the plane. Equation and locus. The straight line. The circle. Transformation of coordinates. The parabola. The ellipse. The hyperbola. The general equation of the second degree. Polar coordinates. Parametric equations. Higher plane curves. Solid analytic geometry: The point in space. The plane. The straight line in space. Surfaces. Curves in space. Appendixes. Answers to exercises. Index.

Note: A first course in plane and solid analytic geometry for college students. It assumes on the part of the student only the usual preliminary preparation in elementary geometry, plane trigonometry, and the essential parts of college algebra. The work is longer than the usual textbook in this field, and the emphasis is upon the acquiring of a sound knowledge of analytic methods rather than upon the geometric facts alone.

LOVE, CLYDE ELTON

Elements of analytic geometry. Second edition. New York: The Macmillan Company, 1940. 159 p. illus. 21 cm. \$2.00. 328b

Contents: Plane analytic geometry: Cartesian coordinates. The locus of an equation. The equation of a locus. The straight line. The circle. The conic sections: The parabola. The ellipse. The hyperbola. Coordinate transformations. The general equation of second degree. Tangents and normals. Algebraic curves. Polar coordinates. Parametric equations. Solid analytic geometry: Coordinates in space. The plane. The straight line. Surfaces. Index.

Note: An abridgment of the author's longer work, *Analytic geometry*, third edition, New York: The Macmillan Company, 1938, 279 p., \$2.75. The present work is intended for one-semester college courses leading to a study of the calculus.

MASON, THOMAS EDWARD, AND CLIFTON T. HAZARD

Brief analytic geometry. Boston: Ginn and Company, 1935. 196 p. illus. 21 cm. (Textbooks in mathematics, edited by R. D. Carmichael) \$2.25. 329

Contents: Plane analytic geometry: The point. The straight line. Equation and locus. The circle. Other second degree curves: The parabola. The ellipse. The hyperbola. Conics. Other types of curves in rectangular coordinates: Algebraic curves. Transcendental curves. Parametric equations. Polar equations. Solid analytic geometry: Points, planes, and lines. Surfaces and curves. Answers. Index.

Note: An abridgment of the authors' *Analytic geometry*, Boston, 1927, adapting the material to a schedule of 50 to 60 lessons for use in preparatory courses leading to the study of the calculus. About half of the exercises in this edition are new.

MORRIS, MAX, AND ORLEY E. BROWN

Analytic geometry and calculus. New York: McGraw-Hill Book Company, Inc., 1937. 507 p. illus. 23 cm. \$3.75. 330

Contents: Analytic geometry: Introduction. Graphs and loci. The straight line. Equations of the second degree. Special plane curves. Solid analytic geometry. Calculus: Variables, functions, limits, and continuity. Derivatives. Applications of derivatives. Indefinite integrals. Definite integrals. Partial derivatives. Multiple integrals. Line integrals. Infinite series. Differential equations. Indexes.

Note: Presents in a single volume the essentials of both subjects in a manner adequate to the needs of the combined course as offered in colleges and technical schools. Emphasis is placed on solid analytic geometry, the notion of a limit, continuity of functions, partial differentiation, and approximate integration. A large number of exercises and problems is included.

NATIONAL RESEARCH COUNCIL. COMMITTEE ON RATIONAL TRANSFORMATIONS

Selected topics in algebraic geometry-II. Supplemental report of the Committee on Rational Transformations by Virgil Snyder, Amos H. Black and Leaman A. Dye. Washington, D.C.: Published by the National Research Council of

the National Academy of Sciences, 1934. 84 p. 24°. (Bulletin of the National Research Council. No. 96, November, 1934) Paper, \$1.00. 331

Contents: Curved and ruled surfaces, by Virgil Snyder. The mapping of systems and curves, by Leaman A. Dye. Systems of lines in S_n ; irregular surfaces, by Virgil Snyder. Cremona transformations, by Virgil Snyder. Multiple correspondences, by Virgil Snyder. Surfaces and varieties, by Amos H. Black.

Note: A supplement to the Council's *Selected topics in algebraic geometry*, Bulletin no. 63, Washington, D.C., 1928. The present work consists of six technical papers summarizing the advances made in the field of algebraic geometry during the period 1924-1933 by American and foreign mathematicians. The mapping of curves and of systems of curves is presented in considerable detail, with a wide inclusion of source material. Similarly, the properties of surfaces, not always coming under the caption of rational transformations, have been collected and arranged. The transcendental theory and the mapping of algebraic surfaces have not been included. There are extensive bibliographies following each of the papers.

NOWLAN, FREDERICK STANLEY

Analytic geometry. Second edition. New York: McGraw-Hill Book Company, Inc., 1934. 352 p. illus. 19 cm. \$2.25. 332

Contents (abridged): Plane analytic geometry. Number systems. Directed lines. Coordinate systems. Fundamental relations. Loci. Rectangular coordinates. Loci. Polar coordinates. The straight line. The circle. The conics. Tangents, normals, and chords of contact. Diameters, poles, and polars. Properties of conic. Rotation of axes. Transformations. The general equation of the second degree. Higher plane curves. Determinants. Coordinates, projection, and direction angles. Surface of revolution, cones, and cylinders. The plane and straight line. Quadric surfaces. Index.

Note: A basic textbook for college students. The material is presented in simplified form.

OSGOOD, WILLIAM FOGG, AND WILLIAM C. GRAUSTEIN

Plane and solid analytic geometry. New York: The Macmillan Company, 1930. 614 p. illus. 18 cm. \$3.25. 333

Contents: Plane analytic geometry: Directed line-segments. Projections. Coordinates. Curves and equations. The straight line. Applications. The circle. Introductory problems in loci. Symmetry of curves. The parabola. The ellipse. The hyperbola. Certain general methods. Polar coordinates. Transformation of coordinates. The general equation of the second degree. Loci, auxiliary variables, inequalities. Diameters. Poles and polars. Transformations of the plane. Strain. Determinants and their applications. Solid analytic geometry: Projections. Coordinates. Direction cosines. Direction components. The plane. The straight line. The plane and the straight line, advanced methods. Spheres, cylinders, cones. Surfaces of revolution. Quadric surfaces. Spherical and cylindrical coordinates. Transformation of coordinates. Index.

Note: A text for use in elementary college courses in which algebraic difficulties are given special attention and numerous examples are used as illustrations. More material than is usual in introductory college courses is included.

PATTERSON, KARL BACHMAN, AND A. O. HICKSON

Analytic geometry. New York: F. S. Crofts and Co., 1944. 187 p. illus. 20 cm. \$2.10. 333a

Contents: Cartesian coordinates. The loci of equations. The equation of a locus. The straight line. The circle. Conic sections. Translation and rotation of axes. Polar coordinates. Parametric equations. Tangents and normals. Analytic geometry of three dimensions. Answers. Index.

Note: Contains topics usually treated in a brief course and which can be discussed thoroughly in from 40 to 50 class hours. Suitable for first semester college courses.

PETTIT, HARVEY PIERSON, AND P. LUTEYN

Essentials of analytic geometry. New York: The Dryden Press, 1942. 208 p. illus. 21 cm.

(The Dryden Press mathematics publications; general editor, E. R. Smith) \$2.25. 334

Contents: Formulas for reference. Points. The straight line. The circle. Conic sections. Transformation of axes. Tangents to conics. Curve tracing in polar co-ordinates. General method of curve tracing. Parametric equations. Empirical equations. Rectangular co-ordinates in three dimensions. The plane. Quadric surfaces. Numerical table. Answers. Index.

Note: A text for college students who possess a fair understanding of rectangular coordinates and of the graphing of elementary algebraic and transcendental functions. Graphic methods are used extensively as a labor-saving device in solving problems and in outlining theory.

PHILLIPS, HENRY BAYARD

Analytical geometry and calculus. Cambridge, Mass.: Addison-Wesley Press, 1942. 484 p. illus. 23 cm. \$5.00. 335

Contents: Limits and continuity. Derivative and differential. Integration and summation. Algebraic equations and graphs. Determinants. Trigonometric functions. Exponential and logarithmic functions. Parametric equations. Polar coordinates. Vectors. Formulas and methods of integration. Further applications of integration. Series with real terms. Complex numbers. Functions of a complex variable. Space coordinates and vectors. Partial differentiation. Multiple integration. Index. Answers to problems.

Note: Intended as an introductory text for students of science and engineering, this book combines the material usually treated in separate volumes of analytic geometry and calculus in such a manner as to make their interdependence more evident while shortening the usual two courses into one. The notion of the differential and the integral is introduced early in the text and is employed in some of the theory of the conic sections and trigonometric functions.

SISAM, CHARLES HERSCHEL

Analytic geometry. New York: Henry Holt and Company, 1936. 310 p. illus. 20 cm. \$2.20. 336

Contents: Plane analytic geometry: Coordinates and graphs. Fundamental definitions and theorems. The line. The circle. The conic sections. Transformation of coordinates. The general equation of the second degree. Higher plane curves. Parametric equations. Curves in polar coordinates. Tangents, normals, diameters, poles, and polars. Empirical equations. Solid analytic geometry: Fundamental definitions and theorems. Planes and lines. Types of surfaces and curves. Tables. Answers. Index.

Note: Primarily intended for an introductory college course of three semester hours a week but sufficient material for a five-hour course is included. A number of devices helpful in the drawing of graphs have been emphasized.

SMITH, EDWARD STAPLES, AND OTHERS

Analytic geometry, by Edward S. Smith, Meyer Salkover, and Howard K. Justice. New York: John Wiley & Sons, Inc., 1943. 298 p. illus. 23 cm. \$2.50. 337

Contents: Coordinates. Locus, equations, graph. The straight line. Conic sections. The circle. The parabola. The ellipse. The hyperbola. Transformation of coordinates. The general equation of the second degree. Tangents and normals. Higher plane curves. Polar coordinates. Parametric equations. Empirical equations. Cartesian coordinates in space. Space loci. The plane. The straight line. Surfaces. Appendix. Formulas for reference. Tables. Answers. Index.

Note: This textbook aims to give the student explanations of the topics commonly taught in analytic geometry in order to fit him for further studies in mathematics, science, and engineering. The work is so planned that certain portions may be omitted at the discretion of the instructor who wishes to shorten the course. The authors claim innovation in the conventions adopted in connection with the normal form of the equation of a straight line, the consideration of excluded values corresponding to points of discontinuity in curve tracing, and the distinction between projection and component.

STEEN, FREDERICK HENRY, AND DONALD H. BALLOU

Analytic geometry. Boston: Ginn and Company, 1943. 215 p. illus. 23 cm. \$2.40. 338

Contents: Plane analytic geometry: Introduction. Curves and equations. The straight line. The circle. The parabola. The ellipse and the hyperbola. Rotation of axes. Higher plane curves. Parametric equations. Polar coordinates. Solid analytic geometry: Coordinates in space. The plane. The straight line. Surfaces. Index. Answers.

Note: This college text embodies a new treatment of the problem of finding the equation of a given locus which is both rigorous and less difficult for the student. Another new feature is the use of oral exercises which are helpful for periodic review as well as for drill work.

WILSON, WALLACE ALVIN, AND J. I. TRACEY

Analytic geometry. Alternate edition. Boston: D. C. Heath and Company, 1937. 314 p. illus. 20 cm. \$2.20. 338a

Contents: Cartesian coordinates. Curves and equations. The straight line. The circle. The parabola. The ellipse. The hyperbola. Transformation of coordinates and simplification of equations. Polar coordinates. Higher plane curves. Tangents and normals. Graphs of functions and empirical equations. Solid analytic geometry. Answers.

Note: The problem lists in the earlier (1925) edition of this work have been revised by alternating numerical and other data and by adding some entirely new problems. The text has not been materially altered, the principal changes being the addition of sections on cylindrical and spherical coordinates and space curves.

WOODS, ROSCOE

Analytic geometry. New York: The Macmillan Company, 1939. 294 p. illus. 22 cm. \$2.25. 339

Contents: Plane analytic geometry: Fundamental concepts and formulas. The line. The circle. The parabola. The ellipse. The hyperbola. Transformation of coördinates. Geometric properties of a locus. Polar coördinates. Parametric equations. Simple geometric properties and constructions of conics. The second degree equations in rectangular coördinates. Solid analytic geometry: Fundamental concepts and formulas. The plane and the line. Surfaces and curves. Answers to odd-numbered exercises. Index.

Note: The author presents in the first ten chapters all the material needed for the usual short course in analytic geometry. The last five chapters provide material for the longer courses, and the last three chapters give a thorough introduction to solid analytics and the concepts needed in the study of calculus. A special feature of this part of the text is the excellent representation of the quadric surfaces by means of photographs of wire models instead of the customary drawings.

YOUNG, JOHN WESLEY, AND OTHERS

Analytic geometry, by John Wesley Young, Tomlinson Fort, and Frank M. Morgan. Boston: Houghton Mifflin Company, 1936. 347 p. illus. 20 cm. \$2.50. 340

Contents: Introduction. The point. Equation of a locus; locus of an equation. The straight line. The circle. Conics. Tangents. Transformation of coordinates. Other loci. Polar coordinates. Parametric equations. Solid analytic geometry. The plane. The straight line. Quadric surfaces. Elements of calculus. Derivatives. Applications of the derivative. Answers. Index.

Note: Designed to meet the requirements of the course in freshman analytic geometry as given in a liberal arts college or engineering school. A short chapter is included on the elements of calculus.

Topology

HUREWICZ, WITOLD, AND HENRY WALLMAN

Dimension theory. Princeton: Princeton University Press, 1941. 165 p. 23 cm. (Princeton mathematical series. . . 4) \$3.00. 341

Contents: Introduction. Dimension 0. Dimension n . Dimension of Euclidean spaces. Covering and imbedding theorems. Mappings in spheres and applications. Dimension and measure. Homology and dimension. Appendix: Non-separable metric spaces. Index.

Note: In this book it has been the aim of the authors to give a connected and simple account of the most essential parts of dimension theory. Only those topics were chosen which are of interest to the general worker in advanced mathematics as well as the specialist in topology. Since the appearance of Karl Menger's *Dimensionstheorie* in 1928, there have occurred important advances in the theory, both in content and method. These advances justify a new treatment, and in the present book emphasis has been laid on the modern techniques of function spaces and mappings in spheres.

LEFSCHETZ, SOLOMON

Algebraic topology. New York: American Mathematical Society, 1942. 389 p. 26 cm. (American Mathematical Society. Colloquium publications. Vol. xxvii) \$6.00. 342

Contents: Introduction to general topology. Additive groups. Complexes. Complexes: products. Transformations. Subdivision. Complexes: multiplications and intersections. Fixed elements. Manifolds. Nets of complexes. Homology theory of topological spaces. Topology of polyhedra and related questions. Appendixes: On homology groups of infinite complexes and compacta, by Samuel Eilenberg and Saunders MacLane. Fixed points at periodic transformations, by P. A. Smith. Bibliography. Indexes.

Note: This volume is intended as a modernized version of the author's *Topology*, New York: The American Mathematical Society, 1930, out of print for some time. In line with recent progress the foundations have grown from three pages to two chapters and an extensive algebraic theory of complexes has largely displaced manifolds. The algebraic technique thus made available is utilized first to unify the homology theories of topological spaces and then also in connection with the applications to polyhedra and related questions. The book concludes with appendixes by Eilenberg-MacLane on their recent results on infinite complexes, and by Paul Smith on his theory of fixed points of periodic transformations.

LEFSCHETZ, SOLOMON

Topics in topology. Princeton, N.J.: Princeton University Press, 1942. 137 p. 22 cm. (Annals of mathematics studies. No. 10) Paper, \$2.00. 343

Contents: Polytopes. Singular complexes. Mapping and imbedding theorems. Retraction. Local connectedness and related topics. Special bibliography. General bibliography. Index.

Note: This monograph has been planned as a companion volume to Lefschetz's *Algebraic topology*, New York, 1942 (see above), the topics dealt with in both texts having for common denominator the relations between polytopes and general topology. The second chapter of the present work completes in certain important points the treatment of singular elements given in the volume referred to. In addition to a supplementary bibliography of general works, there is also given a fairly comprehensive bibliography on locally connected spaces and retraction, containing 68 references, mainly foreign.

MOORE, ROBERT LEE

Foundations of point set theory. New York: American Mathematical Society, 1932. 486 p. illus. 23 cm. (American Mathematical Society. Colloquium publications. Vol. xiii) \$6.00. 344

Contents: Consequences of axioms 0 and 1. Consequences of axioms 1 and 2. Consequences of axioms 1, 2, 3 and 4. Consequences of axioms 1—5. Upper semi-continuous collections. Consequences of axioms 1, 2, 4, 5₁, 5₂, 6 and 7. Concerning topological equivalences and the introduction of distance. Appendix. Bibliography. Index.

Note: In this volume the author presents a self-contained treatment of the foundations of continuity, or point-set theoretic, analysis situs. The work is based on a series of six axioms in terms of the undefined notions *point* and *region*. All other notions are defined in terms of point and region. It is shown that on the basis of the six axioms it is possible to prove a very considerable portion of the well-known topological properties of the plane. The author has also formulated an additional set of axioms which have the property that every compact set which satisfies all of them is topologically equivalent to a sphere while every non-compact one is topologically equivalent to a plane.

TUKEY, JOHN W.

Convergence and uniformity in topology. Princeton, N.J.: Princeton University Press, 1940. 90 p. 22 cm. (Annals of mathematics studies. No. 2) Paper, \$1.50. 345

Contents: General usage of the alphabets. Special usage of the alphabets. Usage of general symbols. Ordering. Direction. Convergence. Compactness. Normality. Struts. Function-spaces. Examples. Discussion. Bibliography. Index.

Note: This monograph gives a convenient, systematic, and natural treatment of some of the fundamentals of topology with special reference to its use as a tool of general application to other branches of mathematics as well as its purely theoretical considerations. The author tries to show that theoretically and practically convergence is a notion of central importance in topology. Some of the results set forth are new, and a number of old results are restated with new proofs. The bibliography contains 17 references.

WHYBURN, GORDON THOMAS

Analytic topology. New York: The American Mathematical Society, 1942. 278 p. 26 cm. (American Mathematical Society. Colloquium publications. Vol. xxviii) \$4.75. 346

Contents: Introductory topology. Continuous transformations. Junction properties of locally connected sets. Cut points. Non-separated cuttings. Cyclic element theory. Special types of continua. Plane continua. Semi-continuous decompositions and continuous transformations. General properties. Factorization. Applications of monotone and non-alternating transformations. Interior transformations. Existence theorems. Mappings onto the circle. Periodicity. Fixed points. Bibliography. Index.

Note: This book has as its principal object the development of various phases of topology by methods in which continuous transformations play the essential role. Results on monotone, non-alternating, interior, and periodic mappings are particularly stressed. Set-theoretic topology is built up from a system of axioms and the structure of locally connected and semi-locally connected continua is thoroughly studied in order to prepare the non-topological reader for the applications of transformations to these spaces which are given in the later sections of the book. A large part of the material included represents recent developments in the field and new results obtained by the author are presented.

WILDER, RAYMOND L., AND WILLIAM L. AYRES, EDITORS

Lectures in topology; the University of Michigan conference of 1940. Ann Arbor: The University of Michigan Press, 1941. 316 p. illus. 24 cm. \$3.00. 347

Contents (abridged): Abstract complexes, by Solomon Lefschetz. Uniform local connectedness, by R. L. Wilder. Regular cycles of compact metric spaces, by N. E. Steenrod. Extension and classification of continuous mappings, by Samuel Eilenberg. On the topology of differentiable manifolds, by Hassler Whitney. Triangulated manifolds and differential manifolds, by Stewart S. Cairns. Periodic and nearly periodic transformations, by P. A. Smith. Transformation groups, by Leo Zippin. Extensions of homeomorphisms on the sphere, by S. MacLane and V. W. Adikisson. Role of local separating points in certain problems of continuum structure, by O. G. Harrold, Jr. Uniformity in topological space, by L. W. Cohen. On the reduction of topological functions, by E. W. Chittenden.

Note: A collection of twenty-one papers presented at the Topology Conference held at the University of Michigan in 1940. The twelve principal lectures listed above are presented in full and brief summaries are given of the others. Bibliographies are included with each paper.

Differential Geometry

BUSEMANN, HERBERT

Metric methods in Finsler spaces and in the foundations of geometry. Princeton, N.J.: Princeton University Press, 1942. 242 p. illus. 22

cm. (Annals of mathematics studies. No. 8)
Paper, \$3.00. 348

Contents: Metric spaces with geodesics. Metric conditions for Finsler spaces. Properties of general S.L. spaces. Spaces with convex spheres. Motions. Literature. Index.

Note: This monograph treats some of the many problems which arise when one attempts to develop geometry with the geodesic as basic concept. The problems studied fall essentially under four topics which may be listed roughly as Finsler spaces, parallels, convexity of spheres, and motions. A number of unsolved problems in this field are also formulated in the text. The selected bibliography contains 40 references to the world literature.

EISENHART, LUTHER PFAHLER

An introduction to differential geometry, with use of the tensor calculus. Princeton: Princeton University Press, 1940. 304 p. illus. 23 cm. (Princeton mathematical series. 3) \$3.50. 349

Contents: Curves in space. Transformation of coordinates. Tensor calculus. Intrinsic geometry of a surface. Surfaces in space. Bibliography. Index.

Note: In this book for advanced students of mathematics, the tensor calculus of Euclidean 3-space is developed and then generalized so as to apply to a Riemannian space of any number of dimensions. The tensor calculus as here developed is applied to the study of differential geometry of surfaces in 3-space. With a knowledge of the methods used in this book and the subjects treated, a student will be prepared for work in the theory of relativity and for the study of Riemannian geometry and its generalizations.

GRAUSTEIN, WILLIAM CASPAR

Differential geometry. New York: The Macmillan Company, 1935. 230 p. illus. 22 cm. \$3.75. 350

Contents: Introduction. Space curves. Curves and surfaces associated with a space curve. Fundamentals of the theory of surfaces. Curvature. Important systems of curves. The fundamental theorem. Geodesic curvature. Geodesics. Mapping of surfaces. Absolute geometry of a surface. Surface of special type. Index.

Note: An account of the fundamentals of metric differential geometry of curves and surfaces in a Euclidean space of three dimensions, expressed in terms of vector notation. Intended for advanced students with a working knowledge of solid analytic geometry and the calculus who are specializing in mathematics or physics. Differential equations are used rather frequently in explaining theory. The fundamental properties of curves and surfaces are discussed, together with the mapping of surfaces, the absolute geometry on a surface, and an introduction to Riemannian geometry and its generalizations.

LANE, ERNEST PRESTON

Metric differential geometry of curves and surfaces. Chicago, Ill.: The University of Chicago Press, 1940. 216 p. illus. 23 cm. \$3.00. 351

Contents (abridged): Curves. The moving trihedron. Surfaces. Curves on surfaces. Curvature. Transformation of surfaces.

Note: An exposition of the fundamentals of the metric differential geometry of curves and surfaces in ordinary three-dimensional space. The treatment is elementary, since the book is designed for beginners in the subject. Vectors are not used. The definitions of those configurations which admit of projective definitions are stated in projective form and, whenever possible, definitions are stated in such a way as to be valid in hyperspace as well as in ordinary space. This manner of approach smooths the way for those readers who go on to study projective and hyperspatial geometrics.

LANE, ERNEST PRESTON

Projective differential geometry of curves and surfaces. Chicago: The University of Chicago Press, 1932. 321 p. illus. 25 cm. (The University of Chicago science series) \$4.00. 352

Contents: Curves. Ruled surfaces. Surfaces in ordinary space. Conjugate nets. Transformations of surfaces. Metric and affine applications. Surfaces and varieties. Miscellaneous topics. Bibliography. Index.

Note: An exposition of researches carried out by American and European geometers mostly since 1900. It aims to coordinate the

studies of the American and Italian schools, and is the first book in English on the subject since E. J. Wilczynski's original treatise, published in 1906, which is credited with being the foundation of the science of projective differential geometry. The present work is intended for beginners in this field as well as for advanced reference. The bibliography contains 83 references to the world literature arranged in chronological order.

LANE, ERNEST PRESTON

A treatise on projective differential geometry. Chicago: The University of Chicago Press, 1942. 466 p. 24 cm. \$6.00. 353

Contents (abridged): Curves in hyperspace. Plane curves. Space curves. Surfaces. Surfaces in ordinary space. Conjugate nets in hyperspace. Conjugate nets in ordinary space. Plane nets. Transformations of surfaces. Surfaces and varieties in hyperspace. Bibliography. Index.

Note: This book is a sequel to the author's *Projective differential geometry of curves and surfaces*, described above. That portion of the material of the earlier volume which is included here is completely reorganized. Some of the subjects discussed in the earlier volume are more amply treated here. Some portions of the theory which were existent at the time of publication of the first book but were not included at all or were only mentioned in passing are rather extensively treated here, as, for example, periodic sequences of Laplace.

SOHON, FREDERICK WYATT

The stereographic projection. Brooklyn, N.Y.: Chemical Publishing Co., Inc., 1941. 210 p. illus. 22 cm. U.S., \$4.00; foreign countries, \$4.40. 354

Contents: The projection of points. The projection of circles. The projection of angles. The projection of meridians and parallels. The projection of symmetrical configurations. The projection of the spheroid. The seismologist's problem. Appendix: Protractor constructions. Auxiliary tables.

Note: A study of the development and mathematical properties of the stereographic projection or method of representing the points and circles on the surface of a sphere as points, circles, and straight lines on a plane. The stereographic projection is of interest to the cartographer as a matter of course, but it is also important to the student of the complex variable, exemplifies important relations in differential geometry, solves certain problems in hydrodynamics, and is a practical tool in the hands of the crystallographer and the seismologist. The present work defines and illustrates certain propositions of the projection that are now well known and which increase considerably the practical value of the projection. Applications to the complex variable, astronomy, hydrodynamics, and seismology are included, but applications to crystallography are omitted. The appendix contains the Weston-Woodstock table giving the primitive azimuth, primitive zenith distance and its supplement as computed for all the seismological stations of the International Summary.

Statistical Methods

AMERICAN SOCIETY FOR TESTING MATERIALS

1933. A.S.T.M. manual on presentation of data, including Supplement A: presenting \pm limits of uncertainty of an observed average, Supplement B: "control chart" method of analysis and presentation of data, tables of squares and square roots. Philadelphia: American Society for Testing Materials, 1937. 73 p. illus. 22 cm. \$0.85. 355

Contents: Introduction. Original data. Grouped frequency distributions. Useful functions of a frequency distribution. Methods of computation. Amount of information contained in relative frequency, average, standard deviation and skewness. Essential information. Comments on various methods used in presenting data. Presentation of relevant information. Conclusions. Nomenclature. Supplement. Tables.

Note: This manual discusses the applications of the statistical method to the problem of condensing the information contained in a set of observations and presenting the essential information in a concise form more readily interpretable than the unorganized mass of original data. Attention is directed to the measurable characteristics of materials and manufactured products.

BATEN, WILLIAM DOWELL

Elementary mathematical statistics. New York: John Wiley and Sons, Inc., 1938. 330 p. illus. 22 cm. \$3.00. 356

Contents: Summations, charts and graphs. Statistical averages. Measurements of dispersion. The normal curve. Skewness and kurtosis. Permutations, combinations and probability. Bernoulli distribution. Index numbers. Observational equations. Correlation coefficient. Sampling. Non-linear regression. The analysis of time series. Analysis of variance. Standard errors of certain statistics. Tables. Index.

Note: A college textbook written primarily for students interested in statistics who have not studied differential and integral calculus. It attempts to develop formulas and fundamental relations by the use of very simple algebra, trigonometry, and analytical geometry. Intended for those interested in business and economic statistics and in sociological and psychological research. Numerous problems, with answers, are given and there are tables of five-place logarithms, integrated curve areas, squares, roots, and reciprocals.

BUROS, OSCAR KRISEN, EDITOR

Research and statistical methodology books and reviews of 1933-1938. New Brunswick, N.J.: Rutgers University Press, 1938. 100 p. 23 cm. \$1.25. 356a

Note: An annotated bibliography in alphabetical order by author of practically all the research and statistical methodology books and monographs published between January 1, 1933 and November 15, 1938 and written in the English language. Since the editor's special field of interest is in education and psychology, these fields are somewhat better represented than those such as agriculture and medicine. For each book full bibliographic information is given including both American and English prices and publishers. The most critical portions of the reviews which appeared in journals have been excerpted and printed after each entry, giving each reviewer's name and title of publications. There is a classified index and an index of titles. Later reviews of some but not all of the books listed in this volume are given in *The second yearbook of research and statistical methodology books and reviews*, Highland Park, N.J., 1941, described below.

BUROS, OSCAR KRISEN, EDITOR

The second yearbook of research and statistical methodology books and reviews. Arlington, Va.: The Gryphon Press, 1941. 383 p. 27 cm. \$5.00. 356b

Contents: Books and reviews. Periodical directory and index. Publishers' directory and index. Index of titles. Index of names. Classified index to books.

Note: The excerpts presented in this volume are longer and more informative than those given in the earlier work by the same editor, *Research and statistical methodology books and reviews of 1933-1938*, New Brunswick, 1938, described above. About one third of the present volume is devoted to new reviews of books listed in the earlier work. The second yearbook offers a total of 1,652 review excerpts from 283 journals covering 346 books and monographs published between 1933 and 1941. Classes of books poorly represented in the first volume such as mathematical economics, population studies, and general histories of science are better represented in this volume. Books on statistical methods, scientific method, social relations of science, collective biographies of scientists, and books on research methodology in specific fields make up the bulk of the compilation. Books on microscopy and the philosophy of science have been excluded.

CAMP, BURTON HOWARD

The mathematical part of elementary statistics; a textbook for college students. Boston: D. C. Heath and Company, 1931. 409 p. illus. 20 cm. \$3.75. 357

Contents: Part I, Graphs and notations: Moments. Cumulative frequency. Grouping errors. Small total frequencies. The normal law. Applications. Time series—trend and radio charts. Correlation, the surface and the coefficient. Regression, interpretation of r . Normal surface. Correlation of non-measurable characters. Part II, Probability: Approximations to the point binomial. Fre-

quency curves. Sampling correlation, further topics. Multiple correlation. Finite differences. Part III, Four-place tables of probability functions.

Note: Intended primarily for second-year college students, this text sets forth the mathematical rudiments common to the statistical methods used by investigators in widely different fields, such as economics, biology, physics, and astronomy. Two principles followed throughout are: that every idea presented must be illustrated immediately with a numerical example, followed by short exercises for teaching the method; and that tacit hypotheses underlying the various methods shall be exposed. A knowledge of analytical geometry, but no calculus, is necessary to make use of the book.

CHURCH, DONALD E.

Speed methods of statistics; for use in business. New York: The Ronald Press Company, 1940. 97 p. illus. 22 cm. \$3.00. 358

Contents: Introduction. Interpretation of charts. Ratios. Scale adjustments. Trends. Seasonals. Cycles. Simple relationships. Multiple relationships. General comments regarding computation.

Note: Simple methods are presented which reduce time and cost of analysis of statistical data, and avoid the mathematical difficulties usually involved in customary methods. For readers who are not trained statisticians, terms and statistical measures are explained. The fundamental theory follows orthodox statistical assumptions, particularly in graphic correlation and seasonal calculations. Use is made of a simple, easily-made sliding device in conjunction with an illuminated glass by which the computations are made visually, without resort to intermediate tables or calculations.

COOKE, DENNIS HARGROVE

Minimum essentials of statistics, as applied to education and psychology. New York: The Macmillan Company, 1936. 271 p. 22 cm. \$3.25. 359

Contents: Organization and classification of data. Measures of central tendency. Measures of variability. Measures of relative position. The normal probability and other frequency curves. Measures of reliability. Measures of relationship: correlation. Measures of relationship related to tests. Measures of relationship: partial and multiple correlation. Measures of prognosis. Appendixes: Some textbooks on statistical and graphical methods (followed by table of page references). Tables for use in questions and exercises. Calculating tables. Answers to questions and exercises. Index.

Note: Designed for the non-mathematical student, this text requires only a working knowledge of algebra. It is intended primarily for students of education and psychology, and for reference use by school officials and teachers in service.

CROXTON, FREDERICK EMORY, AND DUDLEY J. COWDEN.

Applied general statistics. New York: Prentice-Hall, Inc., 1939. 944 p. illus. 23 cm. \$5.35. 360

Contents: Introduction. Statistical data. Statistical tables. Graphic presentation—simple curves. Graphic presentation—the semi-logarithmic or ratio chart. Graphic presentation—other types of charts. Ratios and percentages. The frequency distribution. Measures of central tendency. Dispersion, skewness, and kurtosis. Describing a frequency distribution by a fitted curve. Reliability and significance of statistical measures: Arithmetic means. Percentages, standard deviations, variances, and the criterion of likelihood. The problem of time series. Analysis of time series—secular trend. Other trend types. Periodic movements. Types of seasonal movements. Cyclical movements. Fundamentals in index number construction. Index number theory and practice. Simple correlation. Non-linear correlation. Multiple and partial correlation. Correlation of time series and forecasting. Appendixes. Index.

Note: An elementary treatment of general statistics, intended for students and readers interested in the understanding of statistical methods which have particular application to the social sciences. The illustrative material has been drawn mainly from the fields of economics, sociology, and business. Enough additional material is included to provide a more advanced or more specialized course beyond the introductory level. A large number of tables, charts, and other illustrative matter is provided, and there are references at the end of each chapter. In addition, the appendix contains numerous mathematical formulas, tables,

proofs, and a glossary of symbols. No mathematical knowledge beyond elementary algebra is required. The first author has prepared for use in conjunction with this text *Workbook in applied general statistics*, revised edition, New York, Prentice-Hall, Inc., 1941, 181 p., \$2.80.

DAVENPORT, CHARLES BENEDICT, AND MERLE P. EKAS

Statistical methods in biology, medicine and psychology. Fourth edition completely revised. New York: John Wiley & Sons, Inc., 1936. 216 p. illus. 18 cm. \$2.75. 361

Contents: On variation and its measurement. On the seriation and plotting of data and the frequency polygon. The classes of frequency polygon. Analysis of variance. Correlated variability and measures of relationship. Heredity. Special topics. Tables. Index.

Note: A useful desk book, handbook, or pocket handbook. The method of computing these statistics is shown, together with illustrations of some of the machines which make computation easy and rapid. The fourth edition offers revisions made in the light of developments throughout the field. The book now includes treatments of such methods as R. A. Fisher's analysis of variance and extension of the theory of small samples; and the expansion of the theory of correlation to the inclusion of multiple and partial correlations. Since some of the applications of statistics to economics include methods of general interest, they have been included.

DAVIES, GEORGE REGINALD, AND WALTER F. CROWDER

Methods of statistical analysis in the social sciences. New York: John Wiley & Sons, Inc., 1933. 355 p. illus. 23 cm. \$3.25. 362

Contents: Statistical methods in social science. Gathering and presenting data. Averages. Dispersion. Index numbers. Time series. Trends. Time series analysis. Correlation. Probability and frequency curves. Appendix. Bibliography. Index.

Note: A well-balanced and practical treatment of statistics with special reference to applications to the fields of economics, sociology, and political science. Attention is concentrated upon the methods and logic of statistical analysis. The book offers a concise treatment of the usual methods of presenting data in graphic form. As a special feature, each chapter is divided into two parts, giving first the more elementary and basic processes, and then separately the more specialized and complex treatment. Practical exercises are included.

DEMING, WILLIAM EDWARDS

Statistical adjustment of data. New York: John Wiley & Sons, Inc., 1943. 261 p. illus. 21 cm. \$3.50. 363

Contents (abridged): On the meaning of adjustment. Simple illustrations of curve fitting. The propagation of error. The general problem in least squares. Geometric conditions. Systematic computation for geometric conditions. Adjusting sample frequencies to expected marginal totals. Curve fitting in more complicated circumstances. Systematic computations for fitting curves by least squares. Exercise on fitting various functions. Four examples in curve fitting. Appendix. Index.

Note: A text and reference book for graduate and undergraduate engineering students, which deals mainly with scattered portions of the subject that may be difficult to find elsewhere. The book is intended as a supplement to larger texts on statistical adjustment of data and several topics relating to the theory of least squares and to the theories of Hotelling, Wald, and Eisenhart have been intentionally omitted. The book presents some basic statistical concepts and those methods of arriving at figures which can be used for a given application. Skeleton table forms for calculation are provided. A knowledge of differential calculus is helpful but not a necessary prerequisite.

EZEKIEL, MORDECAI

Methods of correlation analysis. Second edition. New York: John Wiley & Sons, Inc., 1941. 531 p. illus. 23 cm. \$5.00. 364

Contents (abridged): Measuring the variability of a statistical series. Judging the reliability of statistical results. The relation between two variables, and the idea of function. Determining the way one variable changes when another changes: (1) by the use of averages. Determining the way one variable changes with another: (2) according to the straight-line function. Determining the way one variable changes when another changes: (3) for curvilinear functions. Measuring accuracy of estimate and degree of correlation. Practical methods for working two-variable correlation problems. Three measures of correlation: the meaning and use for each. Determining the way one variable changes when two or more variables change: (1) by successive elimination. Determining the way one variable changes when two or more other variables change: (2) by cross-classification and averages. Determining the way one variable changes when two or more other variables change: (3) by using a linear regression equation. Measuring accuracy of estimate and degree of correlation for linear multiple correlation. Determining the way one variable changes when two or more other variables change: (4) using curvilinear regressions.

Note: In this second edition special emphasis is given to modern developments in the theories of sampling and the shortcut method of correlation. The main changes are not those of general techniques, but rather those of interpretation of the meaning of standard errors, the application of logical limitations to the flexibility of graphic curves, the inclusion of the newer and more rapid methods of calculation, and the presentation of newly developed methods of estimating the reliability of an individual estimate or forecast.

FREEMAN, HAROLD ADOLPH

Industrial statistics: statistical technique applied to problems in industrial research and quality control. New York: John Wiley & Sons, Inc., 1942. 178 p. illus. 23 cm. \$2.50. 365

Contents (abridged): The difference of two means. Difference among several means. Relationship among variables. Systematic quality control. Sampling and the risks of producers and buyers. References. Tables. Index.

Note: A text designed originally for courses in industrial statistics given at Massachusetts Institute of Technology, giving examples of the uses of elementary statistical methods in the design and analysis of experiments carried out in industrial plants and scientific laboratories. It also deals with several of the statistical features of the problem of establishing a systematic program through which the quality of industrial output can be studied and controlled. Intended for engineering students, experimenters, and production men who are reasonably familiar with the industrial or experimental process at hand and who have a working knowledge of first-year college mathematics. Each chapter is divided into two parts, the first presenting the problem, examples, method, and results, while the second gives a mathematical exposition of theory. There is a list of 60 references and a large number of useful tables.

GARRETT, HENRY EDWARD

Statistics in psychology and education. With an introduction by R. S. Woodworth. Second edition. New York: Longmans, Green and Company, 1937. 493 p. illus. 21 cm. (Longmans' psychology series) \$3.50. 366

Contents: The frequency distribution. Measures of central tendency. Measures of variability. Graphic methods and percentiles. The normal probability curve. Applications of the normal probability curve. Comparable measures, combining test scores and distributions. Sampling and reliability. Linear correlation. Regression and prediction. The reliability and validity of test scores. The interpretation of the coefficient of correlation. Further methods of correlation. Partial and multiple correlation. References. Reference tables. Tables of squares and square roots of the numbers from 1 to 1000. Index.

Note: An introductory text for college courses in the measurement of mental and social traits and related factors of psychology and education, intended for students specializing in these two fields rather than for students of applied general statistics. A knowledge of elementary algebra constitutes the extent of the mathematics required. The second edition includes a new treatment of percentiles, comparable scores, reliability and validity of tests, and additional material on certain advances in the methods of application made during the decade 1926-36. References are given in footnotes and there is a supplementary list of 27 books included.

✓ COULDEN, CYRIL HAROLD

Methods of statistical analysis. New York: John Wiley & Sons, Inc., 1939. 277 p. illus. 23 cm. \$3.50. 367

Contents: Introduction. Calculation of the arithmetic mean and standard deviation; frequency tables and their preparation. Theoretical frequency distributions. Tests of significance with small samples. The design of simple experiments. Linear regression. Correlation. Partial and multiple regression and correlation. The Chi-square test. Tests of goodness of fit and independence with small samples. The analysis of variance. The field plot test. The analysis of variance applied to linear regression formulae. Non-linear regression. The analysis of covariance. Miscellaneous applications. Index.

Note: This book is intended for research workers in agriculture and biology who have already acquired some knowledge of the principles of statistics and desire further training in the application of these principles. The first half of the book reviews methods of statistical analysis; the second half is given over to problems of the magnitude of those encountered in actual practice. The data are drawn from many different fields of research. Numerous references to the literature and many exercises are given.

✓ GUILFORD, JOY PAUL

Fundamental statistics in psychology and education. New York: McGraw-Hill Book Company, Inc., 1942. 333 p. illus. 23 cm. (McGraw-Hill publications in psychology; J. F. Dashiell, consulting editor) \$3.25. 368

Contents: Measurement in psychology and education. Frequency distributions. Measures of central tendency. Measures of variability. Cumulative distributions and norms. The normal distribution curve. Some applications of the normal curve. The reliability and significance of statistics. Testing hypotheses. Prediction and errors of prediction. Correlation methods. Other correlation methods. Multiple and partial correlation. Reliability and validity of tests. Appendix. Indexes.

Note: This textbook on statistical method attempts to provide the student with a simple introduction to the field of psychological and educational statistics. No previous knowledge of statistics is assumed and more fundamental and useful procedures are outlined step by step and illustrated with practical applications. Among the features of the book are new graphical devices for representing data, the treatment of centile forms and of profiles based on centiles, and a new C-scale procedure for normalizing and standardizing scores. Small-sample statistics are given extensive application, and considerable attention is given to enumeration data and the statistics of attributes. Numerical and statistical tables are given in the appendix.

✓ HALL, MARGUERITE FRANKLYN

Public health statistics. New York: Paul B. Hoeber, Inc., 1942. 408 p. illus. 24 cm. \$5.00. 369

Contents: Introduction and orientation. General principles of computation and handling of mass data. Tabular presentation. Graphical presentation. Population data. Estimates of populations. Standard millions. Vital events. Rates. Mortality rates. Vital statistics other than mortality. Variation and trends in rates. Ratios and index numbers. Construction of a life table. Mass data: preliminary definitions. Measures of central tendency. Measures of variability. Measures of relationship and trend. Theory of probability; point binomial; normal. Measures of reliability. Prerequisites to the application of statistical methods. Appendixes. Index.

Note: This book is intended for use as a text for a basic course in public health statistics and as a reference book in health departments. It lays the groundwork for an understanding of the collection, organization, and interpretation of data pertinent to public health and vital statistics. Emphasis is placed upon the interpretation of statistical data, to the proper application of techniques, and to a critical attitude of statistical materials. Intended for adults who have little or no training in college mathematics but who are familiar with the problems of the field. There are numerous examples and applications worked out in detail.

HARPER, FLOYD HENRY

Elements of practical statistics. New York: The Macmillan Company, 1930. 324 p. illus. 20 cm. \$2.75. 370

Contents: Sampling. Tabulation. Frequency distributions. Graphic presentation. The arithmetic mean. The mode. The median. Variability and dispersion. Probability and error. Long-time trends. Linear and nonlinear relationships. Correlation. Regression. Estimates and error. Index numbers. Appendixes. Index.

Note: An elementary treatment of the subject for students and laymen without training in advanced mathematics. Emphasis is placed upon analysis and the exact meaning of mathematical measurements. There are full though brief explanations of the bases of all calculations and theoretical concepts employed.

HOLZINGER, KARL JOHN, AND HARRY H. HARMAN

Factor analysis; a synthesis of factorial methods. Chicago: The University of Chicago Press, 1941. 417 p. illus. 24 cm. \$5.00. 371

Contents: Part I, Introduction: Basic statistics. Geometric formulation of the factor problem. Determination of the common-factor space. Preferred types of orthogonal solutions. Part II, Direct orthogonal solutions: The bi-factor solution and sampling formulas. The principal-factor solution. The centroid solution. Part III, Derived solutions: orthogonal and oblique: Derived principal-factor solution. Orthogonal transformations and the multiple-factor solution. Oblique solution. Part IV, Estimation of factors and relationships between factors: Estimation of factors. Relationships between factor solutions. Appendixes. Bibliography. Index.

Note: Concerned primarily with the exposition and synthesis of various procedures in factor analysis, this study illustrates with examples from psychology, biometry, and political science. The volume is divided into five major parts: the analytic and geometric foundations are first presented, leading to a small number of factor solutions. Then the theory underlying each of these types of solution is developed. In particular, the methods of Spearman, Holzinger, Hotelling, Kelley, and Thurstone are described. This is followed by a comprehensive treatment of the methods for estimating factors, including the work of Thomson, Ledermann, and Burt. Finally, in the appendixes, detailed steps are given for the calculation of any of the factor solutions described in the text.

KENNEY, JOHN FRANCIS

Mathematics of statistics. New York: D. Van Nostrand Company, Inc., 1939. 2 v. illus. 23 cm. \$4.00. 372

Contents (abridged): Part I, Frequency distributions, graphical representation. Averages. Moments. Measures of dispersion. Types of distributions. Curve fitting. Correlation theory. Review questions and problems. Index. Part II, Probability and its relation to statistical theory. Some useful integrals and functions. General concepts of distribution function of a continuous variable. Joint distributions of two variables. The normal correlation surface. Multiple and partial correlation. Fundamentals of sampling theory with special reference to the mean. Small or exact sampling theory. Distribution. Statistical inference. Review questions and problems. Index.

Note: An elementary text on the subject intended for students of economics, psychology, education, biology, and physics, as well as of pure mathematics. An attempt is made to encourage the student to use symbolism creatively as a language. Throughout the book exercises are inserted to test the student's knowledge of theory and methodology and to develop his powers of analysis. A working knowledge of college algebra is presupposed, plus a certain degree of mathematical maturity and aptitude. Many practical applications to the various sciences are given, together with bibliographic references at the end of each chapter.

KURTZ, ALBERT KENNETH, AND HAROLD A. EDGERTON

Statistical dictionary of terms and symbols. New York: John Wiley & Sons, Inc., 1939. 191 p. 18 cm. \$2.00. 373

Note: The primary purpose of the statistical dictionary is to provide a clear and accurate definition of the various meanings of most of the statistical terms found in modern books and periodicals on statistics. There are complete definitions of about 2100 terms. Clarity is achieved not only by care in the preparation of the definition itself but also by the use of illustrative statements, examples, and references to related terms. Whenever a term has synonyms, all of these other terms that have been used to designate the same statistical concept are listed. Accuracy and au-

thoritativeness were secured by having copies of a preliminary edition of the dictionary issued in mimeograph form and carefully checked by each member of an advisory council composed of 30 statisticians in the fields of biology, business, economics, education, mathematics, and psychology.

LINDQUIST, EVERET FRANKLIN

A first course in statistics; their use and interpretation in education and psychology. Boston: Houghton Mifflin Company, 1938. 226 p. illus. 21 cm. \$2.50. 374

Contents: Introduction. The frequency distribution. Percentiles. Graphical representation of frequency distributions. Measures of central tendency. Measures of variability. The normal curve of distribution. Sampling error theory. Standard measures and methods of combining test scores. Correlation theory. Correlation techniques applied in the evaluation of test materials. Appendix. Index.

Note: This text plus the author's *Study manual for a first course in statistics*, Boston: Houghton Mifflin Company, 1938, 122 p., \$0.80, constitute a method of teaching a first course in statistics for students of education and psychology. The material presented stresses as much as possible the uses and interpretation of statistics, while minimizing as much as possible the mathematical theory of statistics and the mechanics of computation. Only a relatively limited number of techniques are considered, and these are designed particularly to develop in the student a critical attitude toward the use of statistical methods in education and psychology.

PETERS, CHARLES CLINTON, AND WALTER R. VAN VOORHIS

Statistical procedures and their mathematical bases. New York: McGraw-Hill Book Company, Inc., 1940. 516 p. illus. 23 cm. \$4.50. 375

Contents: A little calculus. Measurement of central tendencies. Measurement of variability. The basic formulas of rectilinear correlation. Reliability of statistics. The reliability of differences. Inferring coefficients of correlation for changed conditions. Partial and multiple correlation. Multiple-factor analysis. The normal probability curve. The correlation ratio. Analysis of variance. Further methods of correlation. Chi-square. Curve fitting. The technique of controlled experimentation. Appendix. Index.

Note: Represents an effort to explain the mathematical origins of the most widely used statistical formulas in terms that persons with comparatively little mathematical training can easily follow. Derivations of theorems are given in considerable detail. In order to make calculus available as a tool for those who do not have a command of it, the volume begins with an introductory account of the calculus containing enough material to prepare the reader to follow the subsequent derivations. The work is not intended as a comprehensive treatment of the mathematical bases of statistics but rather to bridge the gap between the elementary courses and the original contributions in monograph form. A feature of the book is the inclusion of many of the statistical techniques advocated by R. A. Fisher which are here synthesized with classical statistics. The appendix contains eight tables of statistical data and there are references after each chapter.

PATERSON, DAVID DOUGLAS

Statistical technique in agricultural research. A simple exposition of practice and procedure in biometry. New York: McGraw-Hill Book Company, Inc., 1939. 263 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences, L. J. Cole, consulting editor) \$3.00. 376

Contents: General principles. Analysis of variance. Goodness of fit and contingency tables. Diagrams. Correlation. Regression. Field experiments. Serial and perennial crop experiments. Recent developments in field experimentation. Selected bibliography. Appendix. Index.

Note: This book is an attempt to meet the demand for a more elementary exposition of the statistical technique than is encountered in the usual statistical textbooks. A detailed analysis of data is offered from a representative series of experiments typical of some of the commoner statistical problems encountered by the average research worker in agricultural problems. No mathematics beyond elementary algebra is required.

RIDER, PAUL REECE

An introduction to modern statistical methods. New York: John Wiley & Sons, Inc., 1939. 220 p. illus. 22 cm. \$2.75. 377

Contents: Frequency distributions. Averages and moments. Regression. Correlation. The binomial and normal distributions. Student's distribution. The chi-square distribution. Analysis of variance. Experimental design. Tables. Index.

Note: Discussion and explanation of the most widely used of the recent methods of statistics, presented in as simple a form as is reasonably possible. It starts with the classical theory and leads up to and explains the newer methods that have been developed principally by R. A. Fisher. Although some knowledge of calculus is needed to get the full import of some of the formulas, it is quite possible to understand the methods employed, and to apply them intelligently without any knowledge of that subject. The applications of the methods explained in the book are illustrated by comparatively simple numerical examples so that the underlying principles are not lost sight of in a maze of arithmetical computations.

SIMON, LESLIE EARL

An engineers' manual of statistical methods. New York: John Wiley & Sons, Inc., 1941. 231 p. illus. 25 cm. \$2.75. 378

Contents: Making sense out of figures. Inspection of a lot by attributes. Inspection of related lots by attributes. Process inspection by attributes. Inspection of a lot by variables. Inspection of related lots by variables. Process inspection by variables. The special case of indeterminate sample size. A method of expressing quality. Sample size. Significant differences. Miscellaneous statistical techniques. Predicting from sample to lot. The incomplete beta-function ratio. Sample quality control system. Specifications and standards of quality. Literature cited. Glossary of symbols. Index.

Note: A summary of certain working parts of the sciences of probability, statistics, and logic, designed for the practical man whose interest is centered in his industrial or engineering work. The principles relating to inspection methods and statistical inference are predicated on recognized standard procedures or on research conducted at the Ballistic Research Laboratory, Aberdeen Proving Ground, in connection with the designing of an inspection procedure for the Army Ordnance. The work is primarily for use in the Ordnance School, Aberdeen Proving Ground, for instructing ordnance officers in the minimum of statistical techniques necessary for their work, but is useful also to professional men in similar fields.

SMITH, JAMES GERALD, AND ACHESON J. DUNCAN

Elementary statistics and applications. New York: McGraw-Hill Book Company, Inc., 1944. 720 p. illus. 21 cm. (Fundamentals of the theory of statistics. Vol. 1) \$4.00. 379

Contents: Part I, Introduction: Statistics in the arts and sciences. Gathering statistics. Sources of statistics. Presentation of statistics. Statistics—a study of variation. Part II, Analysis of frequency distribution: Summarization and comparison. Illustration of frequency-distribution analysis. Part III, The normal frequency curve: Probability. Probability distributions. Probability calculus. Symmetrical binomial distribution and the normal curve. Use of the normal frequency curve in sampling analysis. Part IV, Study of bivariate and multivariate: Simple correlation. Computation of r and other measures of correlation. Nonlinear correlation. Multiple and partial correlation. Analysis of a multivariate frequency distribution illustrated. Normal frequency surface. Part V, Study of dynamic variability: Index numbers. Rational basis of the analysis of time series. Trend analysis. Orthogonal-polynomial trends. Time-series analysis—seasonal variation. Determination of cycle. Part VI, Forecasting: The art of forecasting with statistics. Appendix: Tables. Author index. Subject index.

Note: A thorough and detailed treatment of the fundamentals, designed for a beginning college course. The descriptions of frequency-distribution, correlation, and time-series analysis are first completed in their simplest aspects, with elementary illustrations, enabling the student to visualize basic methods. More complex illustrations of practical application are then given in separate chapters or sections. Mathematical exposition is kept on a level with a practical knowledge of elementary algebra, although the concept of the differential is introduced in the latter third of the book.

SMITH, JOHN HENRY

Tests of significance: what they mean and how to use them. Chicago: The University of Chicago Press, 1939. 90 p. illus. 24 cm. (The Journal of business of the University of Chicago. Vol. XII, number 4, part 2) Paper, \$1.00.

380

Contents: Introduction. Sampling distributions of number of successes. The normal distribution and the problem of inference. The *chi*-square test for sets of means. Tests for sets of means using estimates of variance. Tests for regression coefficients. The analysis of variance and partial correlation ratios. Tests for correlation coefficients. The *chi*-square test of goodness of fit. Conclusion. Appendix. Selected bibliography.

Note: A survey of the common tests of significance, designed to present as simply as possible an organized treatment of the fundamental principles of sampling theory which underlie the proper use of measures of unusualness in support of inferences. Its original features are chiefly concerned with organization, emphasis, and simplification of mathematical derivations. Emphasis is placed upon the importance of *chi*-square, or the sum of squares of a set of sample means, and upon the possible reduction of all cases to the simplest form. Basic sampling distributions are derived for all of the common tests. The use of infinitesimals and the Jacobian determinant are explained and illustrated graphically.

SNEDECOR, GEORGE WADDEL

Statistical methods applied to experiments in agriculture and biology. Third edition. Ames, Ia.: The Iowa State College Press, 1940. 422 p. illus. 23 cm. \$3.75.

381

Contents: Experiments on attributes. An experiment designed to compare measurements of individuals. Sampling from a normally distributed population. An experiment designed to compare two groups. Short cuts and approximations. Linear regression. Correlation. Large sample theory. Enumeration data with multiple degrees of freedom. Experiments involving more than two groups of measurement data. Analysis of variance. Analysis of variance with two criteria of classification. Two varieties in two or more groups, covariance. Multiple regression and covariance. Curvilinear regression. Individual degrees of freedom. Large samples of enumeration data. Binomial and Poisson distributions. Design and analysis of samplings. General index. Index of symbols.

Note: The author endeavors to present statistical methods simply and clearly so that they may be used competently by the scientist whose knowledge of mathematics is limited. The material added in this third edition includes a new chapter dealing with the design and analysis of samplings; also: a test for homogeneity of variance in groups which may have unequal numbers of items; analysis of variance in regression; and transformations of data for tests of significance. The square root, the angle, and the logarithmic transformations are illustrated. By permission of Dr. C. I. Bliss, a complete table of the angle transformation, $\arcsin \sqrt{x}$, is reproduced from the Russian journal, *Plant protection*.

SORENSEN, HERBERT

Statistics for students of psychology and education. New York: McGraw-Hill Book Company, Inc., 1936. 373 p. illus. 23 cm. \$3.50.

382

Contents: Definition and scope of statistics. The present-day need for statistical training. Tabulation of data and graphic presentation. The mean. The median. The mode. Percentiles. Variability. The normal curve, skewness, and kurtosis. Correlation—the relationship of variables. Depiction of correlation by means of graphs or charts. Calculation of the extent of correlation. Regression and prediction. Special forms and methods of correlation. The meaning of the coefficient of correlation. Sampling, chance, and probability of occurrence. Unreliability. The reliability of the differences between means. Correction for attenuation and the coefficient of reliability.

Note: A well-organized text for the course in statistics given to students of education and psychology. Also, it will be found useful for students in other fields of social science who need an orientation to statistical methods.

TINTNER, GERHARD

The variate difference method. Bloomington, Ind.: Principia Press, 1940. 175 p. illus. 25 cm. (Cowles Commission for Research in Economics. Monograph no. 5) \$2.50.

383

Contents: Introduction. History and literature of the variate difference method. Criticism of the variate difference method. Fundamental concepts. The calculation of the variances of the finite difference series. The standard error of the difference between the variances of two consecutive series of finite differences. Criteria for the stability of the variances of the series of finite differences. A test of significance for the stability of variances of the series of finite differences. Reduction of the random variation by Sheppard's smoothing formulae. Correlation. Appendixes: Summary of computations. Mathematical notes. Seasonal variation. Standard errors of some derived statistical series. Alternative methods. Variability of the random variance through time. The normality of the random element. Indexes.

Note: A monograph dealing with the analysis of economic time series and offering a tentative solution of problems involving the random element, intended to provide a foundation for statistical tests of empirical results. The author has also endeavored to give an economic foundation to the statistical procedures involved. The work is of interest to the nonmathematical economist, the economic statistician, and the historian of statistics.

TRELOAR, ALAN EDWARD

Elements of statistical reasoning. New York: John Wiley and Sons, Inc., 1939. 260 p. illus. 23 cm. \$3.25.

384

Contents: Numerical description. The law of frequency distribution. Typical values. The measurement of variation. Moments and distribution characteristics. The normal curve. Bivariate distribution and the coefficient of correlation. Rectilinear regression. Residual variation. Errors of random sampling. Sampling errors of the correlation coefficient. Proportions and probability. The proportions of vital statistics. Sampling errors of proportions. The measurement of frequency discordance. Independence and bivariate tables of frequency. Appendix. Index.

Note: A textbook for graduate and undergraduate science students, presenting a concise course in statistics arranged so as to develop the student's aptitude for logical analysis in quantitative thinking as well as his interest in the cultivation of the statistical approach to scientific problems. To maintain the interest of the non-mathematically trained student and to assist him in visualizing the nature of the problems under analysis, the method of geometric portrayal of situations by means of diagrams is freely employed. Algebraic derivations of a simple nature are then developed and illustrated by applications in certain of the sciences. Exercises have been intentionally omitted.

WALD, ABRAHAM

On the principles of statistical inference. Four lectures delivered at the University of Notre Dame, February, 1941. Notre Dame, Ind.: The University of Notre Dame, 1942. 50 p. illus. 23 cm. (Notre Dame mathematical lectures. No. 1) \$1.00.

385

Contents: Introduction. The Neyman-Pearson theory of testing a statistical hypothesis. R. A. Fisher's theory of estimation. The theory of confidence intervals. Asymptotically most powerful tests and asymptotically shortest confidence intervals. Outline of a general theory of statistical inference. References.

Note: These papers summarize the theories of statistical inference as developed in the last two decades by Fisher, Neyman, Pearson, and Wald, and deal with the problems of testing a hypothesis and with the problem of estimation by a point and by intervals. There are 23 items in the list of references, mostly papers by the three mathematicians mentioned above and by the author.

WAUGH, ALBERT EDMUND

Elements of statistical method. New York: McGraw-Hill Book Company, Inc., 1938. 381 p. illus. 23 cm. \$4.00.

386

Contents: The nature of statistics. The meaning of numbers. The frequency distribution. Measures of central tendency. Measures of dispersion. Probability, the normal curve, and moments. Measures of reliability. Historical data. Simple linear correlation. Simple curvilinear correlation. Multiple correlation. Tabulation and graphic presentation. Collection and analysis of data. Appendixes. Index.

Note: This book is planned for the beginner in the field of statistics who has had no prior knowledge of the subject and no formal knowledge of mathematics higher than a good command of college algebra. The aim is to introduce the student to statistical concepts and nomenclature and to get him to think in statistical terms. No original theory is attempted and many subjects too complex for the beginner have been omitted. The appendix contains a bibliography of 47 additional textbooks which the author has found to be helpful for beginning students.

WILKS, SAMUEL STANLEY

Mathematical statistics. Princeton, N.J.: Princeton University Press, 1943. 284 p. illus. 27 cm. \$3.75. 387

Contents: Introduction. Distribution functions. Some special distributions. Sampling theory. Sampling from a normal population. On the theory of statistical estimation. Tests of statistical hypotheses. Normal regression theory. Applications of normal regression theory to analysis of variance problems. On combinatorial statistical theory. An introduction to multivariate statistical analysis. Literature for supplementary reading. Index.

Note: A treatment of the mathematical theory of statistics with special emphasis on modern developments in the field. The material has been used for several years in a two-semester advanced undergraduate course at Princeton University.

WORTHING, ARCHIE GARFIELD, AND JOSEPH GEFFNER

Treatment of experimental data. New York: John Wiley and Sons, Inc., 1943. 342 p. illus. 23 cm. \$4.50. 388

Contents: Representation of data by tables. Representation of data by graphs. Representation of data by equations. Tabular and graphical differentiation and integration. Fourier series. The normal frequency distribution. Means and precision indexes of unequally weighted measurements. The propagation of precision indexes. The adjustment of conditioned measurements. Least-squares equations representing observed data. Correlation. The analysis of non-harmonic periodic functions. Appendix. Bibliography. Index.

Note: This study of experimental data is neither elementary nor is it so specialized that it is useful only to highly trained workers. It is concerned with training in the methods of organizing and interpreting experimental data. The book begins with a discussion of representation of data by tables, graphs, and equations, pointing out the advantages and disadvantages of each, describing the rules for their proper usage, and illustrating the applications for which each is best suited. There is information on methods of smoothing and tabulating; rules for methods of graphing that tend to show the worth of the data graphed to the greatest extent possible. There is instruction in deriving, in a relatively brief time, an equation to represent observed data which rivals the least-squares method in its reliability. The book contains a moderately extended treatment of precision indexes, including their theory, propagation, and application, among other things, to conditioned measurements.

Mechanics

BINDER, RAYMOND CHARLES

Fluid mechanics. New York: Prentice-Hall, Inc., 1943. 307 p. illus. 23 cm. (Prentice-Hall engineering series; K. D. Wood, editor) \$5.00. 389

Contents: Introduction. Fluid statics. Kinematics of fluid flow. Energy equation for the steady flow of any fluid. Viscosity of internal friction. Dimensional analysis and dynamic similarity. Flow of incompressible fluids in pipes. Fluid measuring instruments. Momentum relations for steady flow. Resistance of immersed bodies. Dynamic lift and propulsion. Dynamics of compressible flow. Flow of compressible viscous fluids in pipes. Flow of liquids in open channels. Lubrication. Pumps. Turbines, fluid cou-

plings, and fluid torque converters. Fluid power and control systems. Mathematical study of fluid motion.

Note: Designed as a basic text for courses in schools of engineering. Valuable also for mechanical, civil, aeronautical, and marine engineers interested in a survey of recent theory and applications of fluid flow.

BRAND, LOUIS

Vectorial mechanics. New York: John Wiley & Sons, Inc., 1930. 544 p. illus. 23 cm. \$5.00. 390

Contents: Vector algebra. Statics, fundamental principles. Statics of a particle. Plane statics. Statics in three dimensions. Vector calculus. Flexible cables. Kinematics of a particle. Kinematics of rectilinear motion. Kinematics of plane motion. Dynamics, fundamental principles. Dynamics of a particle. Dynamics of a system of particles. Dynamics of rigid bodies. Impact. Index.

Note: An introductory textbook for students of engineering and of physics, intended also to serve as a reference work for persons who wish to review mechanics after having completed the college course. Every part of the theory is fully illustrated by examples and accompanied by a large and varied collection of problems. A knowledge of first-year calculus is assumed.

BRENNEMAN, JOHN WILLIAM

Mechanics. Prepared under the direction of the Division of Engineering Extension, the Pennsylvania State College. New York: McGraw-Hill Book Company, Inc., 1941. 141 p. illus. 23 cm. (The Pennsylvania State College. Industrial series) \$1.50. 391

Contents: Fundamental principles of mechanics. Resolutions of forces. Equilibrium of concurrent and parallel forces in one plane. Simple machines—lever—hoisting devices. Equilibrium of non-concurrent forces in one plane. Bridge and roof stresses. Screws and threads, pulleys, gears, and gear trains. Friction and the inclined plane. Center of gravity. Moment of inertia. Motion and velocity. Force and acceleration. Curvilinear motion and rotation. Work, energy, and power. Appendix. Index.

Note: In this text for the beginning student or apprentice with a limited mathematical background, the author gives a simplified presentation of the fundamentals of the subject. The elements of statics and dynamics are developed without use of the calculus. The book contains practical problems selected from examples encountered daily in industry.

CLEMENTS, GUY ROGER, AND LEVI THOMAS WILSON

Analytical and applied mechanics. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 475 p. illus. 21 cm. \$3.75. 392

Contents: Vectors. Concurrent forces. Coplanar forces. Resultants. Equilibrium. Framed structures. Forces in space. Cables. Center of gravity. Moment of inertia. Hydrostatics. Stress and strain. Beams. Motion of a point. Plane motion. Kinetics of a particle. Impulse and momentum. Work and kinetic energy. Dynamics of a rigid body. Problems for review. Appendix. Index. Answers to problems.

Note: A college text presenting a simple but rigorous discussion of the mathematical and physical theory necessary for a thorough first course in mechanics, particularly for students of mechanical engineering and related sciences. A working knowledge of college mathematics is assumed, and the integral calculus is introduced early in the text. A wide variety of applications of direct usefulness to the student of engineering is presented. In the second edition the order of presentation has been changed somewhat and new problems and illustrations have been added.

COE, CARL JENNESS

Theoretical mechanics; a vectorial treatment. New York: The Macmillan Company, 1938. 555 p. 21 cm. \$5.00. 393

Contents: Introduction. Rectilinear motion of a particle. Introduction to vectors. Curvilinear motion of a particle. Displacements and motion of a rigid body. Sliding vectors. Statics of particles and of a rigid body. Statics of a flexible cord. Principles of virtual work. Kinetics of particles. Kinetics of a rigid body. General principles of mechanics. Vector calculus. Potential theory. Index.

Note: A textbook for students of mathematics and mathematical physics, presenting an introduction to classical mechanics, mathematical physics, and the postulates on which they rest, and at the same time explaining and applying immediately the basic principles of vector analysis. The book presents sufficient material for an introductory and an advanced course. A year's work in calculus is a required mathematical background, and the last three chapters will be more readily mastered by the student who has had a first course in differential equations. Selected exercises are offered both in application of the theory and in simple extensions of it. Answers are given to most of the problems.

COX, GLEN NELSON, AND F. J. GERMANO

Fluid mechanics. New York: D. Van Nostrand Company, Inc., 1941. 274 p. illus. 23 cm. \$3.00. 394

Contents: Properties of fluids. Pressure in fluids. Force of fluid pressure on areas. Viscosity. Types of motion. Bernoulli's theorem. Forms of energy. Dimensional analysis. Measuring devices. Pipe flow. Uniform flow in open channels. Dynamic action of fluids. Centrifugal pumps. Index.

Note: By constant emphasis upon practical study of the behavior of fluids, both liquids and gases, this college text endeavors to train the student to solve the problems encountered in the industrial field. Little space is devoted to abstract theories. The treatment assumes that the student will have had basic education in mathematics, mechanics, and physics.

DODGE, RUSSELL ALGER, AND MILTON J. THOMPSON

Fluid mechanics. New York: McGraw-Hill Book Company, Inc., 1937. 495 p. illus. 23 cm. \$4.00. 396

Contents (abridged): Properties of fluids. Statics of fluids. Floation. Accelerated liquids in relative equilibrium. Dynamics of fluids. Impulse and momentum in fluids. Dynamic lift and propulsion. The flow of viscous fluids. Flow of fluids in pipes. Flow with a free surface. Flow through orifices and tubes. The resistance of immersed and floating bodies. Dynamics of compressible fluids. Thermodynamics of compressible viscous fluids. Dynamic similarity. Special problems in fluid mechanics. Answers to problems. Index.

Note: A simplified textbook on the principles of hydrostatics, hydraulics, hydromechanics, and aerodynamics written for engineering students. Both gaseous and liquid fluids are treated. Answers to questions are included.

EDWARDS, HIRAM WHEELER

Analytic and vector mechanics. New York: McGraw-Hill Book Company, Inc., 1933. 428 p. illus. 23 cm. (International series in physics) \$4.00. 397

Contents (abridged): Velocity. Vectors. Angular velocity. Acceleration. Harmonic motion. Inertia and mass. The fundamental equations in translation. The dynamical equations for pure rotation. Statics. Forces of attraction and potential. Central forces. Motion of a particle in fluids with resistance. Damped harmonic motion. Vector fields. Problems illustrating the fundamental principles. General motion of a rigid body. Other general principles. Index.

Note: In this text more than customary use is made of the vector methods of expression. A special feature is the inclusion, in addition to a chapter on fundamental vector algebra, of a chapter describing vector fields and showing the meaning and operation of gradient, divergence, and curl when applied to mechanical quantities. The book places considerable emphasis on the subject of kinematics.

FRANK, NATHANIEL HERMAN

Introduction to mechanics and heat. Second edition. New York: McGraw-Hill Book Company, Inc., 1939. 384 p. illus. \$3.00. 398

Contents (abridged): Fundamental definitions. Linear kinematics of a mass point. Plane kinematics of a mass point. Newton's laws. Linear and plane dynamics. Work and energy. Special dynamics of a mass point. Dynamics of a system of particles. Statics of rigid bodies. Plane dynamics of rigid bodies. Special rigid-body motions. Planetary motion. Hydrostatics. Fluid dynamics. Static elasticity. Dynamics of elasticity. Temperature and

thermometry. The first law of thermodynamics. Heat conduction. Thermodynamics and kinetic theory of an ideal gas. The properties of real gases. The second law of thermodynamics. Appendix. Index.

Note: Emphasis is laid on theory rather than on description in this elementary textbook designed for physics students. A knowledge of calculus is useful for better comprehension of the material.

JAMESON, JOSEPH MOORE, AND CHARLES WILBUR BANKS

Elementary practical mechanics, by the late Joseph M. Jameson. Fourth edition, by Charles Wilbur Banks. New York: John Wiley & Sons, Inc., 1938. 363 p. illus. 22 cm. \$2.75. 400

Contents: Force. Composition and resolution of velocities and forces. Graphical solution of concurrent forces in equilibrium. Mathematical solution of concurrent forces. Moments; parallel forces. Non-concurrent forces. Trusses and other structures. Uniform motion. Accelerated motion. Forces producing motion. Work and power. Energy and momentum. Friction. Machines. Elasticity and strength of materials. Mechanics of fluids. Elements of heat. Appendices. Index.

Note: Designed for elementary technical and manual training schools, or as an introductory textbook for engineering schools. The book endeavors to explain practical mechanics as the science of processes and structures of everyday life, and to give a knowledge of facts and fundamental theory and the ability to apply this knowledge. This fourth edition is revised and rearranged, and some new material and new problems added, by Charles W. Banks.

LINDSAY, ROBERT BRUCE

Physical mechanics; an intermediate text for students of the physical sciences. New York: D. Van Nostrand Company, Inc., 1933. 436 p. illus. 22 cm. \$4.00. 402

Contents: The elemental concepts of mechanics. Rectilinear motion of a particle. Curvilinear motion in a plane. Particle dynamics from the point of view of energy. Statics of a particle. Statics of a rigid body. Dynamics of a rigid body. Constrained motion. Oscillations. The motion of aggregates of particles. Deformable bodies and wave motion. Mechanics of fluids.

Note: This book is intended as an intermediate text suitable for students who have had a general elementary course in physics and mathematics. The close connection between the electric, magnetic, and gravitational fields has been emphasized and the fundamental importance of mechanical principles in their application to all fields of physics has been stressed.

MACMILLAN, WILLIAM DUNCAN

Theoretical mechanics: dynamics of rigid bodies. New York: McGraw-Hill Book Company, Inc., 1936. 478 p. illus. 23 cm. \$6.00. 403

Contents: Algebra of vectors. Moments of inertia. Systems of free particles. General theorems on the motion of a rigid body. Motion parallel to a fixed plane. Motions of a rigid body in space. Integrable cases of motion of a rigid body about a fixed point. Rolling motion. Impulsive forces. The differential equations of analytical dynamics. The canonical equations of Hamilton. The method of periodic solutions. Bibliography. Indexes.

Note: The third of a series of three volumes on theoretical mechanics by the same author, the previous works being *Statics and the dynamics of a particle*, New York, 1927, and *The theory of the potential*, New York, 1930 (for the latter see Index). The present work develops the dynamic structure, based on Newton's three laws of motion, by the intuitive or geometrical method, leading to the development of the theory of vectors, and by the purely analytic method resulting from the equations of Lagrange and Hamilton. The subject of small or infinitesimal oscillations is extended to the finite periodic oscillations, known as the periodic solutions of Poincaré. A knowledge of advanced mathematics is assumed.

MACMILLAN, WILLIAM DUNCAN

Theoretical mechanics: the theory of the potential. New York: McGraw-Hill Book Company, Inc., 1930. 469 p. illus. 23 cm. \$5.00. 404

Contents: The attraction of finite bodies. The Newtonian potential function. Vector fields—theorems of Green and Gauss. The attractions of surfaces and lines. Surface distributions of matter. Two-layer surfaces. Spherical harmonics. Ellipsoidal harmonics. Bibliography. Index.

Note: A textbook for students of mathematical physics and of pure mathematics, presenting a connected account of this specialized field of mechanics, including a study of the properties of the harmonic functions which satisfy Laplace's second order differential equation. A knowledge of integral equations on the part of the student is not assumed. There is a short bibliography from 1785 through 1930. This volume is the second of three works by the same author on the general subject of theoretical mechanics, the others being *Statics and the dynamics of a particle*, New York, 1927, and *Dynamics of rigid bodies*, New York, 1936, the latter described above.

MILLER, JOHN ANTHONY, AND SCOTT BARRETT LILLY

Analytic mechanics. Revised edition. Boston: D. C. Heath and Company, 1935. 325 p. illus. 20 cm. \$2.75. 405

Contents: Introduction. Part I, Statics: The composition and resolution of forces acting on a particle. Statics of a particle. Forces acting on a rigid body. Vectors. The statics of a rigid body. The center of gravity. Friction. Flexible cords. Part II, Kinetics: The kinetics of a particle. The motion of a particle in a straight line. Kinetics of a particle (cont.). The motion of a particle in a plane curve. Work and energy. Constrained motion. Impulse; collisions of spheres. The moment of inertia. The dynamics of a rigid body. Kinetic friction. Miscellaneous problems. Index.

Note: A rigorous general introduction to the study of mechanics for an undergraduate college course, presupposing a first course in the calculus, and devoted to the fundamental theorems common to the various branches of engineering, theoretical physics, and celestial mechanics. In this edition the theory has been revised, articles and instruction rewritten, and exercises increased in number.

MURPHY, GLENN

Mechanics of fluids. Scranton: International Textbook Company, 1942. 329 p. illus. 21 cm. (International texts in civil engineering, C. E. O'Rourke, consulting editor) \$3.25. 406

Contents: Properties of fluids. Fluids at rest. Buoyant forces. Flow of fluids. Uniform flow. Non-uniform flow. Forces exerted by fluids in motion. Turbines in pumps. Unsteady flow. Appendixes: Systems of units. Laboratory instructions. Properties of pipe. Index.

Note: Primarily for undergraduates in an introductory course, this book presents basic principles underlying behavior of fluids at rest and in motion to serve as a background for later design courses taken by aeronautical, agricultural, chemical, civil, and mechanical engineers. Featured is a series of 18 laboratory and design problems integrated with the text material. In addition there is an extensive group of 430 problems serving as material for drill purposes.

OLSON, HARRY FERDINAND

Dynamical analogies. New York: D. Van Nostrand Company, Inc., 1943. 196 p. illus. 22 cm. \$2.75. 408

Contents: Introduction and definitions. Elements. Electrical, mechanical, rectilinear, mechanical rotational, and acoustical systems of one degree of freedom. Electrical, mechanical, rectilinear, mechanical rotational and acoustical systems of two and three degrees of freedom. Corrective networks. Wave filters. Transients. Driving systems. Generating systems. Theorems. Applications. Index.

Note: A treatment for engineers of analogies between electrical systems as the most commonly understood kind of vibrating systems and mechanical rectilinear, mechanical rotational, and acoustical systems. The subject matter is developed in stages from the simple element through to complex arrangements of multi-element systems. As an aid in the establishment of these analogies a complete theme is depicted in each illustration. The text assumes on the part of the reader a familiarity with the elements of alternating current circuit theory and physics. The methods here outlined are useful in the solution of problems in

mechanical and other systems by applying the engineer's knowledge of electrical circuits to the analysis of acoustics, mechanics, and related fields.

OSGOOD, WILLIAM FOGG

Mechanics. New York: The Macmillan Company, 1937. 495 p. illus. 22 cm. \$5.00. 409

Contents: Statics of a particle. Statics of a rigid body. Motion of a particle. Dynamics of a rigid body. Kinematics in two dimensions. Rotation. Work and energy. Impact. Relative motion and moving axes. Lagrange's equations and virtual velocities. Hamilton's canonical equations. D'Alembert's principle. Hamilton's principle and the principle of least action. Contact transformations. Solution of Hamilton's equations. Appendix. Index.

Note: A thorough coordination has been made in this text between the mathematical theory of mechanics and physical principles. The author has united a study of the physical phenomena in the field of mechanics and the physical laws governing them with the study of the best mathematical methods of the present day for solving the problems of mechanics.

ROUSE, HUNTER

Fluid mechanics for hydraulic engineers. New York: McGraw-Hill Book Company, Inc., 1938. 422 p. illus. 23 cm. (Engineering Societies monographs; H. W. Craver, consulting editor) \$5.00. 410

Contents: Dimensional analysis. Fundamentals of hydro-mechanics: Elementary principles of flow. Generalized equations of flow. Irrotational motion. Conformal mapping. Applicability of the fundamental equations. Mechanics of fluid resistance: Fundamental equations of viscous flow. Problems in laminar motion. Fluid turbulence. Characteristics of the boundary layer. Flow around immersed bodies. Flow in closed conduits. Flow in open channels. Transportation of sediment. Mechanics of wave motion: General characteristics of wave phenomena. Gravity waves in open channels.

Note: Presents in systematic detail the fundamental principles of fluid motion and their application to various phases of hydraulic engineering. Emphasis is placed upon sound physical analysis of actual flow phenomena, providing the engineer with more dependable methods of approach than empirical hydraulics can afford.

SYNGE, JOHN LIGHTON, AND B. A. GRIFFITH

Principles of mechanics. New York: McGraw-Hill Book Company, Inc., 1942. 514 p. illus. 23 cm. \$4.50. 411

Contents: Part I, Plane mechanics: Foundations of mechanics. Methods of plane statics. Applications in plane statics. Plane kinematics. Methods of plane dynamics. Applications in plane dynamics. Plane impulsive motion. Part II, Mechanics in space: Products of vectors. Statics in space. Kinematics. Methods of dynamics in space. Applications in dynamics in space. Lagrange's equations. The special theory of relativity. Appendix. Index.

Note: A textbook for introductory college courses in engineering, designed to present the subject as an orderly, self-contained science. A fair knowledge of calculus is required for part I, including elementary differential equations, so that the text cannot be used until the second semester of the sophomore year. Part II is mainly for advanced students.

VENNARD, JOHN KING

Elementary fluid mechanics. New York: John Wiley & Sons, Inc., 1940. 351 p. illus. 23 cm. Cloth, \$3.50. 413

Contents: Fundamentals. Fluid statics. The flow of an ideal fluid. The flow of a real fluid. Similarity and dimensional analysis. Fluid flow in pipes. Fluid flow in open channels. Fluid measurements. Flow about immersed objects. Appendixes. Index.

Note: This textbook is intended primarily for the beginner who knows the principles of mathematics and mechanics but has no previous experience with fluid phenomena. The author has sacrificed mathematical rigor and detail in order to convey the basic ideas of the study of fluids under all possible conditions of rest and motion. The omission of subsidiary conclusions is intended to encourage the student to draw conclusions by himself, and illustrative problems stress the practical applications of the theory. A knowledge of calculus is assumed.

ASTRONOMY

General

BAKER, ROBERT HORACE

When the stars come out. New York: The Viking Press, 1934. 188 p. illus. 21 cm. \$2.50.

416

Contents: Around and above us. When the stars come out. Figures that the stars form. The stars in their courses. The man in the moon. When the sun is eclipsed. Celestial fireworks. Evening and morning stars. Our sun and its family. Distant suns. The astronomer's workshop. Our galaxy of stars. Galaxies beyond our own. This vast universe. Index.

Note: An illustrated introduction to astronomy in non-technical language intended for the general reader.

BARTON, WILLIAM HENRY, AND JOSEPH MARON JOSEPH

Starcraft. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1938. 228 p. illus. (part col.) 23 cm. \$2.50.

417

Contents: Starlight and sky sights. Pointing to the stars. Making your own sky charts. Meteors. Never lost with the stars. Where is the world going? Getting way out into space. Shadowing time. You can make a real telescope. Squinting through the magic eye of the telescope. Space views. Truth trailers. Do you know? Index.

Note: This readable volume, although intended for the use of older boys and girls, and for the use of leaders in scout groups and summer camps, will also prove of interest to the adult who is anxious to learn the fundamental facts about our solar system. Besides the theoretical aspects of the subject, the authors describe methods for constructing a practical and inexpensive telescope, star charts, and sundials. A final chapter contains brief biographical sketches of famous astronomers of all ages. Suggestions for further reading are given at the end of each chapter.

BERNHARD, HUBERT JAY, AND OTHERS

New handbook of the heavens, by Hubert J. Bernhard, Dorothy A. Bennett, and Hugh S. Rice. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1941. 299 p. illus. 23 cm. \$2.50.

418

Contents: Introduction to the heavens. Stars around the poles. Autumn and winter stars. Spring and summer skies. Stars of the southern sky. The planets. The moon. The sun. The comets. The meteors. The asteroids. Double and multiple stars. Variable stars. Star clusters and nebulae. Rainbows, auroras, and other wonders. Units of the universe. Photography of the heavens. Use of the telescope. Appendixes. Glossary. Index.

Note: A practical guide offering star charts and data, descriptions of the heavenly bodies, astronomical facts and lore, written for the amateur astronomer. This edition, although the same in outline, has been entirely rewritten. The presentation is simple and non-technical.

BOK, BART JAN, AND PRISCILLA F. BOK

The Milky way. Philadelphia: The Blakiston Company, 1941. 204 p. illus. 22 cm. (The Harvard books on astronomy, edited by Harlow Shapley and B. J. Bok) \$2.50.

418a

Contents: Presenting the Milky way. How an astronomer attacks the problem. The sun's nearest neighbors. Reaching out—the system takes shape. The whirling galaxy. Bright and dark nebulae. The interstellar gas. The general haze. Men at work. Explorations in space. How old is the Milky way?

Note: This book presents in semi-popular form a detailed de-

scription of the Milky way and the advances in our knowledge possible by the new photographic cameras. The dust and gas in the vast spaces between the stars, the compositions and dimensions of star clusters, the appearance of our galaxy to an observer in the Andromeda nebula, and the problems related to the past and future of our galaxy, are discussed. Among the 93 illustrations are two large-scale photographic maps of the Milky way, recent photographs made with Schmidt cameras, and portraits of the leading scientists in the field.

DRAPER, ARTHUR L., AND MARIAN LOCKWOOD

The story of astronomy. New York: The Dial Press, 1939. 394 p. illus. 22 cm. \$3.00.

419

Contents: Early beginnings. Skyward hol! Astronomical tools of the past and present. The moon, a dead world. The flaming sun, our daytime star. The sun's family of planets. Comets and meteors, riff-raff of the sky. The solar system—an isolated family. The stars, other suns than ours. Queer kinds of stars. Star clusters, great stellar families. Gaseous nebulae—shining clouds in space. The Milky Way galaxy. Other galaxies than ours. The universe. Index.

Note: A readable account for laymen of the broad outlines of the development of astronomy. Unfortunately there are no references to the literature on which the text is based and no suggestions for further reading.

FISHER, GEORGE CLYDE, AND MARIAN LOCKWOOD

Astronomy. New York: John Wiley & Sons, Inc., 1940. 205 p. illus. 22 cm. (The sciences; a survey course for colleges, edited by Gerald Wendt) \$2.25.

420

Contents: The earth and the sky. The moon. The sun. The other planets. Comets and meteors. Astronomical instruments. The stars. Variable stars, double stars, and clusters. Our Milky way and other galaxies. The constellations. Bibliography. Glossary. Index.

Note: A short, informative survey of the earth as an astronomical body, of the solar system and the relations of its members to each other, and their places in the universe. The moon, sun, planets, comets, meteors, stars, and galaxies are all treated in easy, informal style, together with their motions and celestial events. Astronomical terms are defined in simple language. Astronomical instruments are described to show their function in establishing facts. The book is understandable to the layman, and gives him familiarity with the sky as well as an understanding of the structure of the universe.

FISHER, GEORGE CLYDE

The story of the moon. Garden City, N.Y.: Doubleday, Doran and Company, Inc., 1943. 301 p. illus. 23 cm. (The American Museum of Natural History. Science series. Vol. rv) \$3.00.

420a

Contents (abridged): Early observations of the moon. Origin. Motions. The moon as a celestial body. The moon and the tides. Surface of the moon. Origin of the craters. Meteorite craters as features of the earth's surface. Is there life on the moon? The moon and eclipses. Personal experiences with eclipses. Myths, mistakes, and lunar folklore. Other satellites of the solar system. Bibliography. Index.

Note: A readable and scientifically accurate book which will appeal to the layman, and also be of value as a reference tool. There is a three-page bibliography.

FROST, GEORGE EDWIN

Planets, stars, and atoms. Caldwell, Idaho: The Caxton Printers, Ltd., 1939. 287 p. illus. 23 cm. \$3.00.

421

Contents: Introductory. The universe. The telescope. The spectroscope. Photography. Our solar system. The sun. Mercury. Venus. The earth. The moon. The tides. Mars. Minor planets. Jupiter. Saturn. Uranus. Neptune. Pluto. Comets. The stars. The Milky Way. Distant nebulae. Exterior galaxies. Space. Theory of the universe as an enclosed sphere. Do other planets exist? The microscopic universe. Molecules. Atoms. Matter and energy. Ether, empty space and gravitation. The theory of relativity. Radiation. Light. Color. Sound. Universal motion. *Obiter dictum*. The sky maps. Appendix: definitions and facts for handy reference. Index.

Note: A summary of the rudiments of astronomy and related sciences, intended as a handy reference book for the use of teachers of elementary schools, as well as a semi-popular account for the layman. Included are six maps of the northern sky for the months of January, March, May, July, September, and November, plus a glossary of facts and terms for readers not generally familiar with scientific terminology. There are 34 photographs and drawings.

HARVARD UNIVERSITY. HARVARD COLLEGE ASTRONOMICAL OBSERVATORY

Tercentenary papers. Cambridge, Mass.: Harvard College Astronomical Observatory, 1937. 632 p. illus. 30 cm. (Harvard College. Annals of the Astronomical Observatory. Vol. 105) Paper, \$4.00. 422

Contents (abridged): The Henry Draper charts of stellar spectra, by Annie J. Cannon. A spectrophotometric study of Nova Ophiuchi 1933 in the intermediate stages, by Arthur R. Sayer. Spectrophotometry of the chromosphere, 1932, by H. H. Lane. The Harvard photoelectric microdensitometer, by George Z. Dimitroff and Donald H. Menzel. Thirty-six thousand galaxies in the south polar cap, by Harlow Shapley. Red indices of 104 external galaxies, by Carl K. Seyfert. A study of faint northern galaxies, by Carl K. Seyfert. Distant variable stars in low galactic latitude, by Harlow Shapley and Constance D. Boyd. Investigations of galactic structure, by Eric M. Lindsay and others. First list of objective-prism radial velocities, by Bart J. Bok and Sidney W. McCuskey. Red indices of stars in eight southern selected areas, by Cecilia Payne-Gaposchkin. A photoelectric comparison of the brightness of the sun, moon, Capella, Vega, and Denes, by William A. Calder. Changes of period in long-period variables, by T. E. Sterne and Leon Campbell. Distribution of meteoric masses in interstellar space, by Fletcher Watson, Jr.

Note: A collection of 32 professional papers on astronomical researches at Harvard published in commemoration of the three-hundredth anniversary of the founding of Harvard College. The papers are concerned with various astronomical fields, including astrophysics, meteoric astronomy, photometry, and the problems of stellar distribution, variable stars, and external galaxies. Lists of references cited are given after each of the papers and there is a large number of tables, drawings, and photographs.

JOHNSON, FRANCIS RARICK

Astronomical thought in Renaissance England: a study of the English scientific writings from 1500 to 1645. Baltimore: The Johns Hopkins Press, 1937. 357 p. illus. 23 cm. (Huntington Library publications) \$3.25. 423

Contents: Introductory survey. The pre-Copernican conceptions of the universe. Astronomical learning in England in the early sixteenth century. The "newness" of the Copernican astronomy. The advancement of astronomy in England, 1550-1573. Thomas Digges and the progress of the Copernican astronomy. The quest for physical confirmation of the earth's motions. The two chief systems of the universe: the Tycho and the Copernican. Conclusion: the scientific spirit in Renaissance England. Appendix: bibliographies. Index.

Note: Surveys the English writings on science from about 1500 to the mid-seventeenth century and outlines the course of astronomical thought in scientific circles during that significant period of transition from the old cosmology to the new. The attention is centered upon the changes in astronomical beliefs as they are set forth by the scientific writers of the time, and upon the general attitude toward the aims and methods of science which these writers reveal. The author follows the practice of quoting liberally from the original sources rather than summarizing them in his own words. The work is fully documented and there is a chronological list of about 385 books dealing with astronomy printed in England to 1640, most of which are annotated, together with

a selected list of about 200 secondary and bibliographical works from the world literature of the subject.

KING, EDWARD SKINNER

A manual of celestial photography; principles and practice for those interested in photographing the heavens. With foreword by Harlow Shapley. Boston: Eastern Science Supply Co., 1931. 177 p. illus. 21 cm. \$3.00. 424

Contents: General survey. First principles. How to take an astronomical photograph. Keeping a record of photographic work. Adjustment of the telescope. What clock rate? How to test the action of worm or driving screw. Guiding. Types of mountings. The photographic plate. What plate to use? The dark room and its equipment. Development and handling of plates. Photography of stellar spectra. Printing and enlarging. The amateur and his telescope. Subjects for photographic observation. Action of light on a photographic plate. Magnitudes, wedges, and color scales. Photometry of stellar images. Methods of measuring the images. Observational and laboratory practice for the student. Appendices: Theory of polar adjustment. Clock rate, effect of refraction and other factors. Instrumental and laboratory equipment, including dark-room supplies. Sidereal time, finding accurate scale, classes of spectra, and cleaning astronomical lenses. Index.

Note: The author of this volume has made many hundreds of celestial photographs at the Harvard College Observatory. A large proportion of the matter in the book is based on his personal experiences. Although the book is of interest to professional astronomers, it is intended also for amateurs, and many of the techniques described are applicable to small telescopes and cameras. The discussion is intelligible to anyone who has had some experience with telescopes and an elementary introduction to astronomy.

LEE, OLIVER JUSTIN

Beyond yonder. Boston: Chapman & Grimes, Publishers, 1939. 169 p. illus. 19 cm. \$2.50. 425

Contents: Let us take a look afar. Cars, contrasts, and conquests. Smallest and greatest are far apart. Men, machines, and masters. Modern miracles and magic. Man lives by parallax. The yardstick of the gods. A visit with the family. Exotic wines are sampled. Private interviews with stars. The spectrum speaks again. Michelson plays with light. The cepheids whisper to Shapley. Thinking it over. Appendix.

Note: Popularly written, this book discusses the importance of, and means of conquering, distance in the study of astronomy. The work of some men of science in gathering knowledge concerning the bodies in the solar system is indicated and the place of logic in their procedure is treated. Treatment of distance by the other physical sciences is also covered.

MAKEMSON, MAUD (WORCESTER)

The morning star rises, an account of Polynesian astronomy. Published for Vassar College. New Haven: Yale University Press, 1941. 301 p. illus. 23 cm. \$5.00. 426

Contents: List of illustrations. Foreword. Stars of the sea road. The origin of heaven and earth. The cycles of the stars and moon. Omens in the sky. Myths of the sun and moon. The sky-children. Stars of the south seas. The astronomical school. Table I, Identification of stars and constellations. Table II, Names of months. Bibliography. Index.

Note: This is an investigation of the astronomical practices, knowledge, and beliefs of the Polynesians as expressed in their method of navigation, calendrical system, ideas on cosmogony, and myths of the sun, moon, and stars.

MOSELEY, EDWIN LINCOLN

Other worlds. New York: D. Appleton and Co., 1933. 230 p. illus. 19 cm. (Appleton new world of science series, edited by W. Davis) \$2.00. 427

Contents: Meteors. Meteors in the air. Where were the meteors before we saw them? Shooting stars. Comets and their relation to meteors. Where comets have struck the earth. The moon. Planets near the sun. Mars. Jupiter. Saturn. Worlds discovered by means of telescopes. The sun and his family and neighbors. How knowledge of the stars has been obtained. Variable stars.

Double and multiple stars. The universe. Origin of the earth and other worlds. Are there creatures like ourselves in other worlds? Index.

Note: Designed for the layman, this book presents the basic ideas of astronomy in simple terms. The subject matter is limited to common heavenly bodies and phenomena.

NININGER, HARVEY HARLOW

Our stone-pelted planet. A book about meteors and meteorites. Boston: Houghton Mifflin Company, 1933. 237 p. illus. 19 cm. \$3.00. 428

Contents: Ancient and modern views of meteorites. Why the interest in meteorites. The origin of meteorites. When do meteors strike the earth? The heat of falling meteorites. Kinds and composition of meteorites. How to recognize meteorites. Size of meteorites. The great Siberian fall of 1908. Distribution of meteorites. Meteorites in Kansas. The Kansas meteorite farm. Mexico's great meteorites. How many meteorites fall? The importance of large falls. Meteoric additions to the earth's atmosphere. Danger from falling meteorites. Chances of finding meteorites. Chances of seeing a meteorite fall. Some meteoric falls. The Cape York meteorites, by J. D. Figgins. Appendix. Index.

Note: A book for the general reader, written in non-technical style but with due attention to scientific accuracy. The work is also intended as a reference book on the subject. The appendix contains a list of recorded meteoritic falls from earliest times to 1932 for all countries of the earth. This record gives the number of stones, weight, date and time, and is illustrated by maps.

OLCOTT, WILLIAM TYLER, AND EDMUND W. PUTNAM

Field book of the skies. A presentation of the main facts of modern astronomy and a practical field book for the observer. Second edition, revised. Illustrated from photographs and with many diagrams and charts. New York: G. P. Putnam's Sons, 1934. 534 p. illus. 17 cm. (Putnam's nature field books) \$3.50. 428a

Contents (abridged): Why study astronomy. For the beginner. How do we know? How to use this book. The constellations. How to locate the "Big Dipper" and the North Star. The constellations of spring. The constellations of summer. The constellations of autumn. The constellations of winter. The solar system. The Milky way. The small telescope. Chronology. Names of stars and their meanings. Appendix. Bibliography. Index to constellations. Index to moon. General index.

Note: This pocket-size handbook for the beginning student and the general reader presents an easily comprehended epitome of modern astronomy, avoiding as far as possible technicalities and mathematical statistics while showing the novice how to identify the constellations and the individual stars through the use of a double system of charts for 40° north latitude (with accompanying texts), one for naked-eye and field glass work, the other for the small telescope. There is a section on telescope making, a list of stars by magnitude, distance, right ascension and declination, tables of parallaxes, an annotated bibliography of 40 books, a table of comets, and other basic data. The second edition contains an account of the planet Pluto and its discovery in 1930, plus minor textual changes.

PERRY, STUART HOFFMAN

The metallography of meteoric iron. Washington, D.C.: The Smithsonian Institution, 1944. 118 p. illus. 23 cm. (Smithsonian Institution. United States National Museum. Bulletin no. 184) \$0.60. 428b

Contents: Introduction. General types of meteoric iron. Primary constituents of meteoric iron. Accessory constituents of meteoric iron. Artificial irons. Alloys. The iron-carbon system. The iron-nickel system. Meteoric nickel-iron. Hexahedral structures. Octahedral structures. Plessite; nickel-rich ataxites. Heat alterations. The role of phosphorus in meteoric iron. Carbon and sulphur in meteoric iron. Neumann lines and deformations. Metallographic techniques. Bibliography. Index.

Note: A technical monograph which aims to apply metallography, both theoretically and practically, to the study of iron meteorites. The work includes an outline of metallography of

artificial iron and its alloys to enable the reader to interpret meteoric structures. The principal types and structural features are described and illustrated, methods of research explained, and a somewhat comprehensive bibliography is presented. There are 310 photomicrographs covering 98 meteoric irons.

REH, FRANK

Astronomy for the layman. Foreword by Clyde Fisher. Drawings by the author. New York: D. Appleton-Century Co., Incorporated, 1936. 308 p. 21 cm. \$3.00. 429

Contents (abridged): The antiquity of astronomy. A general view of the heavens. Measuring stellar distances. Motion of stars. Stellar magnitude. Number of visible stars. The colors of stars. Scintillation of stars. Double and multiple stars. Variable stars. Star clusters. Nebulae. The Milky way. Island universes. The constellations. Whence came the planets? The sun. The planets. Comets. Meteors. Zodiacal light and counter-glow. Aurora borealis or northern lights. A journey through space. Appendix. Index of authors. Index of subjects.

Note: A popular, descriptive work abounding in poetical quotations and intended for the layman or amateur astronomer.

ROSEN, EDWARD

Three Copernican treatises: the *Commentariolus* of Copernicus, the *Letter against Werner*, the *Narratio prima* of Rheticus. Translated with introduction and notes by Edward Rosen. New York: Columbia University Press, 1939. 211 p. illus. 23 cm. (Columbia University. Records of civilization; sources and studies. No. xxx) \$3.00. 429a

Contents (abridged): Introduction: Nicholas Copernicus. George Joachim Rheticus. The *Commentariolus*. The *Letter against Werner*. The *Narratio prima*. The doctrine of the spheres. The title of the *Commentariolus* and the views of Copernicus concerning the nature of astronomical hypothesis. Deferent and epicycle, eccentric and equant. *Commentariolus*. *Letter against Werner*. *Narratio prima*. Bibliographical note. Index.

Note: In addition to providing in this work the first English translation of these three shorter Copernican treatises, the translator has included a scholarly 34-page introduction which discusses the Copernican theory, its relation to earlier cosmologies, and the nature of the calculations employed. There are, moreover, about 600 explanatory and bibliographical footnotes by the translator and a detailed index. These treatises are believed to be better suited to convey the Copernican theory to the general reader than the classic *De revolutionibus orbium caelestium* since they are relatively free from the extensive calculations necessarily included in the latter work.

SHAW, ROBERT WILLIAM, AND SAMUEL L. BOOTHROYD

Manual of astronomy; a guide to observation and laboratory interpretation in elementary astronomy. Ithaca, N. Y.: Robert William Shaw, 1941. 305 p. illus. 27 cm. Paper, \$3.00. 430

Contents: Stars. Planets. Sun. Moon. Time and position. Meteors. Clusters. Instruments. Spectra. Nebulae. Appendixes.

Note: A laboratory manual for use in beginning college courses in astronomy. It provides 46 exercises in visual and telescopic observations of the heavenly bodies, including measurement of variable star photographs, light curves of eclipsing variable stars, distribution of galactic novae, positions of the planets on their orbits, observation of the sunset point and sunspot cycle, selenometer observations, circumstances of a lunar eclipse, telling time by the stars, investigation of meteor trails, general properties of lenses and mirrors, construction of refracting and reflecting telescopes, observation of stellar spectra, and study of the red-shift in extra-galactic nebulae. A number of star charts and tables are provided.

SPURR, JOSIAH EDWARD

Geology applied to selenology: the Imbrian plain region of the moon. Lancaster, Pa.: The

Science Press Printing Company, 1944. 112 p. illus. 26 cm. \$3.00. 430a

Contents: Introduction. Summary. Features of certain moon craters. Selenological phenomena of Imbrian region. Lunar ash distribution. Classification of moon depressions. Nature of the moon-crust. Sequences in the Imbrian plain. Patterns of Imbrian craters. Wrinkle-ridges and inflation-mounds. Further Imbrian crater patterns. Between Imbrium and Frigoris. Frigoris and the region north. North and south of Frigoris compared. Sequence in Frigoris region. Comparison of Imbrium and Frigoris sequences. Three cycles of crater formation. Depth-fissures and crater-chains. The earth and the moon. Addendum.

Note: This book presents the observations and deductions made by a geologist in a 20-year study of a portion of the surface of the moon. Phenomena are observed and conclusions or suggestions arrived at in the light of geological experience and training.

STETSON, HARLAN TRUE

Earth, radio and the stars. New York: Whit-
tlesey House, McGraw-Hill Book Company,
Inc., 1934. 336 p. illus. (part col.) 21 cm. \$3.00.
431

Contents: The approach. The twin planet. The wandering poles. Does the moon change the latitude? Ocean tides. Earth tides. Variation in longitude. The earth from the inside. The sun's effects on human affairs. Sun-spots and the earth's magnetism. Sun-spots and radio reception. The sun and the ionized layer. Transatlantic radio transmission. The moon and radio. Solar eclipses and radio. Meteors and radio. Radio and the stars. Illuminations of the night sky. Cosmic clouds. Cosmic rays. Cosmology. Bibliography. Name index. Subject index.

Note: This book for the general reader brings together recent conspicuous developments in astronomy and its related fields which may suggest a more intimate relationship between man and his cosmic environment than has been generally supposed. The author indicates how a study of the relation of the earth to the cosmic scheme may introduce us to a new science, which he terms *cosmology*, in which astronomy, physics, chemistry, and the related sciences will each make its own contribution. A large part of the work is devoted to the effect of extraterrestrial bodies and energies upon radio transmission and reception. The bibliography contains about 140 references to American and foreign publications arranged by chapters.

STOKLEY, JAMES

Stars and telescopes; preface by Dr. Walter
S. Adams. New York: Harper & Brothers, 1936.
319 p. illus. 22 cm. \$3.00. 432

Contents: Preface. Foreword. The heavens above us. Motions in the sky. Ancient ideas. Modern ideas. The telescope. Improving the telescope. Telescopes of today. Amateur telescopes. Bigger and better. Methods and attachments. Time. The moon. The sun. The planets. Comets and meteors. The stars. Analyzing the stars. Variable and double stars. Star clusters and nebulae. The structure of the galaxy. The spiral "nebulae." Life in the universe. Bibliography. Glossary. Index.

Note: A summary of modern astronomy for the layman. Traces the science from its superstitious beginnings down through the work of Kepler, Copernicus and Newton to such modern investigators as Sir James Jeans and Harold Jeffreys. Discusses structure and movements of the moon, sun, stars, planets, and various celestial phenomena; includes history of telescopic observation and offers direction to the amateur who wants to make his own telescope at modest expense.

TIME AND ITS MYSTERIES, series I, by Robert A.
Millikan, John C. Merriam, Harlow Shapley,
and James H. Breasted. New York: New York
University Press, 1936. 102 p. illus. 22 cm. \$2.00.
433

Contents: Time, by Robert A. Millikan. Time to change in history, by John C. Merriam. On the lifetime of a galaxy, by Harlow Shapley. Beginnings of time-measurement and the origins of our calendar, by James H. Breasted.

Note: The first of a series of lectures to be presented under the auspices of the James Arthur Foundation, which was established for the purpose of studying the subject of time in the light of its historical significance and its philosophical implications. These four lectures provide an informative discussion of

the historical development of the time concept and the various methods and units employed in temporal measurement. There is a combined index to the four papers.

TIME AND ITS MYSTERIES, series II: four lectures
given on the James Arthur Foundation, New
York University, by Daniel Webster Hering,
William Francis Gray Swann, John Dewey, Ar-
thur H. Compton. New York: New York Uni-
versity Press, 1940. 137 p. illus. 22 cm. \$2.00. 434

Contents: The time concept and time sense among cultured and uncultured peoples, by Daniel Webster Hering. What is time? by William Francis Gray Swann. Time and individuality, by John Dewey. Time and the growth of physics, by Arthur H. Compton. Index.

Note: Second in the series of lectures on the appreciation of time in its essential nature and its influence upon man in his conduct and mode of living. The four lectures present the subject from the viewpoints of cultural development, psychology, philosophy, and modern physics. There is a combined index for the four papers.

WATSON, FLETCHER GUARD

Between the planets. Philadelphia: The
Blakiston Company, 1941. 222 p. illus. 22 cm.
(The Harvard books on astronomy, edited by
Harlow Shapley and B. J. Bok) \$2.50. 435

Contents: Surveying the solar system. The little planets. Whirling fragments. Comets in motion. Anatomy of a comet. Shooting stars. Meteor shower. A meteorite falls. Meteorites in the laboratory. Betwixt and between.

Note: Written for laymen, beginning students and amateur astronomers, this book summarizes our knowledge of comets, meteors, asteroids, and meteorites. While it includes the latest discoveries about these bodies, it also considers the multitude of vexing problems yet unexplained. Among topics discussed are: the past history of comets; the crystalline structure of meteorites; the motions and number of asteroids; meteor showers; and the formation of meteor craters. The interrelationships between the several varieties of bodies are stressed and the ways in which they might have been formed are discussed critically in relation to the formation of the planetary system.

Textbooks

BAKER, ROBERT HORACE

Astronomy; a textbook for university and col-
lege students. Third edition. New York: D. Van
Nostrand Company, Inc., 1938. 527 p. illus. 24
cm. \$3.75. 520 B17a 1930 436

Contents: Introduction. Aspects of the sky. The motions of the earth. The earth and the moon. The solar system. The other planets. The sun. The stars. Stellar motions. The constitution of the stars. The galactic system. The exterior systems. Index of names. Index of subjects.

Note: A text for introductory college courses in astronomy, presupposing little previous acquaintance with physical science and limited preparation in elementary mathematics. The author has endeavored to include recent discoveries and viewpoints. The third edition has been revised to cover new data and new viewpoints brought forward between 1933 and 1938. The historical treatment of the planetary motions has been extended, the account of the galactic system has been rewritten, and new features added, including lists of questions at the ends of the chapters, improved star maps, and reproductions of recent photographs. The author has also produced *An introduction to astronomy*, second edition, New York: Van Nostrand, 1940, 315 p., \$3.00, based upon this book and designed for shorter introductory courses in the subject.

BARTKY, WALTER

Highlights of astronomy. Photographs by
Yerkes Observatory; drawings by Chichi Lasley.
Chicago: The University of Chicago Press, 1935.
280 p. illus. 23 cm. \$2.50. 437

Contents: Foreword. The earth. Time. The sky. The moon. Celestial mechanics. The solar system. The sidereal universe. Conclusion. Bibliography. Glossary of definitions.

Note: A "new plan" text of the University of Chicago, the book explains the rudiments of astronomy in the light of everyday experience. Text material is supplemented by charts which enable the beginner to solve without mathematics such problems as the location of celestial objects for any position on earth, at any specific time, for thousands of years past, present, or future. It affords a cultural background of the subject for high school and college students and for general readers curious about the universe.

DUNCAN, JOHN CHARLES

Astronomy: a text book. Third edition revised. New York: Harper & Brothers, 1935. 448 p. illus. (part col.) 22 cm. \$4.00. 439b

Contents: The celestial sphere. The optics of the telescope. The earth. The orbital motion of the earth. The moon. Eclipses of the sun and moon. Spectroscopy. The sun. The paths of the planets. The law of gravitation. The planets. Meteors and comets. Theories of the evolution of the solar system. The stars—their spectra, distances, and magnitudes. The motions of the stars. Physical properties of the stars. Variable stars. Star clusters and nebulae. The galactic system. Beyond the Milky way. Index.

Note: A standard textbook in descriptive astronomy. The present edition includes greatly revised treatments of nebulae, star clusters, and cosmography, and new sections on planetaria, the great new telescopes, new discoveries concerning the atmosphere of Venus, Jupiter, and Saturn, recent work on novae, the structure and rotation of the galaxy, distribution and motions beyond the Milky way, the expanding universe, and other topics. There are 67 full-page plates, 183 figures, and 8 star-maps on globular projection.

DUNCAN, JOHN CHARLES

Essentials of astronomy. New York: Harper & Brothers, 1942. 181 p. illus. (part col.) 22 cm. \$2.00. 439

Contents: Preface. The appearance of the sky. Appearances interpreted. Gravitation. Light. The sun's attendants. The sun and other stars. Structure and action in the universe. Appendixes. Index.

Note: This book was written with two purposes in mind: first, to provide a comprehensive textbook for use in college courses that must be completed in a shorter time than the usual college year; and second, to develop the subject in the order in which the student's interest is naturally awakened. The appendixes include constellations, relative brightness of stars, orbits of the planets, characteristics of the sun, moon, and planets, the chemical elements, the forty brightest stars, stars of rapid motion, symbols, star maps, and other tables.

FATH, EDWARD ARTHUR

The elements of astronomy; a non-mathematical textbook for use as an introduction to the subject in colleges, universities, etc., and for the general reader. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1944. 397 p. illus. 23 cm. \$3.00. 439a

Contents: Introduction. The celestial sphere. The earth. Light. The telescope. The moon. Practical astronomy. Gravitational astronomy. The sun, our nearest star. Eclipses. The planetary system. Terrestrial planets and asteroids. The major planets. Comets and meteors. The stars. The number and arrangement of the stars. Other members of the galactic system. Other galaxies. The structure of the visible universe. Cosmogony. Appendix. Indexes. Star charts.

Note: The feature of this work is the presentation of the laws, physical concepts, and observed facts of astronomy without the use of any mathematics beyond one year's work in high school algebra and plane geometry. An elementary account of the principles and methods involved in modern astronomical investigation is also included. The fourth edition contains material representing the state of astronomical science at the close of 1944, together with a rearrangement of topics of the earlier edition in the interests of further simplification. The work is well illustrated with drawings, photographs, and star maps, and there are exercises with answers at the end of each chapter.

RUSSELL, HENRY NORRIS, AND OTHERS

Astronomy; a revision of Young's Manual of astronomy. Volume II: Astrophysics and stellar astronomy, by Henry Norris Russell, Raymond Smith Dugan, and John Quincy Stewart. Boston: Ginn and Company, 1938. 510 p. illus. 23 cm. \$3.25. 439b

Contents: The analysis of light. The solar spectrum. The sun's light and heat. Atomic theory and astrophysics. The stars. The motions of the stars. Double stars. The luminosities, temperatures, and diameters of the stars. Variable stars. Star clusters and the Milky way. The nebulae. The constitution of the stars. The evolution of the stars. Supplement. Appendix. Name index. Subject index.

Note: The standard American textbook for advanced students of astronomy. Volume II is a reprint, with a new supplement and certain textual changes, of part II of the original 1926-27 work, the first part of which dealt with the mechanics of the solar system. The material for both parts is based on Young's *Manual of astronomy, a text-book*, Boston, 1902. The supplement contained in the 1938 printing of Volume II presents the important advances made in the science of astrophysics and stellar astronomy between 1927 and 1938 in the form of numbered paragraphs which refer to and amplify the corresponding sections of the main text. The chapter on the evolution of the stars has been largely rewritten in the light of new knowledge but the scope and treatment of the work remains unchanged.

SKILLING, WILLIAM THOMPSON, AND ROBERT S. RICHARDSON

Astronomy. New York: Henry Holt and Company, Inc., 1939. 579 p. illus. 22 cm. \$3.25. 440

Contents: The earth in astronomy. Locating stars on the celestial sphere. The astronomer's equipment. Our sun, the nearest star. The physical and chemical nature of the sun. Time and the calendar. The moon. Eclipses of the sun and moon. The tides. The solar system. The terrestrial planets—Mercury, Venus, Mars, Pluto. The major planets. Comets and meteors. Star distances. Arrangement of stars and their motions. Differences among stars. Galactic and extra-galactic nebulae. Appendixes: Non-technical books recommended for supplementary reading; Astronomical constants; Data concerning the solar system. Glossary. Index.

Note: Intended as a basic text for an introductory course in astronomy. The volume is therefore chiefly descriptive, with emphasis upon facts which should become the common knowledge of all educated people, and does not include technical or mathematical material which might be appropriate to a later course.

WYLIE, CHARLES CLAYTON

Astronomy, maps, and weather. New York: Harper & Brothers, 1942. 449 p. illus. 24 cm. \$3.00. 441

Contents: The celestial sphere. The constellations. Telescopes. The earth. The motions of the earth. The seasons and the calendar. The weather. The clouds. Weather forecasting. Maps. Time. Celestial navigation. The moon. Eclipses. The paths of the planets. The planets themselves. Comets, meteors, and meteorites. The sun. The stars. Our galaxy and others. Appendix. Index.

Note: A basic textbook for a liberal arts science course, modified to emphasize the facts and principles basic to Air Corps work. It emphasizes familiarity with the constellations and bright stars; practice in timing by a watch and comparison of timepieces; determination of time, longitude, latitude, and the Summer line of position; the fundamentals of meteorology; the fundamentals of map projection and map reading; and practice in computing by tables and by slide rule. The text includes 100 figures and some 125 photographic illustrations.

Telescopes

COLLINS, ARCHIE FREDERICK

The greatest eye in the world: astronomical telescopes and their stories. New York: D. Appleton-Century Company, Incorporated, 1942. 266 p. illus. 21 cm. \$3.00. 442

Contents: The evolution of the telescope. How telescope lenses are made. How telescope mirrors are made. The mounting of telescopes. The Royal Observatory. The United States Naval Observatory. The Harvard College Observatory. The Yale University Observatory. The Lowell Observatory. The Lick Observatory. The Yerkes Observatory. The Mount Wilson Observatory. The Palomar Observatory. Index.

Note: A popular account of the evolution of the telescope from the invention of the refractor in Holland circa 1608 to the construction of the 200-inch reflector of Palomar, together with an outline of telescope-making technique and detailed descriptions of nine of the world's largest observatories. The particular construction and specialized uses, including various auxiliary instruments employed with these telescopes, are explained and pictured so that they can be readily understood. There are about 80 photographs and drawings.

INGALLS, ALBERT GRAHAM, EDITOR

Amateur telescope making. With contributions by R. W. Porter, and others. With a foreword by Harlow Shapley. New York: Munn and Co., 1935. 499 p. illus. 20 cm. \$4.00. 443

Contents (abridged): Mirror making for reflectors. Making the mounting. 100-foot sun telescope. Finding celestial objects. Telescope housings. The prism or diagonal. Optical flats. The Cassegrainian. Making eyepieces. The amateur's telescope. Tools and materials—grinding. Foucault test. Polishing. Figuring. The paraboloid—zonal testing. Silvering. Mounting the mirror. Mounting the lens. The HCF lap. Motor drives. Grinding and polishing machines. Telescope oculars. Astronomical oculars. Solar phenomena. Compound telescopes. Flotation systems—machine polishing. Making astronomical flats. Celestial photography. Ronchi test. Simple clock drive. Index.

Note: A standard American work for amateur astronomers. Essentially it is a compilation of periodical articles and other information written by various persons and at various times. There is a general index. A companion volume is the author's *Amateur telescope making, advanced*, described below.

INGALLS, ALBERT GRAHAM, EDITOR

Amateur telescope making, advanced. A sequel to Amateur telescope making. New York: Munn and Company, Inc., 1944. 650 p. illus. 20 cm. \$5.00. 444

Contents (abridged): Part I, Having to do with the construction of optical instruments: Mirror making. Metal mirrors and flats. Prisms, flats, mirrors. Small lenses. Metal parts. The refractor. Telescope drives. Springfield mounting. The Schmidt camera. A precision clock. Micrometers. Part II, Having to do with some of the more practical aspects of observing: Uses for telescopes. Meteor photography. Stellar photography. Eclipse photography. Atmosphere, telescope and observer. The richest-field telescope. Index.

Note: A collection of periodical articles and other matter on topics of interest to telescope makers, amateur astronomers, and persons concerned with the construction of precision optical instruments. Generally speaking, the material in this collection is for persons already familiar with the principles and techniques covered by the editor's *Amateur telescope making* described above; but the present title contains some material, for example the article on mirror making, that should be read by the beginner.

PENDRAY, GEORGE EDWARD

Men, mirrors, and stars. Revised edition. New York: Funk & Wagnalls Company, 1939. 349 p. illus. 20 cm. \$3.00. 445

Contents (abridged): Part I, How men became acquainted with the universe: The visible universe, and how it comes that we know so much about it. How the first telescopes came to be made, and what followed. Astronomy's advances go hand in hand with improvement in telescopes. The camera and the spectroscopic become handmaidens of the telescope. Part II, Revealing the instruments that reveal the stars: The telescopes of today—how they work and how they are mounted. Something about light and how the telescope makes use of it. Good seeing, magnification, definition, catching the invisible light. Instruments that help measure and interpret what the telescope sees. Part III, Modern men and modern mirrors: How the telescope came to America—

our historic observatories. Some famous American telescope-makers and their work. Amateur telescope-makers and how they have advanced the art. The 200-inch at Mt. Palomar—the world's greatest telescope adventure. Telescopes of the future—has the ultimate been reached? Appendices: The world's largest telescopes and where they are located. Some modern observatories in North America and the Southern Hemisphere.

Note: An informative book for general readers about telescopes, the men who make them, and astronomy.

WOODBURY, DAVID OAKES

The glass giant of Palomar. With 50 drawings by the author and sketches by Russell W. Porter. New York: Dodd, Mead and Company, 1939. 368 p. illus. 24 cm. \$4.00. 446

Contents (abridged): Part I, Ancestry: Jules Verne becomes a piker. Design for genius. The world's largest—1900. Mohammed to the mountain. The sun and the stars. Reflector or refractor? The 100-inch telescope. What next? Part II, The giant is born: Another voyage begins. The men. What kind of mirror shall we have? Fused quartz. Faith, hope, and pyrex. Bringing up the rear. Big glass. "Anything may happen." Pyrex behaves. Part III, The giant is reared: Paper telescopes. A million pounds of glass and steel. Palomar. Westward ho! Fire and steel. On the mountain. Man bites glass. Twenty-one men in white. In the optical shop. A martyr to the cause. Part IV, The voyage begins: In the giant's bosom. Science and the citizen. Whither among the stars? Open seas ahead. Whither the reader?

Note: A popular account of the construction of the 200-inch reflecting telescope from its inception and design in 1928 to the completion of the mount in 1939, including related discussions on the theory of telescope design, the difficulties encountered in pouring the mirror, and the story of the men behind its construction. Told in a journalistic style with a considerable amount of dialogue and anecdote. There is a list of ten books for further reading for the layman.

Practical Astronomy

NASSAU, JASON JOHN

A textbook of practical astronomy, primarily for engineering students. New York: McGraw-Hill Book Company, Inc., 1932. 226 p. illus. 24 cm. (McGraw-Hill astronomical series) \$3.00. 447

Contents: Introduction. Astronomical systems of coordinates. Time—general principles. Secular and periodic changes—The American Ephemeris and nautical almanac-star catalogues. Conversion of time. Corrections to observations. Instruments. Determination of time. Latitude. Azimuth. The solar attachment. Determination of time by the transit instrument. Longitude. The Zenith telescope.

Note: Presents fundamental concepts of practical astronomy. Designed especially for engineering students and engineers.

SERVICE, JERRY HALL

Essentials of engineering astronomy. New York: Prentice-Hall, Inc., 1937. 167 p. illus. 23 cm. \$3.35. 448

Contents: Introduction. Summary of spherical trigonometry. The celestial sphere. Time. Corrections to observed latitudes. Outline of the problems of engineering astronomy. Star identification. Determination of azimuth, latitude and longitude. The striding level and solar attachments. The sextant and determination of position and compass error at sea. Equations and forms for use with computing machine.

Note: Designed both for college students in schools of engineering and practicing engineers, this book covers the basic principles of spherical trigonometry and astronomy, and the necessary observation and computation techniques. It contains numerous forms that illustrate the recording of observations and computations, problems which have a tie-up with sample forms, and many references for collateral reading. An edition published in 1935 was entitled: *A working outline of engineering astronomy*.

Geodesy and Geodetic Surveying

AMERICAN SOCIETY OF CIVIL ENGINEERS

Horizontal control surveys to supplement the fundamental net. Prepared by the Committee of the Surveying and Mapping Division on Control Surveys. Philip Kissam, chairman. New York: The American Society of Civil Engineers, 1940. 55 p. illus. 22 cm. (American Society of Civil Engineers. Manuals of engineering practice. No. 20) Paper, \$0.90. 448a

Contents: Introduction. General considerations. The National control net. Supplemental triangulation. Traverse. Computations. Bureau of Surveying and Mapping.

Note: A manual designed to introduce the method of expanding the rectangular coordinate control system established by the U. S. Coast and Geodetic Survey for the benefit of those students and surveyors not familiar with this work. It covers all the operations and information considered essential, partly by text but chiefly through references. It is intended for use in conjunction with Hodgson's *Manual of second and third order triangulation and traverse*, Washington, D.C., 1929. The references in the text are to this and other publications of the U. S. Coast and Geodetic Survey.

HOSMER, GEORGE LEONARD

Geodesy; including astronomical observations, gravity measurements, and method of least squares. Second edition, revised and enlarged. New York: John Wiley and Sons, Inc., 1930. 461 p. illus. 23 cm. \$4.50. 449

Contents: Geodesy and geodetic surveying. Triangulation. Baselines. Field-work of triangulation. Measurement of horizontal angles. Astronomical observations. Properties of the spheroid. Calculation of triangulation. Calculation of geodetic positions. Figure of the earth. Gravity measurements. Precise, or first-order, leveling. Trigonometric leveling. Map projections. Application of method of least squares to the adjustment of triangulation. Appendix. Index.

Note: This textbook emphasizes the theory as well as the practical details of field work. The material includes more detail than can actually be covered in a course of moderate length, the purpose being to give the student a broad outlook and encourage him to pursue the subject farther. Methods of observing and computing have been brought into conformity with current U.S. Coast and Geodetic Survey practice. The chapters on astronomy and least squares are intended only as introductions to the standard works. A knowledge of first-year college mathematics is assumed. Short reference lists are given after three of the chapters and a collection of useful formulas and tables is included in the appendix. Principal changes in the second edition cover new designs for theodolites, vertical collimators, rods, other instruments, and towers, the use of radio signals for determining longitude, and the addition of Clarke's formulas for geodetic positions.

NATIONAL RESEARCH COUNCIL

Physics of the earth. Volume II: The figure of the earth. A collection of short papers, written by leading scientific men in several branches of geophysics, and treating of the size and shape of the earth. Washington, D.C.: The National Research Council of the National Academy of Sciences, 1931. 286 p. illus. 24 cm. (Bulletin of the National Research Council. No. 78, February, 1931) Paper, \$3.00; cloth, \$3.50. 450

Contents: Tides, ocean, and earth: Introduction, by G. T. Rude. Tidal theory, by A. T. Doodson. Tidal computations and predictions, by Paul Schureman. Mean sea-level, by H. A. Marmer. Earth tides, by W. D. Lambert. Tidal friction, by W. D.

Lambert. Gravity, deflection of the vertical, and isostasy: Isostasy, by William Bowie. The influence of isostasy on geological thought, by Harry Fielding Reid. The shape and size of the earth, by W. D. Lambert. Determination of "g" by means of the free swinging pendulum, by C. H. Swick. Gravity measurements with the Eötvös torsion balance, by Donald C. Barton. Geodetic instruments, by D. L. Parkhurst. On some of the greater problems of physical geology, by Clarence L. Dutton. The determination of elevations, by H. G. Avers. The determination of geographic positions, by C. V. Hodgson. Variation of latitude, by W. D. Lambert and others. Index.

Note: The second in a series of nine volumes on various aspects of geophysics, designed to give the reader who is presumably a scientist but not a specialist in the subject an idea of its scope together with a forward-looking summary of its outstanding problems. The first, third, fifth, and seventh volumes of this series are out of print; volumes IV, VI, VIII, and IX are described in separate notes (see Index). The present volume consists of sixteen brief technical papers dealing with the mathematical and theoretical aspects of tidal forces, geodesy, surface equilibrium and gravitation, and variation of the earth's axis within the body of the earth. References to the pertinent world literature occur at the close of each paper.

SHARP, HOWARD OAKLEY

Geodetic control surveys. Second edition. New York: John Wiley & Sons, Inc., 1943. 132 p. illus. 28 cm. \$3.50. 451

Contents: Geodetic surveying. Method of least squares. Calculation of geodetic positions. Traverses. Precise leveling. Map projection. Trigonometric leveling. Appendix: Readjustment of triangulation. Index.

Note: Designed to familiarize the reader with the survey methods and computations which he should know if he is to make precise control surveys or establish state plane coordinate systems. The content covers both fundamental theory (in the first part of the book) and practical applications (in the later chapters). Explanations are given of the proper use of astronomic coordinates, geodetic coordinates, and plane coordinates, together with the computations needed to change from one system to another.

UNITED STATES. COAST AND GEODETIC SURVEY

Control leveling. Washington, D.C.: Government Printing Office, 1941. 20 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 226) Paper, \$0.05. 452

Contents: Instrumental equipment and methods. Computations and adjustments. History of the level net. Bench marks. Requests for leveling data. Cooperation in preserving bench marks. Specifications for vertical control. Publications.

Note: A brief outline of standards and methods as practiced by the United States Coast and Geodetic Survey in making vertical control surveys, for the guidance of surveyors who make use of the bench marks and controls established by the Bureau. Standard specifications for leveling of various grades of accuracy as set up by the U.S. Federal Board of Surveys and Maps are included. A similar bulletin covering triangulation is issued by the Bureau under title *Horizontal control data*, Special publication no. 227 (see Index).

UNITED STATES. COAST AND GEODETIC SURVEY

Control surveys and their uses, by J. H. Brittain. Washington, D.C.: Government Printing Office, 1935. 13 p. illus. 22 cm. (United States. Coast and Geodetic Survey. Serial no. 583) Paper, Gratis. 453

Contents: Extent of control surveys. Uses for control surveys. Methods employed on control surveys. Use of plane coordinates. Publications.

Note: A short pamphlet outlining the general methods employed by the U. S. Coast and Geodetic Survey in making control surveys over the interior of the country for the purpose of defining political and private boundaries and preparing topographic and other maps.

UNITED STATES. COAST AND GEODETIC SURVEY

Formulas and tables for the computation of geodetic positions. Seventh edition. Washing-

ton, D.C.: Government Printing Office, 1933. 101 p. 29 cm. (United States. Coast and Geodetic Survey. Special publication no. 8) Paper, \$0.30. 454

Contents: Introductory remarks. Solution of triangles. Spherical excess. Number of decimal places in angles and lengths. Computation of differences of latitude, longitude, and azimuth. Examples of computation. Tables. Constants for the reference spheroid. Appendix.

Note: The main table (71 p.) gives logarithmic values of six factors, which depend on the dimensions of the reference spheroid and the latitude, for each degree and minute of latitude from the equator to 71°. Formulas are given for the computation of differences of latitude, longitude, and azimuth employing these factors, arranged to give the results in seconds of arc. The Appendix contains an historical account of the development of the formulas and their relation to Bessel's and Clarke's spheroids and to the International ellipsoid. The changes in the seventh edition are confined to the introductory material.

UNITED STATES. COAST AND GEODETIC SURVEY

Formulas and tables for computation of geodetic positions on the International Ellipsoid, by Walter D. Lambert and Clarence H. Swick. Washington, D.C.: Government Printing Office, 1935. 120 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 200) Paper, \$0.15. 455

Contents: Introduction: The International Ellipsoid of Reference. Solution of triangles. Spherical excess. Number of decimal places in angles and lengths. Computation of differences of latitude, longitude, and azimuth. Arc-sine correction. Examples of computation. Tables.

Note: Although the U.S. Coast and Geodetic Survey uses the Clarke spheroid of 1866 for geographic purposes, the present tables based on the International Ellipsoid of Reference are offered for computations of positions in experimental and scientific work and for the use of other geodetic organizations and individual geodesists. The ellipsoid was adopted in 1924 by the Association of Geodesy of the International Union of Geodesy and Geophysics, and the tables published by that Association in 1928 are used as a basis for the present work. A collection of formulas and a number of illustrative examples are included.

UNITED STATES. COAST AND GEODETIC SURVEY

Horizontal control data. Washington, D.C.: Government Printing Office, 1941. 23 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 227) Paper, \$0.10. 456

Contents: Field methods and equipment. Office computations and adjustments. Explanation of horizontal control data. Uses for horizontal control data. Use of metric and English units. Cooperation in preservation of marks. Publications.

Note: A companion publication to the Bureau's *Control leveling*, Special publication no. 226 (see Index), the present work outlines the standards and methods as practiced by the United States Coast and Geodetic Survey in making triangulation observations. Standards of accuracy for first, second, and third order triangulation are included.

UNITED STATES. COAST AND GEODETIC SURVEY

Manual of first-order leveling, by Henry G. Avers. Washington, D.C.: Government Printing Office, 1939. 93 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 140) Paper, \$0.15. 457

Contents (abridged): Part I, Field methods: General instructions. Instruments. Organization and equipment of party. Errors of leveling. Bench marks. Instructions for river crossings. Instructions for stamping elevations on bench marks. Season's report. Field records and computation. Part II, Office computation: Checking field data. Corrections. Adjustment of elevations. Tables. Index.

Note: A revision of the general instructions of March, 1910 as published in U.S. Coast and Geodetic Survey Special publications nos. 18 and 22 to conform to 1939 accepted practice for

first-order leveling. The bulletin summarizes the methods employed by the U.S. Coast and Geodetic Survey and presents a collection from all available sources of material that will be of use to the field engineer or the office mathematician who may be assigned to this class of work. A number of surveying and conversion tables are included.

UNITED STATES. COAST AND GEODETIC SURVEY

Manual of first-order triangulation, by C. V. Hodgson. Washington, D.C.: Government Printing Office, 1935. 184 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 120) Paper, \$0.20. 458 ✓

Contents (abridged): General statement: Reconnaissance. First-order triangulation. Base measurement. Azimuths. Special surveys. Miscellaneous tables. Index.

Note: This manual summarizes the methods prevailing as of the date of publication in the U.S. Coast and Geodetic Survey in executing first-order triangulation and base measurement. Emphasis is upon the practical application of theory and upon approved use of instruments and records. Organization of party, routine procedure, sources of error, field computations, corrections to measured lengths, and precautions against errors are among the topics discussed. The work is useful to surveyors generally, although primarily intended for the guidance of officers of the U.S. Coast and Geodetic Survey. A number of miscellaneous surveying tables and sample records are included.

UNITED STATES. COAST AND GEODETIC SURVEY

Manual of plane-coordinate computation, by Oscar S. Adams and Charles N. Claire. Washington, D.C.: Government Printing Office, 1935. 271 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 193) Paper, \$0.35. 458a ✓

Contents (abridged): Nature of surveying. Choice of plane systems. Formulas for the Lambert projection. Formulas for the transverse Mercator projection. List of states with their respective grids. Explanation of plane or grid azimuth. Computing plane coordinates on the Lambert and on the transverse Mercator projections. Applications of the grids to computation. Computation of a first-order traverse in North Carolina. Scale factors. Adjustment of a quadrilateral. Two short traverse adjustments. Adjustment of a small arc of triangulation in an overlap section of two systems. Index.

Note: This manual of computations shows how to use the various systems of plane coordinates or grids (as determined for each of the states of the United States by the Coast and Geodetic Survey) in actual calculation. Although two different systems were used in adapting the grids to the different states, the method of using the results after the coordinates have been computed are essentially the same in both of the systems. Particular attention is given to the type of computation which involves traverse lines starting from a fixed point and ending on another fixed point. The manual also indicates how to pass from one grid system to another, including adjustment to different systems of projection. Intended to encourage engineers and surveyors to base their work on geodetic control so as to coordinate it with the national control system.

UNITED STATES. COAST AND GEODETIC SURVEY

Manual of reconnaissance for triangulation, by William Mussetter. Washington, D.C.: Government Printing Office, 1941. 100 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 225) Paper, \$0.15. 459 ✓

Contents (abridged): General statement. Fundamentals of reconnaissance: Classification of control surveys. Specifications. Classes of triangulation. Strength of figures. Field procedure: Sources of information. Horizon sketches. Example of typical reconnaissance. Altimeter profiling. Vertical-angle profiling. Compound profiling. Indirect profiling. Determination of distance. Curvature effect. Descriptions of stations. Party organization and outfit. Special problems. Index.

Note: This manual is primarily a guide to engineers of the United States Coast and Geodetic Survey, and as such presupposes some familiarity with triangulation methods of the Bureau, although most of the material is useful as a guide to outside sur-

veyors and reconnaissance engineers. The material emphasizes the increasing demands upon the reconnaissance both in accuracy and in scope of information as a result of the use of the portable steel tower signals, multiple-unit observing parties, the closing in of the triangulation net, and the use of new instruments such as the altimeter.

UNITED STATES. COAST AND GEODETIC SURVEY

Manual of second and third order triangulation and traverse. Revised edition. Washington, D.C.: Government Printing Office, 1935. 226 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 145) Paper, \$0.45. 460

Contents (abridged): General statement. Reconnaissance. Second and third order triangulation. Second and third order base measurement. Second and third order traverse. Astronomic azimuths. Constants, formulas, and tables. Index.

Note: A reference manual intended to supplement the standard textbooks teaching the basic principles of control surveys. The only discussions of theoretical principles which have been included are those necessary to a proper understanding of field methods. The manual contains condensed specifications for third-order control surveys together with more detailed instructions and specifications for second-order triangulation and horizontal control surveys in conformity with modern requirements and the approved practices of the U.S. Coast and Geodetic Survey. Surveying tables are included.

UNITED STATES. COAST AND GEODETIC SURVEY

Manual of traverse computation on the Lambert grid, by Oscar S. Adams and Charles N. Claire. Washington, D.C.: Government Printing Office, 1935. 235 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 194) Paper, \$0.20. 461

Contents (abridged): General statement. The tables. Description of the computation form. Description of an actual computation. Traverse, the Minden loop. Computations in the Hastings area. Traverses in the Columbus area. Grid lines on Geological Survey quadrangle maps. Transformation of a local system of plane coordinates to grid coordinates. Index.

Note: The Lambert projection, which has been made the basis for plane coordinate systems in many of the states, is here used in actual computation examples derived from traverse surveys made in Nebraska. The Lambert conformal conic projection with two standard parallels is the one chosen for the computation of the tables included in this publication. The work is intended for surveyors and engineers both as an illustration of computation methods and as a standard example of Coast and Geodetic Survey practice.

UNITED STATES. COAST AND GEODETIC SURVEY

Manual of traverse computation on the transverse Mercator grid, by Oscar S. Adams and Charles N. Claire. Washington, D.C.: Government Printing Office, 1935. 197 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 195) Paper, \$0.25. 462

Contents (abridged): Introduction. Description of the transverse Mercator projection. Method of computation of the projection. Computation of traverses in the vicinity of Rochester, N.Y. Traverses in New Jersey. Grid lines on Geological Survey quadrangle maps. Methods of constructing the meridians and parallels on the grid projection. Transformation of a local system of plane coordinates to grid coordinates. Index.

Note: A supplement to the Bureau's Special publication no. 193, entitled *Manual of plane-coordinate computation*, Washington, 1935, and a companion volume to Special publication no. 194, entitled *Manual of traverse computation on the Lambert grid*, Washington, 1935, both of which are listed in this bibliography (see Index). The transverse Mercator projection, while not as easily illustrated as the Lambert projection, is just as simple in conception and use, and is here illustrated by actual computation examples from U.S. Coast and Geodetic traverse surveys made in Rochester, N.Y., and in the vicinity of Newark, N.J. These were computed especially for this publication and are

offered to engineers and surveyors as typical examples of standard practice.

UNITED STATES. COAST AND GEODETIC SURVEY

Relation between plane rectangular coordinates and geographic positions. Revised March, 1936. Washington, D.C.: Government Printing Office, 1936. 90 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 71) Paper, \$0.10. 463

Contents: Introduction. Computation of plane coordinates from geographic coordinates. Computation of geographic coordinates from plane coordinates. Table for transformation of coordinates. Appendix: Development of formulas for construction of tables. Sample conversion of geographic positions of five triangulation points to plane coordinates.

Note: A collection of tables designed to enable the engineer or surveyor who is making the survey of a city, town, or county to convert the geographic coordinates of the available triangulation stations readily and quickly into plane coordinates, or vice versa.

UNITED STATES. COAST AND GEODETIC SURVEY

Tables for determining the form of the geoid and its indirect effect on gravity, by Walter D. Lambert and Frederic W. Darling. Washington, D.C.: Government Printing Office, 1936. 130 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 199) Paper, \$0.05. 464

Contents: Fundamental tables. Density of compensation for computing special Bowie tables. Bowie isostatic reduction tables. Determination of the geoid from gravity anomalies. Miscellaneous tables. Index.

Note: These are essentially tables of the numerical values of the Newtonian gravitational potential for elements of volume of finite size in polar coordinates in space, density being unity. They are intended to facilitate the solution of problems involving the deviation of the geoid from the spheroid of reference, with special reference to the intensity of gravity. One set of tables gives values for determining the form of the geoid in terms of the function proposed by Stokes in 1849, while a second set provides data for determining the effect on the form of the geoid of various distributions of matter and the consequent effect on gravity at the geoid surface. A large portion of the latter set is devoted to the computation of general or fundamental tables of the Cassinis type for the warping of a level surface corresponding to assumed distributions or transfers of mass.

UNITED STATES. COAST AND GEODETIC SURVEY

Triangulation. Washington, D.C.: Government Printing Office, 1931. 20 p. illus. 24 cm. (United States. Coast and Geodetic Survey. Serial no. 529) Paper, Gratis. 465

Contents: Surveying by triangulation method. Reconnaissance. Measuring the angles. Observation towers. Accuracy of triangulation. Computations. Marking stations. Extent of triangulation. Utility of triangulation control surveys. Future needs.

Note: A brief general outline of the methods employed by the U.S. Coast and Geodetic Survey.

Gravity

JOYCE, JAMES WALLACE

Theory of the torsion balance, with a preliminary study of a modification of the instrument to decrease time of gravity measurements. Washington, D.C.: Government Printing Office, 1933. 46 p. illus. 23 cm. (United States. Bureau of Mines. Technical paper 546) Paper, \$0.05. 465a

Contents: Introduction. Gravity field. Torsion balance. Reduction of torsion-balance period. Conclusions. Bibliography. Appendixes.

Note: Presents a theoretical discussion of the principles and properties of the gravity field and the interrelation of the physical quantities involved to the torsion-balance equation, with a consideration of some of the practical features of the torsion balance and a description of the problem of reducing the free period of the balance system. The Eötvös balance is described in detail.

LEVINSON, HORACE CLIFFORD, AND ERNEST BLOOMFIELD ZEISLER

The law of gravitation in relativity. Second edition. Chicago: The University of Chicago Press, 1931. 126 p. 25 cm. \$3.50. 465b

Contents: Introduction. Elements of the tensor theory. Algebra of tensors. Differential properties. The tensors $R_{\mu\nu\lambda}$ and $G_{\mu\nu}$. Fundamental tensors. The laws of gravitation. Applications to the solar field. Appendixes.

Note: A mathematical approach to the problem of deducing or ascertaining all laws of gravitation which can be accepted on the basis of the present postulates of relativity. Since the problem can be tackled by means of the theory of tensors, the first four chapters of the book deal with tensor analysis. In chapter five all the possible forms of the law of gravitation are expressed by tensor equations.

ROEVER, WILLIAM HENRY

The weight field of force of the earth. St. Louis, Mo.: Washington University Board of Publication, 1940. 84 p. illus. 24 cm. (Washington University studies—New series. Science and technology. No. 11) \$1.50. 466

Contents: Laws of relative motion. Effects of an atmosphere. Gravitational effects. The weight field. Geodetic considerations. Analytical treatment. The differential equations of motion of a projectile. Appendix.

Note: A monograph presenting a mathematical treatment of some of the statical and dynamical phenomena which are observable in the earth's weight field of force, including tidal effects, effects of precession and nutation, moments actuating the Eötvös torsional balance, and other geodetic aspects.

SWICK, CLARENCE HERBERT

Pendulum gravity measurements and isostatic reductions. Washington, D.C.: Government Printing Office, 1942. 82 p. illus. 26 cm. (United States. Coast and Geodetic Survey. Special publication no. 232) Paper, \$0.35. 467

Contents: Brown pendulum apparatus. Gravity determination with pendulums. Computation of gravity results. Topographic and isostatic computations and reductions. Index.

Note: This publication supersedes Special publication no. 69, *Modern methods for measuring the intensity of gravity*, Washington, D.C., 1921, which related principally to the Mendenhall type of pendulum apparatus. In 1932 this apparatus was largely superseded by the Brown gravity apparatus, the principal consideration of which is to speed up the observations without any loss of accuracy. The manual includes a brief description of the Brown pendulum and of the corresponding methods and computations, including isostatic reductions.

VENING MEINESZ, FELIX ANDRIES, AND F. E. WRIGHT

The gravity measuring cruise of the U.S. submarine S-21. With an appendix on computational procedure by Miss Eleanor A. Lamson. Washington, D.C.: Government Printing Office, 1930. 94 p. illus. 31 cm. (United States. Naval Observatory. Publications. Series 2, Vol. XIII, Appendix I) Paper, \$0.30. 467a

Contents: Introduction. The measurement of gravity. Evaluation of gravity from the records. Measurements of a record and computations needed to determine the value of gravity. Results

obtained on the cruise of the U.S. submarine S-21. Summary. Additional evidence on the meaning of gravity anomalies. Appendix: Reduction of an observation made at sea for the determination of the value of gravity.

Note: A monograph summarizing the results of gravity measurements at sea made in 1928 under the supervision of the United States Naval Observatory. Since the land covers only a quarter of the surface of the globe, measurements of gravity at sea in different parts of the world are needed for a more accurate determination both of the figure of the earth and of the state of equilibrium of its surface features. A submarine was used to minimize the effect of rough seas on the pendulum measurements, and the area covered embraces the Gulf of Mexico and the Caribbean Sea.

Celestial Mechanics

BROUWER, DIRK

Theory and tables of the motion of (588) Achilles. New Haven, Conn.: Yale University Observatory, 1933. 11 p. 31 cm. (Yale University Astronomical Observatory. Transactions. Vol. 6, part VII) Paper, \$0.38. 467b

Note: This paper summarizes the results of computations and observations leading to the development of a numerical theory of the Trojan asteroid (588) Achilles, derived in part from an earlier theory by E. W. Brown of the Yale Observatory. The portions of the theory that have been completely recomputed are the intermediate orbit and the perturbations by Saturn, to which several new terms have been added. The paper is thus a continuation of the Observatory's *Transactions*, Volume 3, parts I, III, New Haven, 1926, in which the original theory first appeared.

BROWN, ERNEST WILLIAM, AND DIRK BROUWER

Tables for the development of the disturbing function with schedules for harmonic analysis. New Haven, Conn.: Yale University Observatory, 1932. 84 p. 30 cm. (Yale University Astronomical Observatory. Transactions. Vol. 6, part V) Paper, \$2.21. 467c

Note: These tables of the coefficients in the development of the disturbing functions have been so constructed that for the great majority of problems which demand the calculation of general planetary perturbations, the values of the coefficients may be extracted by interpolation with first differences only. To conserve space, those factors of the coefficients which vary rapidly are separated from those which vary slowly, the former being simple functions of the argument easily computed, while the latter portions are tabulated. Since the product of four factors will, in general, be needed for the calculation of any term in the disturbing function or disturbing forces, the logarithms rather than the natural values are tabulated in all cases. While the tables are available for any mode of development of the planetary theory, the calculations of the disturbing forces can best be reduced to routine computation by harmonic analysis, schedules for which are shown in detail with examples.

BROWN, ERNEST WILLIAM, AND DIRK BROUWER

Theory of the eighth satellite of Jupiter. New Haven, Conn.: Yale University Observatory, 1930-37. 2 parts. 30 cm. (Yale University Astronomical Observatory. Transactions. Vol. 6, parts IV, VIII) Paper, Part IV, \$0.53; Part VIII, \$0.90. 467d

Note: A development of the theory and an analysis of results obtained from a new method of obtaining a general orbit for the motion of Jupiter's eighth satellite. The first part of the theory, published in *Transactions*, Volume 6, part IV, contains the development and results for the intermediate orbit which is defined to include all terms depending on the eccentricity and the ratio of the mean motions with such other portion of the disturbing function as could be included without altering the form of the solution. The second part, contained in *Transactions*, Volume 6, part VIII, covers the additional portions depending on the inclination, the first power of the ratio of the parallaxes, and the first power of the eccentricity of Jupiter.

CHANDRASEKHAR, SUBRAHMANYAN

Principles of stellar dynamics. Chicago: The University of Chicago Press, 1942. 251 p. illus. 24 cm. (Astrophysical monographs, sponsored by the Astrophysical journal; edited by P. W. Merrill, J. H. Moore, Harlow Shapley, and Otto Struve) \$5.00. 468

Contents (abridged): Kinematics. The time of relaxation of a stellar system. Galactic dynamics; the dynamics of differential motions. General dynamics of stellar systems: spiral structure. The dynamics of star clusters. Appendixes: Deflection of a star in the orbital plane according to the two-body problem. The general theory of the stability of orbits. Astronomical contents and data. Subject index.

Note: The theory of stellar dynamics is presented as a branch of classical dynamics in this monograph, thus enabling the author to formulate certain abstract problems which have interest for general dynamical theory apart from the practical context in which they arise. The principal problems presented are the question of the time of relaxation of a stellar system, and the solutions of the equation of continuity centering around Liouville's theorem, including a study of the dynamical implications of the existence of a field of differential motions.

CRAWFORD, RUSSELL TRACY

Determination of orbits of comets and asteroids. New York: McGraw-Hill Book Company, Inc., 1930. 233 p. illus. 26 cm. (McGraw-Hill astronomical series) \$4.00. 469

Contents: The equations of motion and their integration. Relations between the time and the place in the orbit. Determination of a geocentric place (IIA Δ) for a given date from known elements of an orbit. The ephemeris. Determination of the orbit from observations (Leuschner's method). The differential correction (Leuschner's method). Parallax, aberration, comparison of an observation with an ephemeris. Merton's modification of Gauss's method.

Note: A textbook for a one-semester course in the introduction to theoretical astronomy. The book offers complete information for the computation of orbits of bodies moving about the sun as center of attraction.

ECKERT, WALLACE JOHN

The general orbit of Hector. New Haven, Conn.: Yale University Observatory, 1933. 11 p. 30 cm. (Yale University Astronomical Observatory. Transactions. Vol. 6, part vi) Paper, \$0.34. 469a

Note: In this investigation the general orbit of the asteroid Hector is determined by the application of E. W. Brown's theory giving expressions for the co-ordinates explicitly in terms of time. The first approximation to the values of the constants of the theory are obtained by the application of harmonic analysis to several osculating orbits, while the second is made with the help of approximate expressions obtained from the general orbit of Achilles.

HERRICK, SAMUEL, JR.

The Laplacian and Gaussian orbit methods. Berkeley, Calif.: University of California Press, 1940. 56 p. 26 cm. (University of California publications. Contributions of the Los Angeles Astronomical Department. Vol. 1, no. 1) Paper, \$0.75. 469b

Contents (abridged): Introduction. Part I, Expansion of the Laplacian first approximation in series. Part II, The second approximation of Poincaré. Part III, The second approximation in the Gaussian method. Part IV, The Lagrange-Leuschner solution. Part V, A comparison of efficiency.

Note: Primarily a comparative study of the two methods of orbit computation (as applied to three observations) in the forms to which the principal contributors to these methods have reduced them. In Part I it is shown that the dynamical equations between the geocentric and heliocentric distances in the Laplacian

method can be expanded into series which have three forms, of which two are comparable to, and the third identical with, the corresponding expressions in the Gaussian method. These two methods are later compared in Part V with respect to efficiency in calculation. Bibliographic references appear in footnotes.

LEUSCHNER, ARMIN OTTO

Research surveys of the orbits and perturbations of minor planets 1 to 1091, from 1801.0 to 1929.5. Berkeley, Calif.: University of California Press, 1935. 519 p. 29 cm. (Lick Observatory, University of California. Publications. Vol. XIX; Berkeley Astronomical Department (Students' Observatory), University of California. Contributions, II) \$8.00. 470

Note: A preliminary experiment in the preparation of Research Surveys of 21 minor planets was published in 1922 by the National Research Council. In 1925, the General Assembly of the International Astronomical Union endorsed the continuation of the Surveys for all the minor planets, by international financial cooperation. The wealth of new material constantly appearing made it necessary to restrict the Surveys to the minor planets 1 to 1091, and to set June 30, 1929, as the latest date of publication of material to be included in this volume. At the time of its publication the extension of the Surveys to the 1301 minor planets which had received numbers, and the bringing up of published material was practically completed to January, 1934. This new material will be printed in a revised edition or in an appendix to the present Survey.—The general plan of arrangement of material for each minor planet is as follows: Discovery data. Preliminary orbits with basic dates. Later improvements of orbits with information concerning the perturbations that have been taken into account, including if available, statements in regard to methods used; nature of the perturbations, whether special or general; accuracy aimed at by the author, and other pertinent data. Tabulation of residuals in later oppositions after each new orbit in so far as they are essential or useful in appraising the degree of precision attained through the new investigation as an aid for the selection of fundamental data as a basis for the improvement of elements and theories. Largest perturbation terms with periods and amplitudes for planets (1) to (500). Comments and interpretations by authors or by the writer and his collaborators are interspersed throughout the Surveys. Tabulation of the more important sets of elements.

MOULTON, FOREST RAY

An introduction to celestial mechanics. Second revised edition. New York: The Macmillan Company, 1935. 437 p. illus. 22 cm. \$4.50. 471

Contents: Preliminary considerations. The constellations. Telescopes. The earth. The motions of the earth. Time. The moon. Eclipses. The law of gravitation. The solar system. The planets. Meteors and comets. The sun. Evolution of the solar system. Stars and nebulae. The sidereal structure. Table of constants. Index of names. Star and nebulae index. General index.

Note: The author develops the subject from the familiar earth and evening constellations out to the galaxies and supergalaxies of stars. Useful star maps and tables of condensed statistical information are provided. Lists of questions and exercises have been supplied at frequent intervals throughout the book to add to its usefulness as a text for college students.

WILLIAMS, KENNETH POWERS

The calculation of the orbits of asteroids and comets. Bloomington, Ind.: The Principia Press, Inc., 1934. 214 p. illus. 26 cm. \$3.25. 472

Contents: Astronomical coordinates. Interpolation. The problem of two bodies. The position in the orbit. The question of a direct solution. Intermediate elements. The method of Laplace. The method of Gauss. The method of Olbers. The construction of an ephemeris. Appendix. Bibliography. Index.

Note: A treatise intended to acquaint students of advanced college mathematics with the problem of orbit computation, which historically is one of the most important problems the mathematician has solved, having significance not only for astronomy but for science in general. The basic theory as developed by Euler, Lagrange, Laplace, and Gauss is outlined as simply as the material will permit, and only fundamental methods and procedures are considered. There are numerous exer-

cises to give the student familiarity with the nature of the problem although the many questions which may arise in orbit work are not covered except briefly. References are, however, made to books and periodicals where more information can be found. Machine computation dominates the book, but logarithmic calculations are not avoided. Intended mainly for the student of mathematics who has no expectation of specializing in the subject of orbit computation, but useful for the student of astronomy as well.

WINTNER, AUREL

The analytical foundations of celestial mechanics. Princeton, N.J.: Princeton University Press, 1941. 448 p. 23 cm. (Princeton mathematical series 5) \$6.00. 473

Contents: Dynamical operations. Local and non-local questions. Dynamical systems. The problem of two bodies. The problem of several bodies. Introduction to the restricted problem. Historical notes and references. Index.

Note: Canonical systems, theory of phase space, perturbation theory, dynamical systems are linked together in this volume for advanced students of mathematics. The historical problem of three bodies finds a special emphasis. Beyond its technical mission, the book serves as an introduction to the analytical treatment of theoretical dynamics. Both the formal aspects and the questions in the large are presented in the form in which they are always applied, not only in the theory of the solar system, but also in quantum theory. References are included.

Tides

PILLSBURY, GEORGE BIGELOW

Tidal hydraulics. Washington, D.C.: Government Printing Office, 1940. 283 p. illus. 23 cm. (United States. War Department. Corps of Engineers, U.S. Army. Professional paper of the Corps of Engineers no. 34) \$1.00. 475

Contents: Tides: General definitions—tide producing forces—equilibrium tides. Harmonic analysis of tides. Characteristics of the tides. Tidal datum planes. Tidal currents: Relation of current to surface slope. Continuity of flow in long tidal channels—cubature. Frictionless flow in a long canal of uniform dimensions; seiches. Computation of tides and currents in long canals when flow is not frictionless. Tides and currents in estuaries and inlets. Offshore tidal currents; reduction of current observations and current prediction. Appendix: Equivalents and constants. Derivation of reduction factors $F(Mn)$ and $1.02F$, and correction factor i/B .

Note: The treatment of the tides and of tidal datum planes contained in this text is drawn from the manuals issued by the United States Coast and Geodetic Survey and from Harris's *Manual of tides*, published in past reports of that Survey, now out-of-print. The detailed procedure explained for the cubature of a channel is that developed in the United States Engineer Office at Philadelphia. The volume also describes a method of computing tidal currents from the constants commonly used for steady flow and the application of these principles to natural tidal channels. The book contains many tables and formulas as illustrative material.

UNITED STATES. COAST AND GEODETIC SURVEY

Manual of harmonic analysis and prediction of tides, by Paul Schureman. Revised (1940) edition. Washington, D.C.: Government Printing Office, 1941. 317 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 98) \$1.00. 476

Contents (abridged): Introduction. Development of tide-producing force. Analysis of observations. Prediction of tides. Tables. Explanation of symbols. Index.

Note: This volume was designed primarily as a working manual for use in the United States Coast and Geodetic Survey, and describes the procedure used in that Bureau for the harmonic analysis and prediction of tides and tidal currents. The first edition of the present work was published in 1924. In this revised edition there has been a rearrangement of the material in the first part of the volume to bring out more clearly the develop-

ment of the tidal forces. Tables of astronomical data and other tables which comprise about half of the book and facilitate the computations have not been materially altered in the revised edition. There is a considerable amount of mathematical theory presented, together with sample calculations.

UNITED STATES. COAST AND GEODETIC SURVEY

Manual of tide observations. Revised (1941) edition. Washington, D.C.: Government Printing Office, 1941. 92 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 196) Paper, \$0.20. 477

Contents: Tide gages. Primary tide station. Secondary tide station. Tabulation and reduction. Temperature and density observations. Index.

Note: This pamphlet contains instruction for the observations of tides and the usual reductions necessary for the determination of datum planes and the nonharmonic quantities published in the tide tables of the U.S. Coast and Geodetic Survey. Directions for taking temperature and density observations are also included for the convenience of tide observers who take such observations in connection with their regular duties at tide stations. Corresponding instructions for tidal current observations are given in U.S. Coast and Geodetic Survey Special publication no. 215 titled *Manual of current observations* (see Index), and the harmonic computations required for the prediction of tides and currents are described in Special publication no. 98 titled *Manual of harmonic analysis and prediction of tides* (see Index).

Astrophysics

AMERICAN PHILOSOPHICAL SOCIETY

Symposium: Progress in astrophysics. Joint meeting of the American Philosophical Society and the Franklin Institute of the State of Pennsylvania, February 17, 1939. Philadelphia: American Philosophical Society, 1939. 200 p. illus. 24 cm. (American Philosophical Society. Proceedings. Vol. 81, no. 2, p. 107-307) Paper, \$1.00. 477a

Contents: Problems of the solar atmosphere, by Donald H. Menzel. The composition of the sun, by Charlotte M. Sitterly. The constitution of the planets, by Rupert Wildt. The internal constitution of the stars, by S. Chandrasekhar. Variable stars: a plan of study, by Cecilia Payne-Gaposchkin. Stars with extended atmospheres, by Otto Struve. On the physical characteristics and origin of the supernovae, by Fred L. Whipple. Observations of supernovae, by Dorrit Hoffleit. The material of interstellar space, by Theodore Dunham, Jr. Stellar energy, by Henry Norris Russell.

Note: Ten short professional papers which summarize the most recent knowledge and developments in astrophysics as of 1939. Bibliographic references are included in some of the papers.

CHANDRASEKHAR, SUBRAHMANYAN

An introduction to the study of the stellar structure. Chicago, Ill.: The University of Chicago Press, 1939. 509 p. illus. 24 cm. (Astrophysical monographs; edited by H. G. Gale, F. H. Seares and Otto Struve) \$10.00. 478

Contents: Introduction. The laws of thermodynamics. Physical principles. Integral theorems on the equilibrium of a star. Poly-tropic and isothermal gas spheres. Theory of radiation and the equations of equilibrium. Gaseous stars. Stromgren's interpretation of the Hertzsprung-Russell diagram. Stellar envelopes and the central condensation of stars. Stellar models. The quantum statistics. Degenerate stellar configurations and the theory of white dwarfs. Stellar energy. Appendixes: Physical and astronomical constants. The masses of the light atoms. The masses, luminosities and radii of the stars; derived hydrogen content. Central densities; and central temperatures. Tables of the white dwarf functions. General index.

Note: A handbook for research workers in the field of stellar structure. It treats the subject in a deductive manner. The necessary physical theories and mathematical methods are fully explained.

GOLDBERG, LEO, AND LAWRENCE H. ALLER

Atoms, stars, and nebulae. Philadelphia: The Blakiston Company, 1943. 323 p. illus. 22 cm. (The Harvard books on astronomy, edited by Harlow Shapley and B. J. Bok) \$2.50. 479

Contents: Introducing the stars and nebulae. Stellar rainbows. Atoms and molecules, stellar building blocks. The climate in a stellar atmosphere. Dwarfs, giants, and supergiants. Analyzing the stars. Pulsating stars. Exploding stars. The planetary nebulae. Between the stars. Stars with extended atmospheres. What makes the stars shine? Appendix.

Note: Mainly a discussion for educated lay readers of the facts revealed by the spectroscope about interstellar space, stars, and their atmospheres. The volume contains photographs of modern astronomers and information regarding the work they have done in this field. An appendix includes a list of astronomical constants, stellar magnitudes, ionization and excitation formulas. There is an index.

NEW YORK ACADEMY OF SCIENCES

The internal constitution of the stars, by Zdeněk Kopal, Robert E. Marshak, Henry Norris Russell, Harlow Shapley, and Jaakko Tuominen. New York: The New York Academy of Sciences, 1941. 76 p. illus. 23 cm. (New York Academy of Sciences. Annals. Vol. xli, Art. 1) Paper, \$1.00. 479a

Contents: Introduction to the conference on the internal constitution of the stars, by Harlow Shapley. The distribution of density within the stars, by Henry Norris Russell. The ellipticity and reflexion effects in eclipsing binary systems, by Zdeněk Kopal. The radiative and conductive opacities under white dwarf conditions, by Robert E. Marshak. On stellar envelopes, by Jaakko Tuominen.

Note: Four short papers and an introduction presented at a conference on the internal constitution of the stars held at the New York Academy of Sciences, October 20 and 21, 1939. Footnote references accompany each paper.

Sun and Solar System

ABBOT, CHARLES GREELEY

The dependence of terrestrial temperatures on the variations of the sun's radiation. Washington, D.C.: The Smithsonian Institution, 1936. 15 p. illus. 23 cm. (Smithsonian miscellaneous collections. Vol. 95, no. 12. Publication no. 3392) Paper, \$0.10. 480

Note: A brief technical paper based upon original solar observations and upon published data, which offers evidence to prove that the variation of the sun's radiation sensibly affects the course of temperature in terrestrial weather and that the march of terrestrial temperature supports the view that the sun is a variable star. Illustrated with solar temperature graphs.

GAMOW, GEORGE

The birth and death of the sun; stellar evolution and subatomic energy. Illustrated by the author. New York: The Viking Press, 1940. 238 p. illus. 22 cm. \$3.00. 481

Contents: The sun and its energy. The anatomy of atoms. The transmutation of elements. Can subatomic energy be harnessed? The alchemy of the sun. The sun among the stars. Red giants and the youth of the sun. White dwarfs and the dying sun. Can our sun explode? The formation of stars and planets. Island universes. The birth of the universe. Conclusion. Chronology. Index.

Note: The author discusses the evolution of the universe, with particular reference to the sun, in the light of modern knowledge of atomic structure and energy. His style is readable and his exposition is intended for the general reader.

HALE, GEORGE ELLERY, AND SETH B. NICHOLSON

Magnetic observations of sunspots, 1917-1924. Washington, D.C.: Carnegie Institution of Washington, 1938. 2 v. illus. 30 cm. (Carnegie Institution of Washington. Publication no. 498, pt. 1-2) Paper, \$6.50; cloth, \$8.50. 482

Contents: Part I. Development of the tower telescope. The 150 foot tower telescope. Magnetic fields in sunspots. Determination of polarity and full strength of magnetic fields in sunspots. Magnetic classification of sunspots. Magnetic classification of 2174 spot-groups observed during the period 1915-1924. Law of sunspot polarity. Summary of results and conclusions. Daily classification of sunspots. Plates. Part II. Charts of magnetic observations of sunspots, 1917-1924.

Note: Part I describes the solar telescopes of the Mount Wilson Observatory and gives the history of their development. The observations and theories which led to the discovery of magnetic fields in sunspots are discussed; and the methods and equipment used in measuring their field strengths and polarities are described in detail. A law describing the magnetic properties of sunspots is deduced from the observations. Part II contains the daily magnetic observations of each sunspot observed from 1917 to 1924. The observations are recorded on drawings of the solar disk reproduced on a scale of seven inches to the sun's diameter.

MENZEL, DONALD HOWARD

A study of the solar chromosphere, with an introduction by W. W. Campbell. Berkeley, Calif.: University of California Press, 1931. 303 p. illus. 31 cm. (Lick Observatory, University of California. Publications. Vol. xvii, part 1) Available only with Part II (see no. 495), paper, \$7.00. 483

Contents (abridged): The Lick Observatory flash-spectrum plates. The measures and tables. Tables of observational data of the flash spectrum. General theory of absorption and emission lines. Theoretical interpretation of the observational data. Summary.

Note: The present memoir is based upon plates of the flash spectrum secured by Dr. W. W. Campbell at the total solar eclipses of 1898, 1900, 1905, and 1908. Material derived from these plates is presented in tabular form. The data include measurements of wave-lengths in the spectral region $\lambda\lambda 3229-5328$, estimates of line intensity, determinations of the heights to which the lines may be traced upon the plates, certain peculiarities in the appearance of the various lines, their occurrence in prominences, the element or elements probably responsible for the lines, and, when known, the series or multiplet relations. The 1905 moving-plate spectrogram has been studied by means of the Moll recording microphotometer and the observed intensities of lines in the spectral region $\lambda\lambda 3913-4466$, at different levels upon the plate, have been determined upon a relative scale. As a basis for interpretation of these observational data, a number of theoretical propositions directly related to the production of emission and absorption lines are discussed in some detail.

MORGAN, HERBERT ROLLO

Results of observations with the nine-inch transit circle, 1913-1926. Observations of the sun, moon, and planets. Catalogue of 9,989 standard and intermediary stars. Miscellaneous stars. Washington, D.C.: Government Printing Office, 1933. 365 p. 29 cm. (United States. Naval Observatory publications. Second series, Vol. xiii) \$1.50. 484

Contents: Introduction. Right ascensions. Declinations. Sun, moon, and planet reductions. Formation of the star catalogue. Comparison with other catalogues. Revision of the 1900 catalogue. Collected observations of the sun, moon, and planets. Catalogue of 9,989 standard and intermediary stars. Miscellaneous stars. Standard stars 1925.0 and comparison with catalogues.

Note: The work of the 9-inch transit circle of the United States Naval Observatory for the years 1913-1926, the results

of which are contained in this volume, included: four observations of all intermediary stars between $+90^\circ$ and -30° declination; four observations of all fundamental and standard stars between $+90^\circ$ and $-35^\circ 5'$ declination; observations of the moon and the outer planets; day observations of clock stars, the sun, Mercury, and Venus; observations of 40 stars at zenith distances 75° to 80° both north and south, for the study of refraction; special lists of zenith stars including four observations of the photographic zenith tube list of 95 stars, for the study of zenith terms; and a number of miscellaneous stars. The introduction contains a description of the methods of observation and an analysis of results obtained.

PETTIT, EDISON

Characteristic features of solar prominences. Washington, D.C.: Carnegie Institution of Washington, 1932. 35 p. illus. 25 cm. (Carnegie Institution of Washington. Contributions from the Mount Wilson Observatory. No. 451) Paper, \$0.45. 484a

Note: An extension of the author's earlier studies of solar prominences published in the *Astrophysical Journal*, Vol. 50, 1919, and in *Publications of the Yerkes Observatory*, Vol. 8, part iv, 1925, the present paper is based on data obtained at Mount Wilson and at the Yerkes Observatory using the Rumford spectroheliograph attached to the 40-inch telescope at Yerkes, the 13-foot spectroheliograph and spectrographs at Mount Wilson, and the spectroheliograph invented by George Ellery Hale. The data presented cover the spectra of the prominences, their form according to the following five classes: active, eruptive, spot, tornado, and quiescent, each of which is illustrated; dimensions, volumes, and masses of prominences, distribution of the elements as determined from spectral lines; motions in eruptive prominences, light-pressure, the coronal density gradient, and height of the chromosphere in the $H\alpha$ line of hydrogen. Many photographs of prominences are included.

SCHULMAN, EDMUND

Filter measurements of solar radiation at Blue Hill Observatory. Milton, Mass.: Harvard University, Blue Hill Meteorological Observatory, 1943. 68 p. illus. 25 cm. (Harvard meteorological studies. No. 7) Paper, \$0.90. 485

Contents: Introduction. The Ångström turbidity coefficient. Studies at Blue Hill Observatory: Observations. Reduction of material. Calibrations of scale. Filter errors. Results. Summary. Bibliography. Appendix: Tables.

Note: The tables of measurements are contained in the appendix and cover over 1250 sets of observations made from 1934 to 1940. The primary objective of this general report was to assemble the filter measurements into a homogeneous group. Only preliminary conclusions based on the data appear in the introductory material, and the elimination of errors is discussed at some length.

SMITHSONIAN INSTITUTION. ASTROPHYSICAL OBSERVATORY

Annals of the Astrophysical Observatory of the Smithsonian Institution. Volume 6. Washington, D.C.: Smithsonian Institution, 1942. 207 p. illus. 31 cm. (Smithsonian Institution. Publication 3650) Paper, \$2.65. 485a

Note: The latest of a series of annals which is published at ten-year intervals, each volume of which summarizes the researches and accomplishments of the scientific staff of the Smithsonian Institution of Washington during the preceding decade. The present volume contains, among other subjects, a brief account of the theory of solar-constant determinations, discussions of corrections to solar-constant values, the method of observing and computing the solar constant of radiation, an account of the great table containing all daily solar-constant determinations from Montezuma, Table Mountain, and Mount St. Katherine, Egypt, together with a transcription of the original table, followed by a discussion of the results of solar-constant measurements including a comparison of 10-day mean values independently determined at different stations, and a summary of the long-range periodicities in solar variation, associated with

solar rotation, sunspot numbers, and the weather. There are seven plates of photographs, 18 text figures, and an index.

STETSON, HARLAN TRUE

Sunspots and their effects. New York: Whit-tlesey House, McGraw-Hill Book Company, Inc., 1937. 201 p. illus. 21 cm. \$2.00. 486

Contents: Ladies and gentlemen—the sun! Sunspots and human behavior. Sunspots and growing things. Sunspots and radio. Sunspots and business. Measuring sunlight. Weather and sunspots. Solar utilities, power and light. Of sunspots, the earth's magnetism, and carrier pigeons. Where sunspots grow. Can we predict sunspots? What make sunspots? Alongside Singapore—résumé. Appendix: Sunspot numbers.

Note: A popular account of sunspots for the general reader, written from the human point of view, and discussing various possible hypotheses which bear upon the question of solar disturbances and affairs on the earth. The book frankly presents questionable material as well as the results of more completely established facts from which the reader may draw his own conclusions. The Wolf and Wolfer sunspot numbers for each month from 1749 to 1937 are given in the appendix.

UNITED STATES. WEATHER BUREAU

Pyrheliometers and pyrheliometric measurements. Description of various pyrheliometers and auxiliary apparatus employed in measuring the intensity of solar radiation, with instructions for their care and for the reduction and use of the records. Washington, D.C.: Government Printing Office, 1931. 28 p. illus. 22 cm. (United States. Weather Bureau. Circular Q) Paper, \$0.15. 487

Contents: Introduction. Solar radiation and measurements: Duration of sunshine. Quality of sunshine. Intensity at normal incidence. Intensity on a horizontal surface. Intensity of diffuse radiation. Relative intensity of radiation from different parts of the solar spectrum. Depletion of solar radiation by atmospheric smoke and dust. Atmospheric turbidity. Suggestions for the care of pyrheliometric apparatus.

Note: A pamphlet for students and practicing meteorologists.

Solar Eclipses

BROOKS, CHARLES FRANKLIN, AND OTHERS

Eclipse meteorology, with special reference to the total solar eclipse of August 31, 1932, by Charles F. Brooks, Sterling P. Fergusson, Herbert H. Kimball, Bernhard Haurwitz, Eleanor Stabler Brooks, Jerome Namias, Charles H. Pierce, Harry Wexler, and Edward M. Brooks. Cambridge, Mass.: Harvard University Press, 1941. 109 p. illus. 25 cm. (Harvard meteorological studies. No. 5) Paper, \$1.25. 488

Contents: Synopsis. Introduction. Program, method, stations, and the weather, for the eclipse of August 31, 1932. Solar radiation and its immediate effect on temperature. The temperature changes. Changes of pressure and wind at the surface. Humidity, cloudiness, shadow-bands. Free air data obtained during the eclipse of August 31, 1932. Suggestions for further study. Bibliography.

Note: A summary of the results obtained from detailed observations from several hundred stations concentrated in New England but extending over a large part of the United States, to determine the effect upon weather of the temporary shutting off of the sun's radiant energy from the earth during an eclipse. The work devotes considerable space to a technical investigation of the main controversial point in eclipse meteorology, i.e., the question of whether or not a definite system of pressure and winds develops around the chilled and contracted air of the eclipse shadow and thus create what is referred to as "the eclipse cyclone." The bibliography lists 95 references to the world literature of the subject.

MITCHELL, SAMUEL ALFRED

Eclipses of the sun. Fourth edition, revised and enlarged. New York: Columbia University Press, 1935. 520 p. illus. (part col.) 23 cm. \$5.00. 489

Contents: Introduction. Early historical eclipses. Biblical and classical eclipses. The prediction of eclipses. The verification of eclipses. The spectroscope. The surface of the sun. Modern eclipses before 1878. Nineteenth century eclipses after 1878. Personal experiences in 1900 and 1901. The Spanish eclipse of 1905. The American eclipse of 1918. Eclipses since 1923. The structure of the atom. Photographing the flash spectrum. Discussing the flash spectrum. The importance of ionization. Heights and related problems. Heights and distribution of vapors. The corona. Coronal theories. The Einstein theory of relativity. Has the Einstein theory been verified? Shadow bands. The eclipses of 1932 and 1934. Index.

Note: A discussion of the eclipses of the sun and the observations made, together with their application to such physical theories as relativity and the structure of the atom. The work, written in non-technical style for the beginning student and the educated layman, includes a history of eclipses from earliest records to the present, with particular emphasis upon eclipses the author has observed since 1900. There are many photographs of eclipses, sun spots, solar spectra and corona, as well as several color reproductions of paintings of eclipses. The fourth edition has an additional chapter on results obtained during the 1932 and 1934 eclipses.

NATIONAL GEOGRAPHIC SOCIETY, WASHINGTON, D.C.

National Geographic Society—U.S. Navy Solar Eclipse Expedition of 1937 to Canton Island. Washington, D.C.: National Geographic Society, 1939. 135 p. illus. (part col.) 25 cm. (National Geographic Society. Contributed technical papers. Solar eclipse series. No. 1) Gratis. 490

Contents: Foreword, by Lyman J. Briggs. The 1937 eclipse, by S. A. Mitchell. The "total light" of the solar corona, by F. K. Richtmyer. The polarization of corona light, by F. K. Richtmyer. Spectrum of chromosphere and corona at the solar eclipse of June 8, 1937, by Theodore Dunham. Corona photography during the eclipses of 1936 and 1937, by Irvine C. Gardner. Intensity, extent, and shape of the corona, by Paul A. McNally. Corona spectra in the range of 4400A to 3300A, by Fred L. Mohler and Paul A. McNally. Relative positions of the sun and moon during the solar eclipse of June 8, 1937, as determined by photographs, by John E. Willis. Photometric measures of the corona, by John E. Willis. Broadcasting the 1937 solar eclipse from the South Seas, by Walter R. Brown. Kodachrome photographs of the corona and motion pictures of the partial phases at the solar eclipse of June 8, 1937, by Theodore Dunham, Jr., and Charles G. Thompson. Nature's most dramatic spectacle, by S. A. Mitchell (reprinted from the *National geographic magazine* of September 1937). Eclipse adventures on a desert isle, by Captain J. F. Hellweg (reprinted from the *National geographic magazine* of September 1937).

Note: A discussion of the apparatus employed, which to some extent covers new ground in eclipse observations, together with a summary of the results obtained. Two popular accounts of the expedition are also included and there are about 24 black-and-white photographs of the eclipse and one natural-color photograph and one full-color painting of the eclipse.

NATIONAL GEOGRAPHIC SOCIETY, WASHINGTON, D.C.

National Geographic Society—National Bureau of Standards Solar Eclipse Expedition of 1940 to Brazil. Washington, D.C.: National Geographic Society, 1942. 97 p. illus. 25 cm. (National Geographic Society. Contributed technical papers. Solar eclipse series. No. 2) Gratis. 491

Contents: Foreword, by Lyman J. Briggs. Design and construction of eclipse apparatus, by Irvine C. Gardner. Flash spectrum photographed with high dispersion, by C. C. Kiess. Spectral energy distribution of the standard comparison lamp used in evaluating flash spectrum of the solar eclipse of 1940, by R. Stair and W. W. Coblenz. Intensities in the flash spectrum, by C. C. Kiess and C. J. Humphreys. Contact-times of total solar eclipse of October 1, 1940, determined from photographs of the partial phases, by Paul A. McNally, S.J. Sky brightness at Patos, Brazil, during twilight and during the total solar eclipse of October 1, 1940, by E. O. Hulburt. Radio observations of the ionosphere, by T. R. Gilliland. Narrative of the expedition, by Irvine C. Gardner.

Note: A collection of technical papers summarizing the results of the expedition, with descriptions of the apparatus used. The paper on flash spectrum by Kiess presents a list of nearly 1,100 lines recorded by the flash spectrograph and measured on the Gaertner spectro-comparator, with wave length, intensity, and chemical identification for each spectrum line. Because of the clouds which partially obscured the eclipse, there is but one photograph presented of the phase of totality.

Planets

CLEMENCE, G. M.

The motion of Mercury, 1765-1937. Washington, D.C.: Government Printing Office, 1943. 221 p. illus. 29 cm. (United States Naval Observatory. Nautical Almanac Office. Astronomical papers prepared for the use of the American ephemeris and nautical almanac. Vol. xi, part 1) Paper, \$0.65. 493

Contents: Prefatory note. Introduction. The meridian observations: Weights of observations. Reference coordinates. Provisional theory of Mercury. Provisional theory of the earth. Equations of condition. Phase corrections. The semidiameter of Mercury. Observations discussed by Newcomb. Observations since 1890. Hornby's observations. Solution for the phase corrections. The mass of Venus. Corrections to Mercury's elements. Corrections to the earth's elements. The transits of Mercury. Combination of results: Adopted results. Comparison with gravitational theory. Residuals of the observations. Adopted elements of Mercury. Explanation of the diagrams. Normal equations. Equations of condition.

Note: The principal purpose of the investigation reported in this publication was the determination, from all the available observational data, of mean elements of Mercury's orbit and their secular variations. The computation of about 57,000 coefficients for the equations of condition was done with the aid of help furnished by the Works Project Administration of the District of Columbia. An important secondary purpose of the work was the determination of the mass of Venus.

WHIPPLE, FRED LAWRENCE

Earth, moon and planets. Philadelphia: The Blakiston Company, 1941. 293 p. illus. 22 cm. (The Harvard books on astronomy, edited by Harlow Shapley and B. J. Bok) \$2.50. 494

Contents: Introducing the planets. How the system holds together. Discoveries of Neptune and Pluto. Weights and measures. The earth. The earth as an abode for life. The moon's influence on the earth. Observing the moon. The nature of the moon. Jupiter, the dominating planet. The other giants—Saturn, Uranus and Neptune. The terrestrial planets—Pluto, Mercury and Venus. Mars. Origin and evolution. Appendices.

Note: This book presents in nontechnical language the latest information about the planets, their atmospheres, and the possibilities for life outside the earth. Special attention is given to the problems of origin and evolution, particularly the origin of lunar craters and the evolution of the planets. Planetary motions and the working of Newton's law of gravitation are explained. The book contains 140 figures, more than half of which are actual photographs. Charts of the moon and Mars enable the reader to identify the more conspicuous markings seen in the photographs or through the telescope. A special feature of the book is the planet finder and the star chart which enables the reader to locate directly the planets in the sky at any time from the present through 1970.

Comets

BOBROVNIKOFF, NICHOLAS THEODORE

Halley's comet in its apparition of 1909-1911. Berkeley, Calif.: University of California Press, 1931. 174 p. illus. 31 cm. (Lick Observatory, University of California. Publications. Vol. xvii, part II) Available only with Part I (see no. 483), paper, \$7.00. 495

Contents: Introduction. Material and methods of measurement and plan of the investigation. Chronological description of cometary phenomena. The spectrum of Halley's comet. Description of illustrations. General structure of the comet and discussion of results. Summary.

Note: The purpose of this investigation was to give a concise and accurate description of the phenomena of Halley's comet at its latest return. The report is based chiefly on Mount Hamilton and Mount Wilson material, very little of which had been published previously. Work done by other investigators was used if of exceptional interest, but no attempt was made to employ all available observations. The author believes, however, that everything of importance was included. The phenomena are represented on the basis of the generally accepted assumption, namely the existence of a repulsive force from the sun acting on the particles in the comet. This assumption has been fully justified in this comet as in others. As the magnitude of the repulsive force of the sun must in some way depend on the physical properties of matter in the comet, spectrograms of the comet were studied along with other material. In many cases details visible on the direct photographs could be identified in the monochromatic spectral image, a circumstance which may lead to a further elucidation of the behavior of matter in comets.

BOBROVNIKOFF, NICHOLAS THEODORE

Investigations of the brightness of comets. Delaware, O.: Ohio Wesleyan University and Ohio State University, 1941-42. 2 v. illus. 26 cm. (Ohio Wesleyan University and Ohio State University. Contributions from the Perkins Observatory. Nos. 15-16) Paper. On exchange with other institutions. 495a

Note: Part I of this investigation attempts to develop a method by means of which the available estimates of brightness of selected comets may be reduced to a common photometric system, and to present an empirical formula and reduction curve whereby observations of other comets may be reduced to the same photometric system. Part II is devoted to a determination of the law of brightness variation which is common to all comets considered in the present study and which is not at variation with any of the observational facts. Detailed results are presented and discussed following the application of the author's photometric formula $J = J_0/\Delta^{2.7n}$ to the observed brightnesses, based on a statistical summary of the total brightness of 45 comets. There is a separate bibliography for each individual comet in Part I.

HELLMAN, CLARISSE DORIS

The comet of 1577: its place in the history of astronomy. New York: Columbia University Press, 1944. 488 p. 23 cm. (Studies in history, economics and public law, edited by the Faculty of Political Science of Columbia University. No. 510) \$6.00. 495b

Contents (abridged): Introduction. Cometary theory to the end of the fourteenth century. Cometary theory from the beginning of the fifteenth century to 1577. The comet of 1577: Believers in its supra-lunar position. Those whose computation of its parallax placed the comet beneath the moon. Men with a scientific background who made no attempt to measure its distance. Preachers and poets who used the comet merely as a theme. Tracts by persons of general culture illustrating the widespread interest in nature. Authors whose tracts were primarily astrological and predicated. Conclusion. Appendix. Bibliography of tracts and treatises. Bibliography of references. Indexes.

Note: An account of contemporary astronomical and scientific thought circa 1577 relative to the comet which appeared in that

year, based on an exhaustive study of the scientific writings and histories of the time. Men such as Tycho Brahe, Joost Bürgi, Michel Varo, Simon Stevin, Christoph Rothmann, and G. B. Benedetti were among the leading men of science at the time of the comet's apparition, and their direct or indirect statements as to its nature and significance are documented and discussed, together with the opinions of laymen and the general public. The work is of importance primarily to historians of science as an indication of the change in opinion regarding comets which is traceable to the event of 1577. There is an annotated bibliography of 111 tracts and treatises covering European observations of the comet.

Constellations

BAKER, ROBERT HORACE

Introducing the constellations. New York: The Viking Press, 1937. 205 p. illus. 21 cm. \$2.50. 496

Contents: Introducing the constellations. The dippers in the north. Leo announces spring. Through the great diamond. Eastward from Arcturus. Antares of the summer. Along the Milky way. The story of Delta Cephei. The square of Pegasus in autumn. Watery constellations. The Seven Sisters. Orion in winter skies. Under the Southern Cross. Wandering stars. Index.

Note: An introduction for the general reader to the various constellations in the sky. Their positions during different parts of the year, their distinguishing characteristics, and other interesting information about them are presented in a non-technical style. A feature of the book is the excellent illustrations of various stars and star clusters.

BARTON, SAMUEL GOODWIN, AND WM. H. BARTON, JR.

A guide to the constellations. Third edition. New York: McGraw-Hill Book Company, Inc., 1943. 80 p. illus. 23 cm. (McGraw-Hill astronomical series, E. A. Fath, consulting editor) \$3.00. 497

Contents (abridged): Constellations visible from the United States. The sun, moon, planets. The zodiac. Meteors. Mythology. Detail charts and discussion. Nautical almanac. Constellations not visible from the United States. Magellanic clouds. Index.

Note: This volume for the beginner is devoted to observations without the aid of instruments. Charts and descriptive text show how to locate the constellations and principal stars. Some elementary principles of astronomy are discussed, and some myths connected with the stars are recounted. With this edition a photograph of the Milky way and three new tables have been added. The bibliography has been slightly enlarged.

Stars

ADAMS, WALTER SYDNEY, AND OTHERS

The spectroscopic absolute magnitudes and parallaxes of 4179 stars, by Walter S. Adams, Alfred H. Joy, Milton L. Humason, and Ada Margaret Brayton. Washington, D.C.: Carnegie Institution of Washington, 1935. 105 p. illus. 25 cm. (Carnegie Institution of Washington. Contributions from the Mount Wilson Observatory. No. 511) Paper, \$1.00. 498

Note: The catalogue gives the spectral type, absolute magnitude, and parallax determined for 4179 stars mostly of types later than A5 and north of declination -26° . The absolute-magnitude values are based upon the reduction tables used in previous lists by the same authors which have appeared as *Mount Wilson contributions*, Nos. 142 (1917), 199 (1921), and 319 (1926). For a group of spectrograms of stars of the same spectral type and differing absolute magnitudes, spectral lines are chosen which change in intensity with the absolute magnitude; the intensity of each variable line relative to a neighboring line of nearly fixed intensity is estimated in steps; then,

empirical calibrating curves are drawn connecting the intensity differences with absolute magnitude. The process is repeated in turn for each spectral type. For convenience, tables prepared from the curves are used in practice to convert line-intensity differences into absolute magnitudes.

AITKEN, ROBERT GRANT

The binary stars. Second edition. New York: McGraw-Hill Book Company, Inc., 1935. 309 p. illus. 23 cm. (McGraw-Hill astronomical series, E. A. Fath, consulting editor) \$3.75. 499

Contents: Introduction. Historical sketch: The early period. Historical sketch: The modern period. Observing methods, visual binary stars. The orbit of a visual binary star. The radial velocity of a star, by Dr. J. H. Moore. The orbit of a spectroscopic binary star. Eclipsing binary stars. The known orbits of the binary stars. Some binary systems of special interest. Statistical data relating to the visual binary stars in the northern sky. The origin of the binary stars. Appendix: Table of orbits of visual binary stars. Table of orbits of spectroscopic binary stars.

Note: Gives a historical sketch of work on the binary stars, presents in detail observing methods and methods of computing the orbits of visual and of spectroscopic binary stars, including among the latter the eclipsing binaries, and then discusses the contributions to knowledge resulting from the observational and orbital data including the question of the origin of binary systems.

AITKEN, ROBERT GRANT

New general catalogue of double stars within 120° of the North Pole. By Robert Grant Aitken, in succession to the late Eric Doolittle. Washington, D.C.: Carnegie Institution of Washington, 1932. 2 v. illus. 29 cm. (Carnegie Institution of Washington. Publication no. 417) Paper, \$13.00; cloth, \$15.00. 500

Contents: Introduction. Abbreviations and references. Index. Table of measures. List of corrections (1934).

Note: The catalogue gives the positions (for 1950 and for 1900), and all measures prior to 1927.0, except those listed or referred to in Burnham's *General catalogue of double stars within 121° of the North Pole*, Washington, D.C., 1906, for 17,184 stars. An eight-page pamphlet of additions and corrections was issued in 1934.

BARNARD, EDWARD EMERSON

Micrometric measures of star clusters. Edited by Edwin B. Frost, George Van Biesbroeck, and Mary R. Calvert. Chicago: The University of Chicago Press, 1931. 106 p. illus. 30 cm. (Publications of the Yerkes Observatory. Vol. vi) \$4.00. 501

Contents: Introduction. General remarks. Reductions of micrometric measures. Micrometric measures and rectangular coordinates. Appendix—difference in declination of atlas and pleione.

Note: This technical paper presents the results of the author's measurements of a certain representative number of stars in the great globular clusters. The investigation was originally undertaken in the hope of detecting motion among them or establishing a basis for future investigations of the laws of stellar motion in these densely packed masses. Although this purpose was not attained the results are here made available for future comparisons. Barnard's observations were made by direct visual method, using a micrometer attached to the 40-inch refractor of the Yerkes Observatory, rather than by the photographic plate method, although the latter has the advantages of greater accuracy and minimum observing time. His records have accordingly been reduced into a system of coordinates which makes them directly comparable with measures on photographic plates.

BIESBROECK, GEORGES VAN

Measurements of double stars. Chicago: University of Chicago Press, 1936. 51 p. 30 cm.

(Chicago University. Publications of the Yerkes Observatory. Vol. VIII, part II) Paper, \$1.50.

502

Note: A summary of micrometric measures including the results of ten years of double star work carried out between 1929 and 1936 with the 40-inch refractor of the Yerkes Observatory. The previous series was published in 1927 as Part I of Volume V of these publications. The program includes mostly close pairs showing decided orbital motion, irrespective of the catalogue in which their discovery was first announced. Special attention is devoted to pairs in critical phases, requiring the full power of the refractor. The present material carries the measures roughly to 1935.5 although measures made in 1936 are occasionally included.

BOK, BART JAN

The distribution of the stars in space. Chicago, Ill.: The University of Chicago Press, 1937. 124 p. illus. 24 cm. (Astrophysical monographs, edited by F. H. Seares and Otto Struve) \$2.50. 503

Contents (abridged): Part I, The methods of analysis: Stellar distribution and the laws of change. The analysis of space densities. The determination of the distance and absorbing power of a dark nebula. Part II, The data of observation: Star counts. The distribution of spectral types. Dark nebulae. Part III, The problems of galactic structure: High-latitude problems. The local system. The greater galactic system.

Note: The author has organized and discussed critically for advanced students and astronomers the multitudinous number and variety of researches that have been carried on in this field for the last fifteen years.

BOK, BART JAN

The stability of moving clusters. Cambridge, Mass.: Harvard University Press, 1934. 41 p. 30 cm. (Harvard University. Astronomical Observatory. Circular 384) Paper, \$0.25. 504

Note: This paper is based on the abundant evidence previously obtained that the motions of the stars in the neighborhood of our sun are largely determined by the effects of one or perhaps many distant galactic condensations, and that the tidal forces due to those star clouds tend to disrupt at least the less dense of the galactic clusters. The paper is thus an investigation of the effects of the tidal forces upon the stability of moving clusters, in which the author develops a method for studying the influence of these forces upon a cluster within a small distance of the galactic plane and moving in a circular orbit around a distant galactic nucleus. This leads to a prediction of the probable size and shape attained by a moving cluster under the combined influence of the attraction of the cluster on its members, the tidal forces of the galaxy as a whole, and the disrupting effects of chance encounters. A list of references cited is appended.

CAMPBELL, LEON, AND LUIGI JACCHIA

The story of variable stars. Philadelphia: The Blakiston Company, 1941. 226 p. illus. 22 cm. (The Harvard books on astronomy, edited by Harlow Shapley and B. J. Bok) \$2.50. 505

Contents: How variables are found. Observing the variables. Using the observations. Pulsating stars. The red variables. Explosive stars. Erratic stars. Stellar eclipses. Epilogue. Addenda. Appendix. Index.

Note: This book first introduces the reader to the technique of observation and then proceeds to analyze the present state of our knowledge about variable stars. Among the types of variable stars discussed are the explosive star or nova, the giant red variables, the "erratic" stars and eclipsing stars. The principles of spectroscopy and a few technical aspects of variable star astronomy are explained in the appendix which also includes a list of the brighter variables, a Julian calendar, and other useful tables.

CARNEGIE INSTITUTION OF WASHINGTON. DEPARTMENT OF MERIDIAN ASTROMETRY

Albany catalogue of 20811 stars for the epoch 1910, prepared at the Dudley Observatory,

✓ Albany, New York, under the direction of Benjamin Boss, director of the Department of Meridian Astrometry, Carnegie Institution of Washington. Arthur J. Roy, in charge of reductions of declinations and William B. Varnum, in charge of reductions of right-ascensions. Washington, D.C.: Carnegie Institution of Washington, 1931. 430 p. 29 cm. (Carnegie Institution of Washington. Publication no. 419) Paper, \$4.00; cloth, \$5.00. 506

Contents: Introduction. Right ascensions. Zenith distances. Catalogue. Appendix.

Note: This catalogue contains the positions of all stars brighter than magnitude 7.0 not observed at San Luis, supplemented by those stars fainter than magnitude 7.0 selected for inclusion in the *General catalogue of 33342 stars for the epoch 1950*, described below. In addition, the observation of fundamental stars was extended southward to the zenith of San Luis to provide for an overlapping zone, common to Albany and San Luis, which might serve as a means of intercomparison.

CARNEGIE INSTITUTION OF WASHINGTON. DEPARTMENT OF MERIDIAN ASTROMETRY

✓ General catalogue of 33,342 stars for the epoch 1950, prepared at the Dudley Observatory, Albany, New York, by Benjamin Boss, director, Department of Meridian Astrometry, Carnegie Institution of Washington, with the collaboration of Sebastian Albrecht, Heroy Jenkins, Harry Raymond, Arthur J. Roy, William B. Varnum and Ralph E. Wilson. Washington, D.C.: Carnegie Institution of Washington, 1936-37. 5 v. 30 cm. (Carnegie Institution of Washington. Publication no. 468) Paper, \$8.50. 507

Contents: Volume I, Introduction and explanatory tables. Volume II, Catalogue. Right ascension $0^h - 6^h$. Volume III, Catalogue. Right ascension $6^h - 12^h$. Volume IV, Catalogue. Right ascension $12^h - 18^h$. Volume V, Catalogue. Right ascension $18^h - 24^h$.

Note: A catalogue designed to furnish precise standard positions and motions of all the stars to the seventh magnitude, together with similar data regarding some thousands of fainter stars, by means of which the star position may be carried forward or backward from 1950 to any desired epoch. Volume I contains a description of the manner in which the catalogue was constructed.

DUGAN, RAYMOND SMITH

✓ A finding list for observers of eclipsing variables. Princeton, N.J.: Published by the Observatory, 1934. 33 p. 31 cm. (Princeton University Observatory. Contributions. No. 15) Gratis. 508

Contents: Introduction. The finding list. List by constellations. List of references.

Note: This finding list was planned to aid observers of eclipsing variables in selecting a program rapidly and easily. In addition to position and magnitude, elements of light variation, range and duration of eclipse, it is essential for the observer to know what has been done or is being done on a star, and he must be able to form a critical opinion as to the value of further observation. In the table, the left-hand page contains the data which should be helpful in making a selection of stars to observe, while the right-hand page gives the means of identification, information about troublesome companions, suitable and unsuitable comparison stars. A few references are given to orbital solutions and to observations, and brief critical remarks concerning the material and further observation of some of the stars. Stars south of declination -30° and those that become appreciably fainter than magnitude 13 at minimum have been omitted, as well as those on which more preliminary work must be done before even the elements of light variation become reasonably certain.

DUGAN, RAYMOND SMITH

Photometric researches: the eclipsing variables RX Hydrae [and] TW Andromedae. Princeton, N.J.: Princeton University Observatory, 1933. 19 p. illus. 31 cm. (Princeton University Observatory. Contributions. No. 14) Gratis. 509

Note: A presentation of the material collected on these two stars during observations made by the author with the polarizing photometer. The tables for each star give the epoch and period, the Julian Day number, and the measured differences in magnitude between the variable and the comparison star. There are additional tables of computed curve data and summaries of results, together with lists of references cited for each variable.

DUGAN, RAYMOND SMITH

Photometric researches. The eclipsing variable Y Cygni. Princeton, N.J.: Published by the Observatory, 1931. 50 p. illus. 31 cm. (Princeton University Observatory. Contributions. No. 12) Gratis. 510

Contents: Introduction. Part I, The period: Bibliography. Table of observed minima. Table of normal minima. Least-squares solutions. Part II, The light curve: Photometric observations.

Note: There is an unusually large amount of observational material available for the study of the period of Y Cygni. It was one of the earliest discoveries of stars of this type of variation and thus excited a great deal of sustained interest among observers of variable stars who were keenly interested in the study of periods. The literature on this subject has been carefully examined and critically abstracted in this paper. Photometric observation of this star was started at Princeton in 1915 and continued until 1928. Both spectrographic and photometric observation must be continued, but it was deemed advisable to report the data already obtained. Among other things, the report reveals that further observation of this system will be peculiarly remunerative.

DUGAN, RAYMOND SMITH

Photometric researches. The variables SX Cassiopeiae, VW Cephei. Princeton, N.J.: Published by the Observatory, 1933. 23 p. illus. 31 cm. (Princeton University Observatory. Contributions. No. 13) Gratis. 511

Contents: SX Cassiopeiae: Epoch and period. Observations. Solution. Summary. Bibliography. VW Cephei: Epoch and period. Observations. Ellipticity and reflection. Solution. Summary. Bibliography.

Note: In Part I the literature on SX Cassiopeiae has been abstracted and the published observations used in the determination of new light elements. During the few hundred periods since discovery no variation of the period is apparent. A mean light curve has been formed from the 508 observations made with the polarizing photometer at Princeton Observatory between October, 1920, and November, 1931. In Part II, 424 photometric observations of VW Cephei made mainly in the interval from October, 1928, to May, 1930, are reported. The light elements published by van Gent have been verified in an examination of all available observations. The literature is abstracted.

DUGAN, RAYMOND SMITH, AND FRANCES W. WRIGHT

A study of certain eclipsing variables for variation of period. Princeton, N.J.: Princeton University Observatory, 1939. 63 p. illus. 31 cm. (Princeton University Observatory. Contributions. No. 19) Gratis. 512

Note: A summary of the results of studies undertaken to extend back beyond the date of discovery the histories of stars known to have variable periods, to fill in intervals not covered by published observations, and to bring the record up to date with fairly homogeneous material uniformly discussed. The work provides further evidence concerning suspected changes of period, considers the justification for the sine terms and parabolic

terms often appended to linear light elements, and presents a study of the curves of residuals. The plates collected at the Harvard College Observatory since about 1890 comprise the observational material. A total of 28 variable stars are included in the study. There are 135 references to literature cited and residual curves for 19 stars.

FLINT, ALBERT STOWELL

Madison catalogue of 2786 stars for the epoch 1910 from meridian observations. Reductions by Arthur J. Roy. Washington, D.C.: The Carnegie Institution of Washington, 1939. 57 p. 30 cm. (Carnegie Institution of Washington. Publication no. 515) Paper, \$1.00; cloth, \$1.50. 513

Contents: Introduction. Observing practice. Collimation. The tangent term n . Refractions. Magnitude equation. Micrometer-contact corrections. Inclination of the zenith-distance thread. Probable errors. Reduction constants. Catalogue.

Note: A catalogue of observations made at the Madison Observatory from 1912 to 1919. At least two observations of each star were made, and the catalogue contains positions of 2403 relative stars and 383 standard stars. Data given are serial number, General Catalogue number, magnitude taken from the Harvard Catalogues, right ascension for 1910, precession and secular variation in right ascension, declination for 1910, precession and secular variation in declination, mean epoch of observation, number of observations.

FOX, PHILIP

Stellar parallaxes determined from the photographs made with the 18½-inch refractor of the Dearborn Observatory, by Philip Fox assisted by Misses Carol J. Anger, Ruth D. Bannister, Maud Bennot, [and others]. Evanston, Ill.: Northwestern University, 1935. 194 p. illus. 31 cm. (Annals of the Dearborn Observatory of Northwestern University. Vol. III) Paper, \$10.00. 514

Note: The parallaxes of 197 stars are given in this volume, the values having an estimated average probable error of 0".010. The stars which have been on the Dearborn Observatory program and which were photographed between 1912 and 1929 are for the most part faint, less than the eighth magnitude. For 151 of the 197 stars there are other parallax determinations of which 130 are by the best modern photographic methods from one or more of the nine world observatories. A comparison indicates that the Dearborn values have a tendency to be high, and the introduction to the present volume discusses the possibility of seasonal effects as a cause of systematic errors in trigonometric parallaxes, although the application of a uniform correction to the Dearborn Observatory parallaxes to reduce them to the system obtained at other observatories is held to be unwarranted. The order of presentation for each field is as follows: the BD number and other identification; the position of 1950.0; general notes with citations of proper motion and measurements; the solutions; and finally, other determinations for comparison. References are given to published parallaxes.

GAPOSCHKIN, CECILIA HELENA (PAYNE), AND SERGEI GAPOSCHKIN

Variable stars. Cambridge, Mass.: Harvard Observatory, 1938. 382 p. illus. 23 cm. (Harvard Observatory monographs. No. 5) \$3.25. 515

Contents (abridged): Introductory. Geometric variables. Intrinsic variables. The cataclysmic variables. Extrinsic variables. On technique. Index of stars.

Note: A survey of our present observational knowledge of variable stars as of 1938, embracing all known types of variable stars including some that lie outside the galactic system. Instead of segregating the stars into types, the work attempts to build the various parts into a coherent whole so that the theoretical worker may grasp the broad implications of the phenomenon in which he is interested. Each chapter gives a general picture of the state of knowledge concerning the particular subject treated. An important part of the work are the lists of the well-established members of the groups into which the authors have classified the

different types of variables. A large number of references to original works are given in footnotes.

GAPOSCHKIN, CECILIA HELENA (PAYNE), AND OTHERS

The variables of RV Tauri type, by Cecilia Payne-Gaposchkin, Virginia K. Brenton, and Sergei Gaposchkin. Cambridge, Mass.: Harvard College Astronomical Observatory, 1943. 65 p. illus. 30 cm. (Harvard College. Annals of the Astronomical Observatory. Vol. 113, no. 1) Paper, \$1.15. 516

Note: The first of a projected series of publications presenting a general study of the behavior of the brighter variable stars, using several of the plate series of the Harvard collection of stellar photographs as a basis. The study is limited to known variable stars that are, at some time, brighter than the tenth photographic magnitude. The very large number of estimates, amounting to several million, will take some time to reduce and publish. The present volume is devoted to a discussion of the RV Tauri variables, and other volumes are planned for various groups of similar variables and intervals. Fourteen stars are discussed and selections from the light curves together with drawings of photographic and visual observations accompany the tables.

HACKER, SIDNEY GUY

The spectrum of Arcturus. Princeton, N.J.: Published by the Observatory, 1935. 26 p. 30 cm. (Princeton University Observatory. Contributions. No. 16) Gratis. 517

Contents: Introduction: Observational material. Measurement of plates. Radial velocity correction. Reduction of measures. Accuracy of wave-lengths. Intensity estimates. Identifications. Description of the table. The table.

Note: Through the cooperation of the Princeton University Observatory and the Mount Wilson Observatory the writer had access to a complete set of photographs of the spectrum of Arcturus ($\alpha 14^h 11^m.1 \delta + 19^\circ 42'$; 1900). The spectrograms were taken with the 15-foot auto-collimating spectrograph at the coude focus of the 100-inch Mount Wilson reflector. Plates taken with two-prism dispersion cover the region from $\lambda 4119$ to $\lambda 8743$ in three sections. Four-prism plates of the regions $\lambda \lambda 4245-4520$ and $\lambda \lambda 4525-4975$ were also available. Wave-lengths were determined for about 3900 lines; visual estimates of intensity were made on an arbitrary scale; and the stellar lines identified by a detailed study of the multiplets of various elements.

HUBBLE, EDWIN POWELL

The distribution of extra-galactic nebulae. Washington, D.C.: Carnegie Institution of Washington, 1934. 69 p. illus. 25 cm. (Carnegie Institution of Washington. Contributions from the Mount Wilson Observatory. No. 485) Paper, \$0.70. 517a

Note: The object of the investigation was to determine the distribution of extra-galactic nebulae to a faint uniform limiting magnitude. The material consists of counts of about 44,000 nebulae on 1,284 plates with the 100-inch and 60-inch reflectors, distributed over the three-quarters of the sky north of -30° Dec. The counts are reduced to the standard conditions of excellent one-hour exposures at the zenith on Eastman 40 plates with the 100-inch reflector. A formula is presented which expresses the number of nebulae per square degree to magnitude m , which leads to values for the density of matter in space. The density of nebular distribution, according to the present estimate, is of the order of ten times greater than the first tentative estimate put forward by the author in 1926.

HUBBLE, EDWIN POWELL

The realm of the nebulae. New Haven: Yale University Press, 1936. 210 p. illus. 23 cm. (Yale University. Mrs. Hepsa Ely Silliman memorial lectures. 1935) \$3.00. 518

Contents (abridged): Introduction. The exploration of space. Family traits of nebulae. The distribution of nebulae. Distances of nebulae. The velocity-distance relation. The local group. The general field. The realm of the nebulae. The index.

Note: During the few years preceding the publication of this work the exploration of space advanced into the realm of the nebulae. With the aid of giant telescopes, scientists penetrated hitherto unknown regions, and the observable region of the universe was defined as a sphere about a billion light years across. Dr. Hubble believes that what he calls "a preliminary reconnaissance" was completed, and in this volume he reports on various phases of this work. The treatment is for scientifically minded general readers.

LEAVENWORTH, FRANCIS PRESERVED

Measures of double stars. With which are included the measures by William O. Beal. Minneapolis, Minn.: The University of Minnesota Press, 1930. 118 p. 30 cm. (University of Minnesota. Publications of Astronomical Observatory. Vol 1) \$5.00. 519

Note: This work forms a complete record of the measures of double stars made by the author over a period of more than 40 years, and consists of 2,988 annual means of the measures of 1,185 stars. Most of the observations recorded here have been previously published in various university journals, although several hundred measures made at the University of Minnesota are published here for the first time. The chief telescope used for this work was the 10½-inch refractor of the University of Minnesota, but many measures were made with other refracting telescopes, the 40- and 12-inch of the Yerkes Observatory, the 26-inch of the Leander McCormick Observatory, and the 16-inch of the Goodsell Observatory. The position of each star is given for 1880 and, in accordance with the agreement adopted by the International Astronomical Union, for the Standard Equinox of 1950. The appendix contains 341 annual means of the measures of 289 stars by William O. Beal.

LUYTEN, WILLEM JACOB

Bruce proper motion survey. The general catalogue. Published by the University of Minnesota as a report on official project no. 665-71-3-69, sub-project No. 323, conducted under the auspices of the Work Projects Administration. Minneapolis, Minn.: University of Minnesota Press, 1941. 6 v. 28 cm. Parts 1-2, 4-6, Paper, \$0.50 each; Part 3, Paper, \$1.00. 519a

Contents: Part A, The proper motion of 1465 stars south of declination -80° . Part B, The proper motion of 14,500 stars between declinations $-60^\circ 00'$ and $-79^\circ 59'$. Part C, The proper motions of 12,540 stars between declinations $-50^\circ 00'$ and $-59^\circ 59'$.

Note: The material upon which this catalogue is based was obtained through a survey with the blink microscope of plates taken with the 24-inch Bruce refractor of the Harvard Observatory. All plates were blinked and all magnitudes were estimated by the author. All the positions listed are for 1900 and are estimated to the nearest minute of time and minute of arc, and the average error is said not to exceed $1''-2''$. Each page is divided into two sections giving data for 50 stars as follows: serial number, minute of RA for 1900, declination for 1900, photographic magnitude, components of proper motion parallel to the hour circles at 0^h and 6^h and total motion expressed in $''$.001 per annum. The appendix in each volume lists the CPD identification and HD spectra when known. The tables are mimeographed.

LUYTEN, WILLEM JACOB

Investigations of binary stars. Minneapolis, Minn.: University of Minnesota Press, 1934. 28 p. illus. 24 cm. (University of Minnesota. Publications of the Astronomical Observatory. Vol. II, no. 1) Paper, \$0.50. 519b

Note: A rediscussion of a few cases of apsidal rotations in close binaries, specifically α Geminorum, α Canis Minoris, γ Draconis, 42 Capricorni, and λ Andromedae, for the purpose of determining with what degree of certainty these and other

perturbations of simple elliptic motions are established. New orbits for four visual binaries are given in this paper for the first time, viz., p Eridani, 7 Tauri, δ Equulei, and 85 Pergasi.

MERRILL, PAUL WILLARD, AND CORA G. BUREWELL

Catalogue and bibliography of stars of classes B and A whose spectra have bright hydrogen lines. Washington, D.C.: Carnegie Institution of Washington, 1933. 54 p. illus. 25 cm. (Carnegie Institution of Washington. Contributions from the Mount Wilson Observatory. No. 471) Paper, \$0.50. 519c

Note: The main catalogue lists 410 stars of classes O, B, and A whose spectra have bright hydrogen lines, while a second section gives six anomalous objects whose spectra have bright lines of hydrogen and helium, but whose absorption spectra include titanium oxide bands. Notes to the main table record considerable unpublished data, besides calling attention to the chief features of a few of the more interesting peculiar spectra. The bibliography includes 365 references to observational material concerning the objects listed in the main catalogue. The items referring to each star are indicated in a key list. A brief discussion of the significance of the observational data is also included.

MERRILL, PAUL WILLARD

The nature of variable stars. New York: The Macmillan Company, 1938. 134 p. illus. 21 cm. \$2.00. 520

Contents: Introductory. The nature of stars in general. Varieties of variable stars. Discovery and cataloguing. Light curves. Physical properties. New or temporary stars. Motions. Variable stars and the stellar system. Index.

Note: This book attempts to assist the reader to a comprehension of the general nature of modern astrophysical studies and to show him how astronomy is allied to the other sciences. It is written in non-technical language and is designed for the layman.

MERRILL, PAUL WILLARD

Spectra of long-period variable stars. Chicago, Ill.: The University of Chicago Press, 1940. 107 p. illus. 24 cm. (Astrophysical monographs; sponsored by the Astrophysical journal; edited by H. G. Gale, F. H. Seares, and Otto Struve) \$2.50. 521

Contents: Introductory. Historical. Characteristic spectra at maximum light. Variations with phases. Special problems. Individual variables of special interest. General problems.

Note: This book is devoted primarily to the observational aspect of the subject, but contains some discussion of the physical significance of various spectral features. The introductory and historical chapters are helpful to the reader who has not specialized in stellar spectra.

MITCHELL, SAMUEL ALFRED, AND OTHERS

The trigonometric parallaxes of six hundred and fifty stars, by S. A. Mitchell, D. Reuyl, and others. University, Va.: Leander McCormick Observatory, 1940. 749 p. 25 cm. (Leander McCormick Observatory of the University of Virginia. Publications. Vol. 8) \$1.00. 522

Contents: Description of methods and measures. Statistics of the observations. Absolute magnitudes plotted against spectral type. Details of the parallax determinations. Coordinates, dependences and magnitudes of the comparison stars. Summary.

Note: The tabular statements of data for each star in this volume are preceded by an excellent short discussion of the parallax observing technique and program at this observatory. The basic plan is to calculate the parallax of a given star on the basis of 20 photographic plates, these being taken in five successive seasons. In many instances cloudy weather broke up the succession and the plates were spread over many seasons. Two previous

publications of trigonometric parallaxes have been issued by this observatory. The first one gave the parallaxes of 260 stars and appeared as its *Publications*, volume 3, and also as Ernest Kempton Adams Fund for Physical Research, *Publications*, volume 9, 1920. The second, containing 440 parallaxes, appeared as its *Publications*, volume 4, and also as National Academy of Sciences, *Memoirs*, volume 22, 1, 1927.

MOHR, JENKA

A bibliography of star clusters. Cambridge, Mass.: Harvard University Press, 1935. 6 p. 30 cm. (Harvard University. Astronomical Observatory. Circular 402) Paper, \$0.25. 523

Note: A list of publications on star clusters which appeared between 1930 and 1934, totaling 158 references to the world literature of the subject. Author's name, title, name of publication, and date are given for each entry. The list is in alphabetical order by author and there are no annotations. This bibliography is supplementary to that which appeared in Shapley's *Star clusters*, Cambridge, Mass.: Harvard University Press, Harvard monograph no. 2, 1930, which is now out of print.

MOORE, JOSEPH HAINES

A general catalogue of the radial velocities of stars, nebulae, and clusters. Berkeley, Calif.: University of California Press, 1932. 220 p. 30 cm. (Lick Observatory, University of California. Publications. Vol. xviii) Paper, \$4.00. 524

Contents: Introduction. Stellar radial velocities. Radial velocities of the gaseous nebulae: galactic nebulae; magellanic clouds. Radial velocities of the globular clusters. Apparent radial velocities of the non-galactic nebulae.

Note: This catalogue was compiled in order to make generally available data published after the appearance of the First and Second catalogues of J. Voûte, in 1921 and 1923, respectively. The closing date for this catalogue was January 1, 1932. Within this period, data on radial velocity had accumulated especially rapidly because of the publication of the final results for several extended programs of observation. The arrangement of the material is tabular and follows in general form that of previous extended lists dealing with this subject.

MORGAN, WILLIAM WILSON

A descriptive study of the spectra of the A-type stars. Chicago: The University of Chicago Press, 1935. 118 p. illus. 30 cm. (Publications of the Yerkes Observatory. Vol. vii, part iii) \$2.00. 525

Contents: A general survey of the A-type spectra. Table i: Estimated intensities of lines in 125 stars. The spectra of thirteen type stars. Table ii: Wave-lengths and identifications in dwarfs. Table iii: Wave-lengths and identifications in supergiants. Tables iv and v: Wave-lengths and identifications in peculiar stars. Table vi: Elements present in A-type stars. Summary.

Note: The material in this monograph is divided into the following sections: (1) a general survey of the behavior of the most abundant elements; (2) a detailed description of the spectra of thirteen type stars. The observational data consist of all of the stars observed at Yerkes Observatory between types B8 and F0 for which good spectrograms were available. The number of stars used is about 130, nearly all of which are brighter than magnitude 5.5. All of the spectra used are of one-prism dispersion and have a scale of 30A at $\lambda 4500$.

NEUBAUER, FERDINAND JOHN

The radial velocities of faint class B stars in the declination zone 0° to -23° . Berkeley, Calif.: University of California Press, 1943. 12 p. 25 cm. (Lick Observatory. Contributions. Series ii, no. 6) Paper, \$0.25. 525a

Note: The radial velocities of 433 stars of spectral classes Oe5—B⁵ are presented in this paper. For 397 of these stars no previous determination of radial velocity has been published. The spectra have been classified on the Victoria system, and the estimated probable error of determination, based on an average of six photographic plates per star, is approximately $\pm 2 \text{ km/sec}$.

OLIVIER, CHARLES POLLARD, AND OTHERS

Magnitudes and coordinates of comparison stars in 52 regions of variable stars and magnitudes of 284 variables. Philadelphia: The University of Pennsylvania Press, 1940. 66 p. 31 cm. (Publications of the University of Pennsylvania. Astronomical series. Vol. v, part iii) Paper, \$1.50. 526

Note: The measurements given in tabular form in this monograph were made with the 18-inch refracting telescope of the Flower Astronomical Observatory. In the tables, when available, are the photometric magnitude, the average deviation of the separate results, number of nights the star was measured, the visual magnitude, and the adopted magnitude, the last being a weighted mean. Comparison stars are designated by letters rather than by numerical magnitudes.

OLIVIER, CHARLES POLLARD, AND OTHERS

1414 measures of 1033 double and multiple stars made with the eighteen-inch refractor of the Flower Astronomical Observatory. Philadelphia: The University of Pennsylvania Press, 1932. 64 p. 31 cm. (Publications of the University of Pennsylvania. Astronomical series. Vol. v, part i) Paper, \$1.50. 527

Note: The double star measures contained in this monograph were made during the period 1928 to 1932, using power 212 for the most part, and include a number of new doubles not previously described. Star numbers given refer to S. W. Burnham's *General catalogue of double stars*, Washington, D.C., 1906, or Jonckheere's *Catalogue and measures of double stars*, London, 1917. The average number of measures is three for each double star.

OLIVIER, CHARLES POLLARD, AND OTHERS

2117 measures of 1845 double and multiple stars made with the eighteen-inch refractor of the Flower Astronomical Observatory. Philadelphia: The University of Pennsylvania Press, 1939. 83 p. 31 cm. (Publications of the University of Pennsylvania. Astronomical series. Vol. v, part ii) Paper, \$1.50. 528

Note: The measures contained in this publication are a direct continuation of those which appear in Vol. v, part i, of the same series, described above. The star numbers used in the present work refer to Aitken's *New general catalogue* (see Index).

PETTIT, EDISON, AND SETH B. NICHOLSON

Measurements of the radiation from variable stars. Washington, D.C.: Carnegie Institution of Washington, 1933. 34 p. illus. 25 cm. (Carnegie Institution of Washington. Contributions from the Mount Wilson Observatory. No. 478) Paper, \$0.60. 528a

Note: A report of observations obtained with the vacuum thermocouple at the Newtonian focus of the 100-inch telescope during the interval 1921-1927. The more complete data refer to eleven long-period variables, five irregular variables, two Cepheids, and Algol. The long-period variables were observed sufficiently to give curves of radiation at all phases, together with temperatures, diameters, and variations in energy.

PRAGER, RICHARD

History and bibliography of the light variations of variable stars. Second edition, supplementary volume containing the stars recognized to be variable during the years 1931-1938.

Cambridge, Mass.: Harvard College Astronomical Observatory, 1941. 251 p. 30 cm. (Harvard College. Annals of the Astronomical Observatory. Vol. 111.) Paper, \$4.00. 529

Contents: Introduction. List of abbreviations. Table 1: The catalogue. Remarks on the individual stars. Addenda. Appendixes: Charts of the surroundings. Sequences of comparison stars. Diagrams of light curves.

Note: A continuation of the author's original history and bibliography of the same subject which appeared in Berlin in 1934-36. The present volume contains all the variable stars which were discovered during 1931-1938, thus supplementing the earlier surveys with which the author was long associated at the Berlin-Babelsberg Observatory. The information, which is arranged in tabular form, contains the following data: name of constellation and star; provisional designation; position as of 1900; name of the first discoverer or of the author who announced the first discovery and place; key to further remarks; type of variable; minimum epoch for eclipsing stars, maximum epoch for all others; period; maximum and minimum brightness in the spectral region given; kind of observation used; and references to the discovery and further comments by the discoverer as published in various astronomical journals and bulletins of the world.

PITTSBURGH UNIVERSITY. ALLEGHENY OBSERVATORY

Photographic determinations of the parallaxes of stars. Lancaster, Pa.: Intelligencer Printing Company, Inc., 1932. 211 p. 32 cm. (Allegheny Observatory of the University of Pittsburgh. Publications. Vol. ix) Gratis. 530

Note: This volume contains a list of 413 Allegheny parallaxes. The complete data for 123 of these stars, which were measured under the direction of Dr. Schlesinger, have been published elsewhere. The details of the remaining 290 determinations are given in the present volume. Plates for the latter determinations were measured by Kelvin Burns and Bertha Grier Crissman. In addition to the determinations, there is a catalogue containing two tables with the respective headings: Trigonometric parallaxes of 413 stars, and The comparison stars.

ROBERTSON, JAMES

Catalog of 3539 zodiacal stars for the equinox 1950.0. Washington, D.C.: Government Printing Office, 1940. 130 p. illus. 29 cm. (United States. Naval Observatory. Nautical Almanac Office. Astronomical papers prepared for the use of the American ephemeris and nautical almanac. Vol. x, part II) Paper, \$0.30. 531

Contents: Introduction: Formation of the catalog. Explanation of the catalog. Comparisons with other catalogs. Catalog of 3,539 zodiacal stars for the equinox 1950.0.

Note: This catalogue was undertaken to meet the need of astronomers for a list of zodiacal stars including more stars and better places than those contained in Hedrick's *Catalogue of zodiacal stars* (Astronomical papers of the American ephemeris, volume VIII, part III) published in 1905. A total of 3,539 stars, all within 8° of the ecliptic, is included. Of these stars, 313 are fainter than 8.5 magnitude.

RUSSELL, HENRY NORRIS, AND CHARLOTTE E. MOORE

The masses of stars, with a general catalogue of dynamical parallaxes. Chicago, Ill.: The University of Chicago Press, 1940. 236 p. illus. 24 cm. (Astrophysical monographs; edited by H. G. Gale, F. H. Seares and Otto Struve) \$3.50. 532

Contents (abridged): Visual binaries. Spectroscopic and eclipsing binaries. General discussions. The calculation of dynamical parallaxes. General catalogue of dynamical parallaxes.

Note: This list contains all the available information of binary components in double stars secured from observations extending

over several hundred years. Discussions of the methods used for the determination of the masses of the stars and the results obtained by the authors are included.

SCHILT, JAN, AND SARAH J. HILL

Photographic magnitudes of 6902 stars in the zone +55° to +60°. New York: Columbia University Press, 1937. 32 p. 30 cm. (Contributions from the Rutherford Observatory of Columbia University. No. 30) Paper, \$1.00. 533

Photographic magnitudes of 7280 stars in the zone +50° to +55°. New York: Columbia University Press, 1938. 36 p. 30 cm. (Contributions from the Rutherford Observatory of Columbia University. No. 31) Paper, \$1.00. 533a

Note: These two papers are a continuation of the photometric program begun with the publication of the photographic magnitudes for two previous Yale zones contained in *Transactions of the Astronomical Observatory of Yale University*, New Haven, Volume 9, 1932, and Volume 10, 1934. Since the work on the magnitudes was started more than ten years after the program of the photographic positions, it was impossible to have the magnitudes included in the Yale catalogues. The present two-part work provides the magnitudes in a separate catalogue in such a form as to make it fairly easy to consult the two catalogues together. The star numbers and the columns in these two papers have been made to correspond exactly to the pages of the Yale catalogue, which is published in *Transactions*, Volume 7, 1930. The photographic plates were exposed at Yale Observatory with the 3.0-inch Ross camera of 21-inch focal length between 1932 and 1937.

SCHLESINGER, FRANK, AND LOUISE F. JENKINS

Catalogue of bright stars, containing all important data known to January, 1940, relating to all stars brighter than 6.5 visual magnitude, and to some fainter ones. Second edition. With appendices containing galactic co-ordinates and indices to the constellations. New Haven: Yale University Observatory, 1940. 213 p. 31 cm. Paper, \$3.00. 534

Note: These tables give the following information relative to the bright stars of the indicated magnitude: current number, which is the Revised Harvard photometry number as well; the constellation name, with the Flamsteed number and the Bayer letter; the Durchmusterung number; the number of the star in Boss's *General catalogue of 33,342 stars for the epoch 1950*, Washington, D.C.: Carnegie Institution of Washington Publication 468, 1937 (see Index); the right ascension for 1900 and the annual variation in right ascension for 1950; the declination for 1900 and the precession in declination for 1950; the magnitude and the spectrum; the proper motions in right ascension and declination expressed in seconds of arc; the absolute parallax; the radial velocity; and additional remarks relating mostly to characteristics of double stars. The second edition contains appendices giving the galactic latitude and longitude corresponding to a given right ascension and declination; the international limits of the constellations, modified so that every boundary is either a meridian or a circle of declination; abbreviations for constellation names in the three- and four-letter international symbols; an index to the right ascensions (1900) of stars given by their Bayer letters or Flamsteed numbers, and an index to the positions of stars having specific names.

SCHLESINGER, FRANK, AND OTHERS

Catalogue of the positions and proper motions of 8359 stars. Re-observation by means of photography of the Astronomische Gesellschaft zone between declinations +50° and +55°. With an appendix containing the position of 1070 comparison stars observed by R. H. Tucker with the Lick meridian circle. By Frank Schlesinger and Ida Barney. New Haven, Conn.:

Published by the Observatory, 1925. 183 p. 31 cm. (Yale University Astronomical Observatory. Transactions. Vol. 4) Paper, \$3.60. 535

———Catalogue of the positions and proper motions of 1275 stars. Re-observation by means of photography of the *Astronomische Gesellschaft* zone between declinations $+1^\circ$ and $+2^\circ$, by Frank Schlesinger, C. J. Hudson, Louise Jenkins, and Ida Barney. New Haven, Conn.: Published by the Observatory, 1926. 16 p. 31 cm. (Yale University Astronomical Observatory. Transactions. Vol. 3, p. 135-151) Paper, \$0.30. 535a

———Catalogue of the positions and proper motions of 5833 stars. Re-observation by means of photography of the *Astronomische Gesellschaft* zone between declinations -2° and $+1^\circ$, reduced to 1875.0 without applying proper motions. By Frank Schlesinger, C. J. Hudson, Louise Jenkins, and Ida Barney. New Haven, Conn.: Published by the Observatory, 1926. 120 p. 31 cm. (Yale University Astronomical Observatory. Transactions. Vol. 5) Paper, \$3.60. 535b

———Catalogue of the positions and proper motions of 7727 stars. Re-observation by means of photography of the *Astronomische Gesellschaft* zone between declinations $+55^\circ$ and $+60^\circ$, reduced to 1875.0 without applying proper motions. With an appendix containing the positions of 396 stars in sparse regions, and an appendix containing the positions of 80 additional *Gesellschaft* stars near declination $+55^\circ$. By Frank Schlesinger and Ida Barney. New Haven, Conn.: Published by the Observatory, 1930. 168 p. 31 cm. (Yale University Astronomical Observatory. Transactions. Vol. 7) Paper, \$3.60. 535c

———Catalogue of the positions and proper motions of 10358 stars. Re-observation by means of photography of the *Astronomische Gesellschaft* zone between declinations $+25^\circ$ and $+30^\circ$. Together with photographic magnitudes determined by means of the thermoelectric photometer by Jan Schilt. By Frank Schlesinger and Ida Barney. New Haven, Conn.: Published by the Observatory, 1933. 208 p. 31 cm. (Yale University Astronomical Observatory. Transactions. Vol. 9) Paper, \$3.60. 535d

———Catalogue of the positions and proper motions of 8703 stars. Re-observation by means of photography of the *Astronomische Gesellschaft* zone between declinations $+20^\circ$ and $+25^\circ$, reduced to 1875.0 without applying proper motions. Together with photographic magnitudes determined by means of the thermoelectric photometer by Jan Schilt. By Frank

Schlesinger, Ida Barney, and Carolyn Gesler. New Haven, Conn.: Published by the Observatory, 1934. 175 p. 31 cm. (Yale University Astronomical Observatory. Transactions. Vol. 10) Paper, \$3.75. 535e

———Catalogue of the positions and proper motions of 8101 stars. Re-observation by means of photography of the *Astronomische Gesellschaft* zone between declinations -10° and -14° , reduced to 1950.0 without applying proper motions. By Frank Schlesinger and Ida Barney. New Haven, Conn.: Published by the Observatory, 1939. 164 p. 31 cm. (Yale University Astronomical Observatory. Transactions. Vol. 11) Paper, \$3.75. 535f

———Catalogue of the positions and proper motions of 8563 stars. Re-observation by means of photography of the *Astronomische Gesellschaft* zone between declinations -14° and -18° , reduced to 1950.0 without applying proper motions. By Frank Schlesinger and Ida Barney. New Haven, Conn.: Published by the Observatory, 1940. 173 p. 31 cm. (Yale University Astronomical Observatory. Transactions. Vol. 12, pt. 1) Paper, \$5.00 for Vol. 12 complete. 535g

———Catalogue of the positions and proper motions of 4553 stars. Re-observation by means of photography of the *Astronomische Gesellschaft* zone between declinations -18° and -20° , reduced to 1950.0 without applying proper motions. By Frank Schlesinger and Ida Barney. New Haven, Conn.: Published by the Observatory, 1940. 93 p. 31 cm. (Yale University Astronomical Observatory. Transactions. Vol. 12, pt. 2) Paper, \$5.00 for Vol. 12 complete. 535h

———Catalogue of the positions and proper motions of 4292 stars. Re-observation by means of photography of the *Astronomische Gesellschaft* zone between declinations -20° and -22° , reduced to 1950.0 without applying proper motions. By Frank Schlesinger and Ida Barney. New Haven, Conn.: Published by the Observatory, 1943. 87 p. 31 cm. (Yale University Astronomical Observatory. Transactions. Vol. 13, pt. 1) Paper, \$5.50 for Vol. 13 complete. 535i

———Catalogue of the positions and proper motions of 9455 stars. Re-observation by means of photography of the *Astronomische Gesellschaft* zone between declinations -27° and -30° , reduced to 1950.0 without applying proper motions. By Frank Schlesinger and Ida Barney. New Haven, Conn.: Published by the Observatory, 1943. 191 p. 31 cm. (Yale University Astronomical Observatory. Transactions.

Vol. 13, pt. 2) Paper, \$5.50 for Vol. 13 complete.

535j

——Catalogue of the positions and proper motions of 15110 stars. Re-observation by means of photography of the Cordoba zone between declinations -22° and -27° , reduced to 1950.0 without applying proper motions. By Frank Schlesinger and Ida Barney. New Haven, Conn.: Published by the Observatory, 1943. 304 p. 31 cm. (Yale University Astronomical Observatory. Transactions. Vol. 14) Paper, \$5.50.

535k

Note: In 1913, Dr. Schlesinger started experiments at Allegheny Observatory on the use of photography for the formation of star catalogues, and as a result became interested in the compilation of zone catalogues such as had been carried out under the auspices of the Astronomische Gesellschaft. After coming to Yale University, Dr. Schlesinger continued this work and with the assistance of members of the staff of the Observatory, published 12 portions of these data. The project is still under way. When completed, the work will cover the sky from $+30^\circ$ to -30° . Approximately six sections are planned for future publication, two of which will probably appear in 1945.

SCHLESINGER, FRANK

General catalogue of stellar parallaxes compiled at Yale University Observatory, with the collaboration of Louise F. Jenkins. Second edition, containing all determinations available in January, 1935. New Haven: Yale University Observatory, 1935. 196 p. 31 cm. Paper, \$3.75. 536

Note: The second edition of this general catalogue contains all trigonometric, spectroscopic, and dynamic determinations available through publication or correspondence in January, 1935. These are absolute parallaxes reduced to a homogeneous system, and the probable errors as here printed have been adjusted to correspond to the true reliability of the results. The tables give the following data: serial number; name of the star; the right ascension and the declination for 1900; the visual magnitude and the spectrum; the mean trigonometric parallax, its adjusted probable error, and the source; the spectroscopic and dynamic parallaxes and their sources; the proper motion and its position angle; the Durchmusterung number; and certain remarks relating chiefly to duplicity and to alternative designations.

SCHLESINGER, FRANK, EDITOR

The trigonometric parallaxes of 472 stars; determined from photographs secured with the twenty-six inch photographic refractor of the Yale Station, Johannesburg, South Africa, and measured at Johannesburg and New Haven. New Haven, Conn.: Yale University Observatory, 1943. 130 p. 30 cm. (Yale University. Astronomical Observatory. Transactions. Vol. 15, part 1) Paper, \$2.50. 536a

Contents (abridged): Introduction. Alphabetical index to current numbers. Index to current numbers arranged according to right ascension. Stars 852 to 1323, by H. L. Alden, Marion Grace, W. O'Connell, Ethel Patton, Helen Roche, and E. Whitworth. Diameters of images. Notes. Errata.

Note: This is a continuation of the Observatory's earlier publication *Trigonometric parallaxes of 851 stars*, New Haven, 1936 (see Index). The first page of each of the ten lists which make up the present volume gives the current number, the star's name, its position in 1900, the DM number, visual magnitude and spectrum, its total proper motion, the relative parallax and its probable error, and other data. The second page gives the co-ordinates in millimeters for the comparison stars, the dependences employed, and their mean photographic magnitude. The sum of the quantities that form the normal equations is given on the third page, together with the calculated weight of the parallax and other data, while the fourth and succeeding pages give the data for the individual plates.

SEARES, FREDERICK HANLEY, AND OTHERS

Magnitudes and colors of stars north of $+80^\circ$, by Frederick H. Seares, Frank E. Ross, and Mary C. Joyner. Washington, D.C.: Carnegie Institution of Washington, 1941. 89 p. illus. 29 cm. (Carnegie Institution of Washington. Publication no. 532) Paper, \$1.50; cloth, \$2.00. 537

Contents: Introduction. Relation of various catalogues to International system. Provisional secondary standards. Recent photographic observations. Measurement and reduction of photographs. Tests and provisions of provisional secondary standards. Reduction of program photographs for Pg magnitudes. Reduction of program photographs for Pv magnitudes. Final reduction formulae for Pv catalogues. Uniformity of zero points. Relation of catalogue to International system. Description of the catalogue. Catalogue of magnitudes and colors. Notes to the catalogue.

Note: The catalogue provides an extension of the Polar sequence, for the most part comparable in precision with the International standards themselves. An introduction to the catalogue describes in detail the successive steps of the investigation.

SEARES, FREDERICK HANLEY, AND OTHERS

Mount Wilson catalogue of photographic magnitudes in selected areas 1-139, by F. H. Seares, J. C. Kapteyn, and P. J. van Rhijn. Assisted by Mary C. Joyner and Myrtle L. Richmond. Washington, D.C.: Carnegie Institution of Washington, 1930. 276 p. 29 cm. (Carnegie Institution of Washington. Publication no. 402) Paper, \$8.00; cloth, \$9.00. 538

Note: The catalogue gives magnitudes for stars in the 139 areas on and north of the declination parallel at -15° , and is arranged in the serial order of the areas. The results for each area are divided between a main list, which gives mean magnitudes of all stars within the limits of the field adopted at Groningen, and a supplementary list, which includes all stars outside the Groningen field and hence measured only at Mount Wilson. The total number of stars in the main and supplementary lists is 44,926 and 23,015, respectively, or 67,941 in all. The catalogue is based on 1,063 photographic plates made between 1909 and 1912. Right ascension and declination as of 1900 are given for each star.

SHAPLEY, HARLOW

Galaxies. Philadelphia: The Blakiston Company, 1943. 229 p. illus. 22 cm. (The Harvard books on astronomy, edited by Harlow Shapley and B. J. Bok) \$2.50. 539

Contents (abridged): Galactic explorations. The star clouds of Magellan. The astronomical toolhouse. The Milky way as a galaxy. The neighboring galaxies. The metagalaxy. The expanding universe.

Note: A popularized scientific discussion which tells the story of the observation, interpretation, and measurement of those distant stellar organizations that lie beyond the Milky way. There are numerous illustrations including photographs of modern astronomers who have done outstanding work in this field. There is an index.

SHAPLEY, HARLOW

Star clusters. New York: Published for the Observatory by the McGraw-Hill Book Company, Inc., 1930. 276 p. illus. 23 cm. (Harvard Observatory monographs. No. 2) \$3.00. 540

Contents (abridged): Introductory survey. Classification, number, and distribution. On the spectral composition of clusters. Variable stars. The distribution of stars in globular clusters. The forms of globular clusters. The structure of galactic groups. On the velocity of light. The transparency of space. The period-luminosity curve. The distances of clusters. Dimensions of the galaxy. Star clusters in the Magellanic clouds. Data bearing on the origin of the galaxy. A partial summary. Appendixes: Catalogue of globular clusters. Catalogue of galactic clusters. Bibliog-

raphy. Special bibliographies. Index. Special index to individual clusters.

Note: A technical book for the astronomer. Special features include catalogues of clusters, a general bibliography of over 800 references, and a special list of bibliographies on star clusters. In addition, bibliographical footnotes supplement the text.

SITTERLY, BANCROFT WALKER

Photometric researches. Part I. A graphical method for obtaining the orbital elements of eclipsing variables. Part II. The eclipsing variable RS Canum Venaticorum. Princeton, N.J.: Published by the Observatory, 1930. 41 p. illus. 31 cm. (Princeton University Observatory. Contributions. No. 11) Gratis. 541

Contents: Part I. I, The method in general: Case A. The star-discs are uniform, and the primary eclipse is total or annular. Case B. The star-discs are uniform, and the eclipses are partial. Case C. The star-discs are darkened, and the eclipses are partial. Case D. The star-discs are darkened, and the eclipses are total and annular. Ellipsoidal stars. Eccentricity of the orbit. II, Details of practice: Scale of the plots. Residuals. III, Example: RZ Centauri. Tables. Part II. I, The visual curve. II, The photographic curve. III, Results.

Note: The method here reported is an adaptation of that of H. N. Russell. Like the problems of visual and spectroscopic binaries, the eclipsing variable problem deals with data whose approximate nature suggests graphical treatment. Unless the photometric observations are of extraordinary precision, the resulting orbital elements cannot be relied on to one per cent, and in most cases are much less definitely determined. A graphical method of solution will give results as accurate as light-curves of this type warrant, and it has the advantage of indicating directly to inspection the degree of precision of each element separately, and the manner in which the elements vary together. Furthermore, the method's simplicity is advantageous in handling some theoretically complicated cases. RZ Centauri is given as an example. The eclipsing variable RS Canum Venaticorum, the subject of the second portion of this article, was chosen by the author for special study because previous studies by various observers had produced conflicting results.

SLOCUM, FREDERICK, AND OTHERS

Stellar parallaxes derived from photographs made with the 20-inch refractor of the Van Vleck Observatory, by F. Slocum, C. L. Stearns, and B. W. Sitterly. Middletown, Conn.: Wesleyan University, 1938. 277 p. illus. 27 cm. (Van Vleck Observatory. Publications. Vol. I) Gratis. 541a

Note: These tables give 137 parallaxes for 130 different stars, of which 43 are presented for the first time. The star positions are all for the epoch 1900. Included in the data are the date of measurement, the hour angle at mid-exposure, the time interval from an arbitrary zero, the parallax factor, the plate solution, the residual, the normal equations and their solution in millimeters and in seconds of arc, the essential data for comparison stars, and a list of previous determinations of the star's parallax if any have been made. A tabular summary in order of right ascension is also provided, and there is a detailed description of the refractor and other instruments used.

VAN DE KAMP, P., AND A. N. VYSSOTSKY

A study of the proper motions of 18,000 stars, derived at the Leander McCormick Observatory. Charlottesville, Va.: University of Virginia, 1937. 246 p. 29 cm. (Publications of the Leander McCormick Observatory of the University of Virginia. Vol. VII) \$1.00. 542

Contents: Materials and measures. General solution for solar motion, differential galactic rotation and precessional constants. Solar apex for separate magnitude and spectral groups. Distribution of total proper motions and absolute magnitudes. Density gradients relative to the galactic plane. Ellipsoidal distribution of stellar motions. Secular parallaxes, τ -components and mean parallaxes. Absorption of light within the galaxy. Appendix. Explanation of the catalogue. Catalogue of proper motions.

Note: The present work may be considered a revision and an extension of previous investigations by Alden and van de Kamp which were summarized in various technical journals of astronomy from 1924 to 1927 and dealt with solar motions and related problems observed in photographs taken with the 26-inch McCormick visual refractor. The material presented in this volume covers new observational data giving the proper motions of 18,000 faint stars referred to the equinox of 1900, determined from motions of 574 bright stars. The material consists of the relative photographic motions measured in 341 regions fairly uniformly distributed north of -30° declination. The photographs were taken between 1914 and 1932. The work is intended to provide astronomers with more accurate data for the determination of solar motion with respect to faint stars and also for the investigation of secular parallaxes, stellar velocities, and galactic rotation.

WYSE, ARTHUR BAMBRIDGE

The spectrum of Nova Aquilae (1918). Berkeley, Calif.: University of California Press, 1939. 122 p. illus. 31 cm. (University of California. Publications of the Lick Observatory. Vol. XIV, part III) Paper, \$3.00. 542a

Note: A description of the spectral development of Nova Aquilae as recorded on the spectrograms of the Lick Observatory and supplemented by plates taken at other observatories. After the introduction and a statement as to the spectrograms employed in the study, there follows a series of general descriptions of the interstellar lines and of the distance, an account of the nebular envelope and the spectrum from 1919 to 1937. Reference is made to some of the descriptions previously published. The last section of the paper is a day-by-day journal of observations for 1918, the year of this nova's discovery, wherein an attempt is made to present the observational data, which at best are extremely complicated, in as brief and simple a manner as possible without omitting details that seem to be of possible significance. There are ten plates of photographs of the spectrum.

YALE UNIVERSITY. OBSERVATORY

The trigonometrical parallaxes of 851 stars determined from photographs secured with the twenty-six inch photographic refractor at the Yale Station, Johannesburg, South Africa, and measured at Johannesburg and New Haven. New Haven, Conn.: Published by the Observatory, 1936. 232 p. illus. 31 cm. (Astronomical Observatory of Yale University. Transactions. Vol. 8) Paper, \$3.60. 543

Contents (abridged): Introduction. Alphabetical index to current numbers. Index to current numbers arranged according to right ascension. Stars 1-851, details of parallax determinations. Diameters of images. Notes.

Note: This volume presents a report of the derivation of stellar parallaxes from about 17,000 plates secured at the Yale station at Johannesburg. In order to make the parallaxes themselves immediately available to astronomers, they were published in the *Astronomical Journal* in a series of papers each applying usually to 48 stars. The present complete report is published because of the certainty that the details will be required by future investigators, especially with regard to the determination of relative proper motions and non-linear proper motions. A tabular form of publication has been used in order to give these details in reasonably small space. The introduction to the article describes the observatory and the telescope. It tells something of the history of the establishment of the station, the selection of the site, the planning of the objective, and the construction of the mounting, which was built in the Observatory and assembled at the Mason Mechanical Laboratory at Yale University.

PHYSICS

General

BERGMANN, PETER GABRIEL

Introduction to the theory of relativity. Foreword by Albert Einstein. New York: Prentice-Hall, Inc., 1942. 287 p. 23 cm. (Prentice-Hall physics series) \$6.00. 544

Contents: Part I, The special theory of relativity: Frames of reference, coordinate systems and coordinate transformations. Classical mechanics. The propagation of light. The Lorentz transformation. Vector and tensor calculus in an n dimensional continuum. Relativistic mechanics of mass points. Relativistic electrodynamics. The mechanics of continuous matter. Applications of the special theory of relativity. Part II, The general theory of relativity: The principle of equivalence. The Riemann-Christoffel curvature tensor. The field equations of the general theory of relativity. Rigorous solutions of the field equations of the general theory of relativity. The experimental tests of the general theory of relativity. The equations of motion in the general theory of relativity. Part III, Unified field theories: Weyl's gauge-invariant geometry. Kaluza's five dimensional theory and the projective field theories. A generalization of Kaluza's theory. Index.

Note: The theory of relativity is presented as a theory in physics rather than in pure mathematics. Only a physicist's knowledge of mathematics is necessary to understand this text. The specific apparatus needed in relativity—tensor calculus and Ricci calculus—is developed in the book itself. Problems are introduced which familiarize the reader with the mathematical apparatus and illustrate the physical aspects of the theory. The book is divided into the topics of the special theory of relativity, the general theory of relativity, and the unified field theories.

BRIDGMAN, PERCY WILLIAMS

The nature of physical theory. Published on the Louis Clark Vanuxem Foundation. Princeton: Princeton University Press, 1936. 138 p. 22 cm. \$2.00. 545

Contents: Introductory. Operations. Thought, language. Logic. Mathematics. Mathematics in application. Relativity. Mathematical models and probability. Wave mechanics. In conclusion. Index.

Note: An attempt by an outstanding American experimental physicist to restate in simple language the fundamental theory underlying present-day concepts in physics. Intended as a suggestion for future training in critical analysis. The material was first delivered as three Vanuxem lectures at Princeton University in 1935, and in this form the lectures have been expanded and revised.

DARROW, KARL KELCHNER

The renaissance of physics. New York: Macmillan Company, 1936. 306 p. illus. 22 cm. \$3.75. 546

Contents: Physics and the physicist. Intimations of electricity. Release of electrons from matter. Through measuring to knowing. Magnets and moving charges. The atom visible. Light in the semblance of waves. Mystery of waves and corpuscles. Structure of the atom. Technique of transmutation. Victory over the elements. Unity of nature. Index.

Note: A popular account, based on lectures, of present-day experimental physics and its history. No previous knowledge of physics or mathematics is necessary to understand the book. Nevertheless considerable information of interest to the scientist is included.

DONNAN, FREDERICK GEORGE, AND ARTHUR HAAS, EDITORS

A commentary on the scientific writings of J. Willard Gibbs, formerly professor of mathematical physics in Yale University, edited by F. G. Donnan and Arthur Haas. New Haven: Yale University Press, 1936. 2 v. illus. 23 cm. \$10.00. 547

Contents (abridged): Volume I. The general thermodynamic system of Gibbs, by J. A. V. Butler. Osmotic and membrane equilibria, including electrochemical systems, by E. A. Guggenheim. The phase rule and heterogeneous equilibrium, by G. W. Morey. The graphical representation of equilibria in binary systems by means of the zeta (free energy) function, by F. A. H. Schreinmakers. The conditions of equilibrium for heterogeneous masses under the influence of gravity, by D. H. Andrews. The thermodynamics of strained elastic solids, by J. Rice. The influence of surfaces of discontinuity upon the equilibrium of heterogeneous masses, by J. Rice. The general properties of a perfect electrochemical apparatus, by H. S. Harned. Index. Volume II. The thermodynamic principles as extended and perfected by Gibbs, by Arthur Haas. Application of Gibbs' methods to modern problems of thermodynamics, by Paul S. Epstein. Gibbs' contributions to the theory of light, by Leigh Page. The contributions of Gibbs to vector analysis and multiple algebra, by Edwin B. Wilson. Gibbs and the statistical conception of physics, by Arthur Haas. The chief results of Gibbs' statistical mechanics, by Arthur Haas. Critical appreciation of Gibbs' statistical mechanics, by Paul S. Epstein. Gibbs' methods in quantum statistics, by Paul S. Epstein. Commentary on Gibbs' papers on dynamics, by Arthur Haas. Indexes.

Note: The main purpose of these two volumes is to aid and supplement a careful study of the original text of Gibbs' writings and not to make such a study unnecessary. Each of the two volumes deals with the portion of Gibbs' writings contained in the *Collected works of J. Willard Gibbs*, New York, 1928. Volume I of the present work is essentially interpretative and explanatory, but includes a discussion of recent developments concerning Gibbs' thermodynamic principles and many examples, drawn from modern literature, of their application to concrete problems. Volume II contains an analysis, appreciation, and interpretation of Gibbs' work in the field of theoretical physics, especially his statistical mechanics and their relation to modern quantum statistics. The volumes are separately indexed and may be used independently.

LEMON, HARVEY BRACE, AND FITZ-HUGH MARSHALL

The demonstration laboratory of physics at the University of Chicago. Chicago: The University of Chicago Press, 1939. 127 p. illus. 23 cm. \$1.50. 548

Note: A description of the demonstration experiments which have been set up as a permanent exhibit at the University of Chicago. The experiments are ones commonly used to demonstrate the various laws of physics and cover mechanics, heat, electricity, wave motion and sound, optics, and the corpuscular aspects of modern physics. The equipment, arrangement, and purpose of each set-up are outlined. For the person interested in setting up similar experiments, an appendix lists the materials needed, costs, and methods of construction for selected experiments.

LENZEN, VICTOR FRITZ

The nature of physical theory; a study in theory of knowledge. New York: John Wiley & Sons, Inc., 1931. 301 p. illus. 24 cm. \$3.50. 549

Contents: Introduction: The general character of physical theory. Part I, Special classical physical theories: Fundamental concepts and methods. Euclidean geometry. The theory of time.

Kinematics. Dynamics. Electrodynamics. Thermodynamics. Part II, Unitary systems of physical theory: The mechanical conception of nature. The electrodynamic conception of nature—microscopic electrodynamics. The electrodynamic conception of nature—the special theory of relativity. The geometrical conception of nature—Riemannian geometry. The geometrical conception of nature—the theory of gravitation. Part III, The quantum theory: The classical quantum theory. Symbolic quantum mechanics. Part IV, Methodological principles: The concept of substance. The concept of causality. Index.

Note: A treatment of the important concepts of the classical, the electrodynamic, and the geometrical types of physical theory, with a minimum of mathematics. The presentation is not dogmatic, but presents different possibilities of viewpoint and methods of approach. The book is designed to give the physicist and the philosopher a wider knowledge of the philosophic bearing of the subject.

MAGIE, WILLIAM FRANCIS

A source book in physics. New York: McGraw-Hill Book Company, Inc., 1935. 620 p. illus. 23 cm. (Source books in the history of the sciences; G. D. Walcott, general editor) \$5.00.

551

Contents (abridged): General editor's preface. Author's preface. Mechanics. Properties of matter. Sound. Heat. Light. Magnetism and electricity. Index.

Note: This book makes accessible the most significant portions of the original papers in which scientific workers announced important discoveries or methods of thought in the field of physics. The period covered is the three centuries ending with the year 1900 A.D. Although these extracts are chiefly concerned with experimental work, mathematical papers are occasionally quoted. Brief biographical sketches of the authors are included.

MILLIKAN, ROBERT ANDREWS

Time, matter, and values. Chapel Hill, N.C.: The University of North Carolina Press, 1932. 99 p. illus. 19 cm. (The John Calvin McNair lectures) \$1.00.

551a

Contents: New ideas about time. New ideas about matter. New ideas about values.

Note: The renowned American physicist presents in this work a brief summary of some of the most significant changes in fundamental concepts which have resulted from the advances made in recent years in the field of experimental physics. He points out that the great error made by classical physics consisted in extending its generalizations into fields where they had not been experimentally tested, treating them as universally applicable principles instead of as essentially working hypotheses, resulting in dogmatism as contrasted with the necessary openmindedness of modern experimental science.

RICHTMYER, FLOYD KARKER, AND E. H. KENNARD

Introduction to modern physics. Third edition. New York: McGraw-Hill Book Company, Inc., 1942. 723 p. illus. 23 cm. (International series in physics; L. A. DuBridge, consulting editor) \$5.00.

552

Contents: Historical sketch. Electromagnetic waves and moving charges. The photoelectric and thermionic effects. The theory of relativity. The origin of the quantum theory. The nuclear atom and the origin of spectral lines. Wave mechanics. Atomic structure and optical spectra. The quantum theory of specific heats. X-rays. The nucleus. Cosmic rays.

Note: A discussion of the origin, development, and present status of some of the more important concepts of physics, classical as well as modern, that will give the reader a correct perspective of the growth and present trend of physics as a whole. This edition has been extensively rewritten in accordance with recent developments in atomic theory and in the physics of the nucleus and of fundamental particles.

STRONG, JOHN, AND OTHERS

Procedures in experimental physics, by John Strong in collaboration with H. Victor Neher,

Albert E. Whitford, C. Hawley Cartwright, and Roger Hayward. Illustrated by Roger Hayward. New York: Prentice-Hall, Inc., 1938. 642 p. illus. 23 cm. (Prentice-Hall physics series, E. U. Condon, editor) \$6.65.

553

Contents: Fundamental operations in laboratory glass blowing. Laboratory optical work. Technique of high vacuum. Coating of surfaces: evaporation and sputtering. Use of fused silica. Electrometers and electroscopes. Geiger counters. Vacuum thermopiles and the measurement of radiant energy. Optics: light sources, filters, and optical instruments. Photoelectric cells and amplifiers. Photography in the laboratory. Heat and high temperature. Notes on the materials of research. Notes on the construction and design of instruments and apparatus. Molding and casting. Subject and name index.

Note: The authors endeavored to bridge the gap between laboratory demonstrations and experience, and theoretical training, by collecting and coordinating up-to-date methods of experimental procedure and presenting them in easy to follow form. Procedures, apparatus, and techniques are described, and the names of suppliers are given. Over 400 drawings present graphic demonstrations.

Dictionaries

LINDSAY, ROBERT BRUCE

Student's handbook of elementary physics. New York: The Dryden Press, 1943. 398 p. illus. 21 cm. \$2.25.

554

Contents: Introduction. The meaning of physics. Mechanical properties of matter. Thermal properties of matter. Electrical properties of matter. Optical properties of matter. Illustrated dictionary of terms. Appendix: Chronological history of physics. Bibliography of suggested readings. Collection of useful formulas. Tables of physical constants. Mathematical constants and tables. Answers to selected problems. Index.

Note: While this volume contains enough material to serve as a brief text in physics, its primary purpose is to provide information supplementary to the usual text. The first third of the book provides a brief review of the essentials of elementary physics and deals with the mechanical, thermal, electrical, and optical properties of matter. Simple experiments needing little or no equipment are incorporated in the textual material. All mathematical formulas have been excluded from the text and brought together in the appendix. The greater part of the volume consists of an illustrated dictionary of the terms most commonly encountered in elementary physics.

WELD, LEROY DOUGHERTY, EDITOR

Glossary of physics. New York: McGraw-Hill Book Company, Inc., 1937. 255 p. 21 cm. \$2.50.

555

Note: A reference work for the use of students, teachers, and research workers in physics or chemistry, and industrial physicists, chemists, or engineers. Contains definitions of about 3250 physical terms, including many terms from adjacent fields often used in physical literature. Definitions are designed to be clearly comprehensible and accurately concise rather than laboriously detailed, and informative rather than decisively authoritative. In many instances, a literature reference accompanies the definition.

History

CHASE, CARL TRUEBLOOD

A history of experimental physics. New York: D. Van Nostrand Company, Inc., 1932. 195 p. illus. 22 cm. \$2.25.

556

Contents: Beginnings of physics. Galileo, the pioneer. The wave theory of light. The mechanical theory of heat. Atoms and molecules. Michael Faraday. Hertz and Maxwell. Cathode rays and X-rays. The discovery of radioactivity. Radioactivity and the Rutherford atom. The birth of the quantum theory. Spectroscopy and the Bohr atom. The experimental basis of the theory of relativity. Michelson and the velocity of light. The electron.

Corpuscular nature of radiation. The wave nature of the electron. Wave mechanics and the new atom.

Note: This book is for the general reader. It surveys the history of physical science from the beginning, traces the contributions of the great physicists, and describes some of the recent developments in atomic physics.

EINSTEIN, ALBERT, AND LEOPOLD INFELD

The evolution of physics; the growth of ideas from early concepts to relativity and quanta. New York: Simon & Schuster, 1938. 319 p. illus. 21 cm. \$2.50. 557

Contents (abridged): The rise of the mechanical view: Vectors. The riddle of motion. Is heat a substance? The rate of exchange. The philosophical background. The kinetic theory of matter. The decline of the mechanical view: The two electric fluids. The magnetic fluids. The velocity of light. The riddle of color. The wave theory of light. Ether and the mechanical view. Field, relativity: The field as representation. The two pillars of the field theory. Field and ether. Ether and motion. Time, distance, relativity. The time-space continuum. General relativity. Quanta: Continuity-discontinuity. Elementary quanta of matter and electricity. The quanta of light. The waves of matter. Probability waves. Physics and reality. Index.

Note: The authors' intention in this volume is to sketch in broad outline the attempts of the human mind to find a connection between the world of ideas and the world of phenomena. The work is intended for the intelligent layman and while there is no attempt to present the theory of relativity so closely associated with the senior author, there is nevertheless a brief outline of the major problems which the theory attempts to solve. The treatment, though non-mathematical, is not over-simplified, and a fair ability to grasp difficult physical and philosophical ideas is required of the reader.

LOEB, LEONARD BENEDICT, AND ARTHUR S. ADAMS

The development of physical thought; a survey course of modern physics. New York: John Wiley & Sons, Inc., 1933. 648 p. illus. 22 cm. \$3.75. 558

Contents: Historical. Mechanics. Heat and the structure of matter. Electricity and magnetism. Light. The electrical structure of matter, and the new physics. References. Probable values of physical constants. Author index. Subject index.

Note: For college survey courses in modern physics. An endeavor is made to show how man's conception of the physical universe has changed as curiosity has led him to make new discoveries. The modern concepts of physics which are the result of the method of science are indicated; and experimentation as a useful tool, and generalization and integration as powerful thought processes, are exemplified.

STILL, ALFRED

Soul of amber: the background of electrical science. New York: Murray Hill Books, Inc., 1944. 274 p. 21 cm. \$2.50. 559

Contents: Amber in ancient times. Electricity becomes a science. The childhood of electrical science. The electrician arrives. Electricity everywhere. Electrical science becomes methodical. Rain, hail, and lightning. Electricity in motion. Amber and lodestone. Lodestone and amber. The legacy of Faraday. Index of names. Index of subjects.

Note: This book is a history of the development of electrical knowledge through the time of Faraday. It is written for the lay reader.

Popular Works

HARRISON, GEORGE RUSSELL

Atoms in action: the world of creative physics. Revised edition. New York: William Morrow and Company, 1941. 401 p. illus. 22 cm. \$3.50. 560

Contents: The taming of energy. When physics goes farming. Sound rides the wire. Glass—more precious than rubies. Light for a living world. The ransomed electron. Sound borrows wings. Eyes that see through atoms. The doctor and the physicist. Glass sharpens vision. Eyes for the memory. Sight conquers space. The capture of melody. Outwitting the weather. Man climbs the winds. Science in war and after. The end is not yet. Acknowledgments. Suggested reading. Index.

Note: A non-technical treatment of physical phenomena as observed in everyday applications, written for the interested layman, particularly young men and women who may be interested in physics as a career. Emphasis is placed on the advances of modern science as realized in such inventions as television, long-distance telephone and telegraph transmission, mercury-vapor and sodium-vapor lamps, radio, polarized light, air conditioning, and other technological achievements. The revised edition contains a new chapter on science in war and after, which discusses some of the consequences on human welfare of current and future scientific research. The bibliography contains 21 books on various aspects of physics for the layman.

LUHR, OVERTON

Physics tells why; an explanation of some common physical phenomena. Illustrated by Ruth C. Schmidt. Lancaster, Pa.: The Jaques Cattell Press, 1943. 318 p. illus. 25 cm. (Humanizing science series) \$3.50. 561

Contents: Of things in general. Some mechanical principles and their applications. Some special kinds of motion. The behavior of solids, liquids, and gases. Electricity: some of its manifestations. Magnetism and some of the applications of electricity. Of light and color. Vision and the bending of light rays. About heat and cold. About the weather. Waves, sound, and music. Some of the newer things. Questions and answers.

Note: In this book the layman will find scientific explanations of the things he sees happening around him every day. The author gives an understanding of basic factors such as weights and measures, electric current, equilibrium, optics, vibration, pressure, temperature, and sound. Then he explains the principles of radio, television, air conditioning, thermodynamics, electromagnetism, ultra-violet radiation, polarization, X-rays, and cosmic rays. Planned to hold the average reader's attention, the book is so written that only a knowledge of simple mathematics is necessary to understand the principles explained. Illustrations are done in cartoon style. As an aid to the lay reader, a self-testing quiz supplement is added.

MASSON, LOUIS T.

Physics made easy. Edited by Jean F. Piccard. New York: Garden City Publishing Co., Inc., 1941. 384 p. illus. 22 cm. \$1.49. 562

Contents: Fundamentals of physics. Forces. Fluids. The motion of bodies. Work and machines. The nature of heat. Transformation of heat energy. Sound. Introduction to electricity. Fundamentals of current electricity. Effects of electricity. Fundamentals of light. Refraction and color phenomena. Safety. Appendix. Index.

Note: A simplified, popular account of the elements of physics as interpreted through everyday applications, for the layman who has had no special scientific background or training and for the youth of high-school age who desires to study without the aid of a teacher. A large number of cartoon-type illustrations are included for the purpose of expressing more clearly some of the fundamental ideas. There are study questions and problems after each chapter.

ROBERTSON, JOHN KELLOCK

Atomic artillery; modern alchemy for everyman. New York: D. Van Nostrand Company, Inc., 1937. 177 p. illus. 21 cm. \$2.25. 563

Contents: Granular matter. Propelling electrified particles. Electrons and lightest projectiles. Heavier projectiles, positive rays. Nature's projectiles. Mass without matter. Cosmic rays. Bringing up the big guns. Modern alchemy. Photon bombardment and a new test. The formation of radio-elements. The conclusion of the matter.

Note: This book gives a popular account of some of the greatest discoveries in atomic physics. It gives many interesting facts about artificial transmutation of the elements, heavy water, and the equivalence of mass and energy.

RUSK, ROGERS D.

Forward with science. New York: A. A. Knopf, 1943. 307 p. illus. 22 cm. \$3.50. 564

Contents: The wave of science. Newly discovered particles. The amazing electron microscope. Keeping up with X-rays. Man-made radioactivity. Smashing atoms. Harnessing atomic energy. What are cosmic rays? Earth—whence and whither? Man outgrows mechanism. Is Einstein outmoded? Reaching for the stars. Does nature make sense? Science and destruction. Remaking the world. Human freedom and destiny. Index.

Note: Practical and theoretical developments of modern physics are authoritatively dealt with for the lay reader. Topics included are artificial radioactivity, the electron microscope, atom-smashing, cosmic rays, X-rays, radium, relativity, social benefits of science, and implications for religion.

SOLOMON, ARTHUR KASKEL

Why smash atoms? Illustrated by Katherine R. Campbell. Cambridge: Harvard University Press, 1940. 174 p. illus. 24 cm. \$2.50. 565

Contents: Introduction. Part I. What is the atom? The electron. The proton. The neutron. The nucleus atom. The atomic number. The nucleus. Part II. How smash the atom? Transmutation. Atom smashers: the voltage doubler. Van de Graaff generator. The cyclotron. The Geiger counter. The cloud chamber. Part III. Why smash the atom? Uranium fission. Atom smashing. Medicine. Physics. Glossary and notes. Index.

Note: Atom-smashing was first achieved in 1919 by Rutherford at Cambridge University. Modern scientific dissection of the atom is achieving results important in physics, chemistry, and medicine. The methods of atom-smashing and the results are described in this book, written for the general reader.

SWANN, WILLIAM FRANCIS GRAY

The architecture of the universe. New York: The Macmillan Company, 1934. 428 p. illus. 22 cm. \$4.00. 566

Contents: Preface. Mediaeval and modern dogmas in nature philosophy. The dawn and development of the modern era. The nature of matter. Development of atomic theory. Modern atomic theories. Certain general principles in physics. The fate of the universe. Dimensions. The restricted theory of relativity. The general theory of relativity. Space and time. Vital processes. Science and theology. Index.

Note: The purpose of this book is to explain simply yet scientifically the broad features of the design of the physical world and especially the significance of man's endeavor to understand that design. Primarily for the educated reader who has no special knowledge of physics or mathematics. Footnotes include bibliographical references.

WILSON, HAROLD ALBERT

The mysteries of the atom. New York: D. Van Nostrand Company, Inc., 1934. 146 p. illus. 23 cm. \$2.50. 567

Contents: Matter and electricity in the nineteenth century. Electrons. Protons. The structure of atoms. Light and photons. Waves and particles. The uncertainty principle. The new theory of atoms. Cosmic rays. Space, time and relativity. Relativity and gravitation. Conclusion. Appendices. Index of subjects. Index of names.

Note: A short book for the general reader on some of the ideas and theories of modern physics. Technical language and mathematics are used sparingly in the main part of the book. The appendixes include short, technical discussions of a number of the important modern experiments and theories.

Mathematical Physics

HOUSTON, WILLIAM VERMILLION

Principles of mathematical physics. New York: McGraw-Hill Book Company, Inc., 1934. 265 p. illus. 23 cm. (International series in physics; F. K. Richtmyer, consulting editor) \$3.50. 568

Contents: Differential equations of the first order and first degree. The mechanics of particles. Linear equations of order higher than the first. Mechanics of vibrating particles. Calculus of variations. Hamilton's principle. Vector analysis. Dynamics of rigid bodies. Theory of vibrating systems. Thermodynamics. Statistical mechanics. Electrostatics. Magnetostatics and the interaction of steady currents. The electromagnetic field. The restricted theory of relativity. Index.

Note: This book aims to fill the gap between the elementary courses in physics and the advanced treatises on special subjects and to introduce the student to the more powerful methods of treating physical problems by giving him an opportunity to apply them to simple cases. Although the subject matter is confined to classical physics, considerable attention is given to those methods which have proved useful in the quantum theory.

LINDSAY, ROBERT BRUCE

An introduction to physical statistics. New York: John Wiley & Sons, Inc., 1941. 306 p. illus. 23 cm. \$3.75. 569

Contents: Dynamical and statistical theories. Elementary probability and statistics. Review of thermodynamics. Classical Maxwell-Boltzmann statistics. The kinetic theory of gases. Classical statistical mechanics. Statistical mechanics by the method of Darwin and Fowler. Fundamentals of quantum statistics. Specific heats of gases and solids. Quantum statistical theory of electrical and thermal properties of metals. Emission of electrons from surfaces. Index.

Note: A brief survey of and introduction to the fundamental methods of statistical technique in use in physics, with a careful analysis of how they are used. It is suitable for use in courses in physical statistics and statistical mechanics for graduate students of the first or second year, and may also be used by advanced undergraduate students who have sufficient background knowledge. The reader must have a knowledge of theoretical physics and advanced calculus if he is to follow the argument. Although the emphasis is on the methodological viewpoint, illustrations are provided for every topic introduced, and there are many practical applications to modern physics, particularly to the properties of gases and solids. A list of problems is given at the end of each chapter.

MARGENAU, HENRY, AND GEORGE MOSELEY MURPHY

The mathematics of physics and chemistry. New York: D. Van Nostrand Company, Inc., 1943. 581 p. illus. 23 cm. \$6.50. 570

Contents: The mathematics of thermodynamics. Ordinary differential equations. Special functions. Vector analysis. Vectors and curvilinear coordinates. Calculus of variations. Partial differential equations of classical physics. Eigenvalues and eigenfunctions. Mechanics of molecules. Matrices and matrix algebra. Quantum mechanics. Statistical mechanics. Numerical calculations. Linear integral equations. Group theory. Index.

Note: A presentation of those parts of mathematics which form the tools of the modern worker in theoretical physics and chemistry, adaptable for use in a foundation course in applied mathematics on the senior college and first year graduate level. The text covers a thorough introductory course in quantum mechanics, a review of thermodynamics, a study of statistical mechanics, plus an approach to the study of special methods of dealing with polyatomic molecules, liquid and solid states, and various methods of numerical computations employed in all branches of physics and chemistry. Problems have been chosen to furnish a representative group of up-to-date scientific calculations. The book is suitable for reference use by scientists or engineers.

Tables

FOWLE, FREDERICK EUGENE

Smithsonian physical tables. Eighth revised edition. Washington, D.C.: The Smithsonian Institution, 1933. 682 p. illus. 23 cm. (Smithsonian miscellaneous collections. Vol. 88. Publication no. 3171) \$3.00. 571

Contents (abridged): Introduction: Units and standards. Miscellaneous conversion tables. Mathematical tables. Birge's physi-

cal constants. Mechanical properties. Densities. Barometric tables. Acoustics. Aerodynamics. Viscosity. Vapor pressure. Thermometry. Melting and boiling points. Thermal conductivities. Expansion coefficients. Specific heats. Latent heats. Heats of combustion, formation. Radiation. Cooling by radiation, conduction and convection. The eye and radiation. Photometric tables. Photographic data. Spectrum wave lengths. Indices of refraction. Reflecting powers. Transmissive powers. Electromotive forces. Electrical resistance. Wire tables. Electrolysis. Dielectric strength. Wireless telegraphy. Magnetic properties. Magneto-optic rotation. Various magnetic effects. Atomic data. Atomic structure. Atomic spectrum series. Radioactivity. Röntgen rays (X-rays). Electron emission. Meteorology. Geodesy. Geophysics. Terrestrial magnetism. Atmospheric electricity. Astronomy. Stellar motions. Binary stars. Variable stars. Star clusters. Nebulae. Appendixes. Index.

Note: A standard reference work for the physicist, meteorologist, and astronomer, as well as for the research engineer in any of the allied branches of physics. Most of the tables are accompanied by short descriptive paragraphs and additional references. Physical units and standards are defined in the introduction. The eighth revised edition contains about 270 new tables including those relating to astrophysics, geophysics, meteorology, geochemistry, atmospheric electricity, atomic data, and other related information.

STRATTON, JULIUS ADAMS, AND OTHERS

Elliptic cylinder and spheroidal wave functions, including tables of separation constants and coefficients, by J. A. Stratton, P. M. Morse, L. J. Chu, and R. A. Hutner. New York: John Wiley & Sons, Inc., 1941. 127 p. illus. 28 cm. \$1.00. 572

Contents: Theory. Introduction to tables. Elliptic cylinder functions. Prolate spheroidal functions. Oblate spheroidal functions. Notes. Tables. Explanations. Separation constants and coefficients for elliptic cylinder functions, prolate spheroidal functions, oblate spheroidal functions.

Note: This volume defines certain standard forms of the solution of the wave equation of three important coordinate systems. Further, it offers a collection of formulas giving the important mathematical properties of these functions, and includes a set of tables from which values of the solutions can be obtained for the more interesting ranges of the variables. The series coefficients, as well as the separation constants and allied coefficients, are included in these tables. The book is designed to aid the applied physicist and the engineer in the solution of hitherto extremely difficult wave problems in the elliptic-cylindrical and spheroidal coordinates.

UNITED STATES. WORK PROJECTS ADMINISTRATION. MATHEMATICAL TABLES PROJECT

Miscellaneous physical tables. Planck's radiation functions and electronic functions. Prepared by the Federal Works Agency, Work Projects Administration for the City of New York, as a report of Official Project No. 65-2-97-33. Arnold N. Lowan, technical director. Conducted under the sponsorship of the National Bureau of Standards. Washington: National Bureau of Standards, 1941. 58 p. 28 cm. U.S., \$1.50; foreign countries, \$1.75. 573

Note: These tables give values for the computation of the energy emitted by a black body at absolute temperature, per unit time, per unit area, in a wave-length interval throughout the solid angle 2π steradians; also the values associated with the calculation of the number of photons emitted in the same wave-length range, per unit time, per unit area, throughout the solid angle 2π steradians. For the sake of uniformity, all entries in these tables are given to five significant figures. There is a short bibliography of previously published tables relating to the same functions. The tables of Planck's radiation functions were published earlier in the *Journal of the Optical Society of America*, February, 1940, from which issue it is here reproduced without change. The tables of electronic functions appear here for the first time. The work, like others in this series, is lithographed from typed original.

Textbooks

ANDERSON, WILLIAM BALLANTYNE

Physics for technical students. Third edition. New York: McGraw-Hill Book Company, 1937. 2 v. in 1. illus. 23 cm. \$4.00. 574

Contents (abridged): Volume I, Mechanics and heat. Volume II, Sound, electricity and magnetism, light. 1921

Note: This text emphasizes the practical applications of physics. It is intended for college students interested in science, agriculture, and engineering. This edition has been extensively revised. About 200 of the illustrations and most of the problems are new.

AVERY, MADALYN

Household physics; a textbook for college students in home economics. New York: The Macmillan Company, 1938. 439 p. illus. (part col.) 22 cm. \$3.50. 575

Contents (abridged): Mechanics—household weights and measures. Fundamentals of mechanics, simple household machines. Heat: Heat and temperature. Household thermometers, quantity of heat, fuels, refrigeration, air conditioning the home, the weather. Electricity: Sources and uses of electricity, magnets and their properties. Electrical heating devices for the home. House wiring, transformers, electric meters, individual farm electric plants. Sound: Musical sounds, acoustical devices. Light: The nature of light, home illumination, lenses, prisms, and gratings, color.

Note: A first course in general physics with household examples and applications. Written for the beginner with no previous training in physics, the basic laws and concepts are presented with a discussion of their host of applications in the household field, from the mechanics of the egg-beater to the principles of air-conditioning, the loud speaker, the photometer, the production of color. The 388 illustrations are a special feature of the book. The author's *Laboratory manual*, New York: Macmillan, 1939, 142 p., \$1.50, prepared to accompany this text but also suitable for use with other texts, presents 25 well-tested experiments illustrating the application of the fundamental principles of physics in the household field.

BAYLEY, PAUL LEVERN, AND CHARLES CLARENCE BIDWELL

An advanced course in general college physics. New York: The Macmillan Company, 1936. 340 p. illus. 22 cm. \$3.50. 576

Contents (abridged): Mechanics: Fundamental concepts of position and motion. Equilibrium. Work and energy. Elasticity. Sliding friction. Impact. Wave motion and sound. Heat: Thermometry. Expansion of gases. Heat as energy. Properties of gases. Thermodynamics. The transfer of heat. Electricity and magnetism: Electrostatics. Magnetism. Electrical measuring instruments. The ballistic galvanometer. Light: The nature of light. Luminous intensity. Illumination and brightness. Diffraction. Electron physics and the quantum theory: Electrons and their properties. The quantum theory. Index.

Note: This book has been designed for the second-year course in general college physics. A knowledge of calculus is essential but the arrangement and treatment are such that calculus need not precede but may be taken concurrently. The problems have been selected to give practice in both the metric and English units.

BLACK, NEWTON HENRY, AND HARVEY NATHANIEL DAVIS

Elementary practical physics. New York: The Macmillan Company, 1938. 710 p. illus. (part col.) 21 cm. \$2.20. 577

Contents (abridged): Simple machines. Mechanics of liquids. Mechanics of gases. Properties of matter. Accelerated motion. Potential and kinetic energy. Heat and expansion. Ice, water and steam. Magnetism. Electric currents and circuits. Generators and motors. Sound waves. Lamps and reflectors. Spectra and color. Vacuum tubes and radium. Index.

Note: This elementary text, of interest to both beginning stu-

dent and general reader, emphasizes the social and industrial applications of physics. Review questions and problems are given at intervals throughout the book, and the appendix contains a review of the fundamentals of arithmetic, algebra and geometry. There are numerous helpful diagrams and illustrations.

BLACK, NEWTON HENRY

An introductory course in college physics. Revised edition. New York: The Macmillan Company, 1941. 734 p. illus. (part col.) 24 cm. \$3.75.

578

Contents: Mechanics: Introduction—weights and measures. Simple machine elements, torque. Work, power, and efficiency. Liquids at rest. Pressure of gases. Concurrent and non-parallel forces. Properties of materials, molecular forces, surface tension. Uniformly accelerated motion. Three laws of motion. Energy and momentum. Rotary motion. Simple vibratory motion. Fluids in motion. Heat: Temperature and expansion. Measurement of heat. Transmission of heat. Heat engines. Magnetism and electricity: Magnetism. Electrostatics. Electric currents. Electric circuits. Magnetic and chemical effects of electric current. Electric power. Heating, and lighting. Generators and motors. Induction coils and transformers. Alternating currents. Electric waves. Electric discharge through gases. Sound: Sound waves. Musical sounds. Light: Lamps and reflectors. Refraction of light. Optical instruments. Spectra and color. Diffraction and interference. Polarized light. Structure of the atom. Appendix. Index.

Note: This textbook for first-year college courses places the emphasis on the fundamental laws and principles of physics and introduces theories only in so far as they are deemed helpful to an understanding of the significant facts. Numerous applications of physics have been introduced to motivate the topic under discussion and to illustrate the abstract statement of a law by presenting it in action. Summaries of the important laws and of the formulæ covered are given at the end of each chapter, followed by short lists of references. Problems are given at frequent intervals throughout the text. The only mathematics required is a working knowledge of elementary algebra. There are a large quantity of new illustrations in the second edition, which has been rearranged to be useful particularly to those students preparing for studies in physiology and medicine, as well as for prospective engineers in various fields.

BLACKWOOD, OSWALD HANCE

General physics, a textbook for colleges. New York: John Wiley & Sons, Inc., 1943. 622 p. illus. 22 cm. \$3.75.

579

Contents: Mechanics. Molecular physics and heat. Vibrations, wave motions, and sound. Light. Electricity and magnetism. The new physics. Index.

Note: The first chapter of this introductory textbook treats of the relationships of physics to other sciences. Little mathematics is used in the first five chapters, and throughout the book reasoning is emphasized rather than mathematics. The absolute system of force units is used rather than the gravitational system. The electromagnetic system replaces the International system of electrical units, and the author introduces as an alternative a simplified treatment of the meter-kilogram-second system. There is an excellent presentation of modern physics. A chapter on alternating-current theory and one on the electrical theory of light emission and absorption, as well as others on radio, radioactivity, the photoelectric effect, and the planetary atom, are included.

CULVER, CHARLES AARON

A textbook of physics; for students of science and engineering. New York: The Macmillan Company, 1936. 816 p. illus. 22 cm. \$4.00.

580

Contents: Force and motion. Vectors. Equilibrium. Special types of motion. Work and energy. Power. Friction. Machines. Elasticity. Fluids at rest. Fluids in motion. Molecular phenomena in liquids. Nature of heat. Thermometry. Calorimetry. Expansion of solids and liquids. Expansion of gases. Change of state. Transfer of heat. Thermodynamics. Physics of the atmosphere. Nature and general properties of light. Photometry. Reflection. Refraction. Lenses. Interference. Diffraction. Spectroscopy. Color. Polarization. Optical instruments. An electric charge and the electrostatic field. Electrical potential. Capacitance. Current, electromotive force, and resistance. Thermal effects of the current. Thermoelectric and related phenomena. Chemical effects of the current. Primary and secondary cells. Magnetism. Magnetic ef-

fects of the electric current. Electromagnetic induction. Galvanometers and motors. Alternating currents. Electrical and magnetic units. Electronics. Applications of electronics. Electromagnetic waves. Radioactivity and atomic structure. Nature and propagation of sound. Musical sounds. Sources of musical sounds. Some applications. Apparatus. Index.

Note: Prepared for students intending to specialize in science or engineering. It presupposes a working knowledge of trigonometry. Tables of constants have been introduced throughout the body of the text instead of being placed at the end of the book.

DUFF, ALEXANDER WILMER, AND MORTON MASIUS

College physics. New York: Longmans, Green and Co., 1941. 588 p. illus. 22 cm. \$3.80.

581

Contents (abridged): Mechanics: Statics. Dynamics. Mechanics of fluids. Sound. Heat. Electricity and magnetism. Light. Appendix. Logarithms. Trigonometric table. Additional exercises. Index.

Note: The present work is an extensive revision of Duff's *College physics*, New York, 1925, and in addition to incorporating the advances in our knowledge of physics made between 1925 and 1941, comprises a number of changes in presentation, chiefly with a view to smoothing out difficulties of exposition and eliminating some obscurities due to excessive brevity of statement in the earlier work. Calculus proofs of theorems or formulas have been placed in the appendix and have been replaced in the text by simpler methods. The aim throughout has been the exposition of fundamental principles for general college students, with no attempt to include details of the applications of physics which belong more properly to engineering. There are a larger number of illustrations than found in the earlier work, including portraits and biographical sketches of several important physicists from Galileo to Planck.

DUFF, ALEXANDER WILMER, EDITOR

Physics for students of science and engineering: Mechanics and sound, by A. Wilmer Duff, editor. Wave motion and light, by Percival Lewis, revised by F. A. Jenkins. Heat, by Charles E. Mendenhall, revised by L. R. Ingersoll. Electricity and magnetism, by R. J. Stephenson. Eighth edition, revised. Philadelphia: The Blakiston Co., 1937. 715 p. illus. 22 cm. \$4.00.

582

Contents (abridged): Mechanics and properties of matter. Wave motion. Heat. Electricity and magnetism. Sound. Light. Index.

Note: Each section in this book was written by a teacher of broad experience in his field, and the whole text was carefully integrated and adapted by Dr. Duff. The illustrations are correlated with the discussions. Problems are given at the end of each chapter and a supplementary group is included at the back of the book. Use is made of college freshman mathematics and the calculus is occasionally employed. This edition has been extensively revised. The section on electricity and magnetism is entirely new. New problems and illustrations have been added.

DUNNING, JOHN RAY, AND H. C. PAXTON

Matter, energy, and radiation. New York: McGraw-Hill Book Company, Inc., 1941. 668 p. illus. 23 cm. (Columbia College natural science series. 1) \$3.50.

582a

Contents: Part I, Science: Science and civilization. The rise of science—the history of astronomy. A modern science—astronomy today. Part II, Matter: Properties of matter. Atoms and molecules. Part III, Energy: Ideas about energy. Heat energy. Energy in waves. Electric energy. Electric and magnetic energy. Putting electric energy to work. Motion within matter. Science and the weather. Industry and transportation. Part IV, Radiation: The electron. Electromagnetic waves. Electron tubes—radio—television. Light and the atom. X-rays. The atom's nucleus. Atomic transmutation. Cosmic rays. Matter, energy, and radiation. Index.

Note: This text was originally prepared for students in Columbia University taking the first semester of the two-year sequence in the sciences. The work is designed for those students who do not intend to enter the sciences professionally, but who do desire

a general acquaintance with the chief fields of scientific investigation, a discussion of the major problems, concepts, and theories in the field of general science, and an introduction to experimental techniques. Its aim is to present as systematically as possible those themes of modern science that are of fundamental significance and general interest. It focuses attention on the three major concepts of matter, energy, and radiation, emphasizing important subtopics without going into the minor details. Questions and short bibliographies conclude each of the chapters.

ELDRIDGE, JOHN ADAMS

College physics. Second edition. New York: John Wiley & Sons, Inc., 1940. 702 p. illus. 22 cm. \$3.75. 583

Contents (abridged): Matter. Liquids. Gases. Elasticity of solids and liquids. Statics: Balanced forces. Balanced torques. Uniformly accelerated motion. Force and motion. Work and energy. Simple machines. Energy of fluids. Vibratory motion. Angular motion. Gravitation. Survey of mechanics. Molecular attraction and molecular motion. Thermal expansion of solids and liquids. Expansion of gases. Heat. Change of state. The laws of thermodynamics. Wave motion. Sound. Magnetic fields. Electrical potential energy. Flow of electricity. Resistance. Electrical energy and heat. Electrolysis. Electromagnetism. Flow of alternating currents. Vacuum tubes. Radio. Electromagnetic theory. Relativity. Discharge through gases. Radioactivity and nuclear physics. Propagation of light. Mirrors. Refraction. Lenses. Optical instruments. Dispersion. Interference and diffraction. Polarization. Emission and absorption of light. Appendixes. Index.

Note: Emphasis in this elementary textbook is placed upon general cultural values and the human interest in the development of the sciences. The approach is from the standpoint of everyday experience, with attention to recent developments. This edition is considerably revised.

FOLEY, ARTHUR LEE

College physics. Third edition. Philadelphia: The Blakiston Company, 1941. 757 p. illus. (part col.) 22 cm. \$3.75. 584

Contents (abridged): Mechanics, properties of matter. Heat. Magnetism and electricity. Sound. Light. Matter, energy, the "new physics."

Note: This is a textbook for beginning students in colleges of liberal arts and sciences. Chapters are equal in length to insure balanced assignments; a conversational style is used; abundant historical material is provided. The problems illustrate physical principles and laws and involve a minimum of mathematical work. Answers are provided for half of the problems. The third edition has fewer chapters than the previous editions. More illustrations and problems have been added, and a new index has been made.

HAUSMANN, ERICH, AND EDGAR P. SLACK

Physics. Second edition. New York: D. Van Nostrand Company, Inc., 1944. 756 p. illus. (part col.). 21 cm. \$4.00. 585

Contents: Mechanics: Fundamental quantities. Vectors. Uniform motion. Uniformly accelerated motion. Force. Rotational motion. Statics. Mechanical energy. Harmonic motion. Elasticity and impact. Liquids at rest. Liquids in motion. Mechanics of gases. Heat: The effects of heat. Change of state. Calorimetry. Thermal behavior of gases. Work and heat transfer of heat. Electricity and magnetism: Electric charge. Magnetism. Current and resistance. Electric cells. Electromagnetism. Inductance and capacitance. Alternating currents. Elements of electrical machinery. Thermoelectricity and thermionics. Fundamentals of electrical communication. Sound: Wave motion. Sound production. Sound reception and control. Light: Sources and velocity of light. Reflection and refraction. Dispersion, spectra and color. Lenses. Optical instruments. Interference and diffraction. Polarized light. Radiation.

Note: This college textbook emphasizes the engineering applications of physical science and the solution of practical problems. Principles are clearly presented and are then used to explain engineering processes and methods, as well as to derive formulas for solving practical problems, which are worked out in detail. The book contains more than 800 problems to be solved by the student.

HECTOR, LUTHER GRANT, AND OTHERS

Electronic physics, by L. Grant Hector, Herbert S. Lein, and Clifford E. Scouten. Philadel-

phia: The Blakiston Company, 1943. 355 p. illus. (part col.) 22 cm. \$3.75. 586

Contents: Discovery and nature of electricity. Some simple characteristics of electricity. Volts, amperes and ohms. Electric power and energy. Electrolysis. Batteries. Magnetism. Electric motors and meters. Induced electric currents. Inductance and alternating current. Condensers and alternating current. Wireless. Electron tubes. X-rays. Nature of light. Illumination. Reflection of light. Some applications of mirrors and lenses. Infra-red and ultra-violet. Photoelectricity. More about waves. Natural radioactivity and transmutation of elements. Transmuting the elements. Index.

Note: In this college textbook all electrical phenomena are treated from the electron-proton point of view. The electrical nature of atoms of all elements is constantly used in the explanations throughout the text thus enabling the student to promptly follow the phenomena of radioactivity and modern transmutation presented in the closing chapters of the book. Ordinary light, wireless and X-rays are shown to be closely related, and to be various aspects of electrical phenomena. Photoelectricity and electron tubes are presented as a unified part of the entire subject. Problems are presented in graded groups. Many of the illustrations, including diagrams, are printed in red and black.

HEIL, HERMAN GUSTAVUS, AND WILLARD H. BENNETT

Fundamental principles of physics. New York: Prentice-Hall, Inc., 1938. 631 p. illus. 23 cm. (Prentice-Hall physics series, E. U. Condon, editor) \$5.00. 586a

Contents (abridged): Static forces. Forces of friction. Hydrostatics. Elasticity. Motion of a particle. Newton's equation of motion. Types of motion. Work, energy, and power. Temperature and expansion. Heat. The general gas law. Energy relations in gases. Thermodynamics. Vapor, liquid, and solid phases. Refrigeration. Wave motion. Sound. Light. Electric circuits. Simple networks: Kirchhoff's laws. Resistance. Electric charge. Potential difference. Condensers. Conductivity. Magnetic fields. Electric meters. Induced electromotive forces. Magnetic circuits. Oscillatory and alternating currents. Atomic physics. Appendix. Index.

Note: Approximately one-third of this introductory college text is devoted to the laws and phenomena of electricity and magnetism, and is thus well suited for courses in engineering schools. The aim is to correlate very closely the principles of physics and engineering with the study of calculus, the text introducing elementary differentiation and integration of simple functions early in the course. There are many numerical problems and worked examples in each chapter.

HENDERSON, WILLIAM D.

Problems in physics for technical schools, colleges, and universities. Second edition. New York: McGraw-Hill Book Company, Inc., 1931. 245 p. illus. 23 cm. \$2.25. 586b

Contents: Introductory. Mechanics of solids. Mechanics of fluids. Molecular mechanics. Heat. Sound. Magnetism. Electricity. Light. Radiation. Appendix. Index.

Note: This textbook presents a series of 835 problems to supplement university courses in general physics. The purpose is to stimulate the student's interest and clarify his understanding of physics by giving a variety of practical and workable problems for solution. Accompanying each set of problems is a brief statement of the principles involved, together with illustrative examples. The text of the second edition represents a thorough revision of the 1916 edition, the order and character of the problems being somewhat changed and new subjects added so as to bring the material into conformity with modern advances in the field of physics. The appendix consists of tables.

HOWE, HARLEY EARL

Introduction to physics. New York: McGraw-Hill Book Company, Inc., 1942. 559 p. illus. 23 cm. \$3.75. 587

Contents (abridged): Newton's laws of force and motion. Accelerated motion. The effect of force on motion. Equilibrium of a rigid body. The behavior of spinning bodies. Work and energy. Forces in liquids at rest. Forces in gases at rest. Forces in moving fluids. Molecular forces in liquids and solids. Vibrations and



waves. Sound and hearing. Heat and temperature. Change of state: solid-liquid. Change of state: liquid-vapor. Transfer of heat: radiation. Fundamental phenomena of electricity at rest. The nature and production of electric current. Electric currents and magnetic phenomena. Measurements in simple circuits. Electromagnetic induction. Electrical oscillations. Ionic phenomena in gases. Electrons and radiation. The atomic nucleus. General properties of light. Lenses. Optical instruments. Dispersion and spectra. Diffraction and interference. Polarization.

Note: Unusual precision of statement and clarity make this text well suited to the first course in college physics for non-technical students.

HULL, GORDON FERRIE

An elementary survey of modern physics. New York: The Macmillan Company, 1936. 457 p. illus. 22 cm. \$3.50. 587a

Contents: Molecules—in swarms. We discover and weigh the electron. We weigh atoms and discover isotopes. Simple properties of orbits; the discovery of the nuclear atom. Radiation. The photoelectric effect. Atomic spectra and the Bohr theory. X-rays. Electron tubes. Electrical phenomena in gases and solids. The Zeeman and Raman effects. Radioactivity: spontaneous transmutation of elements. The beginning of artificial transmutation. Cosmic rays. Transmutation of the elements. Induced or artificial radioactivity. Waves, particles, new atom pictures. Limitations imposed by nature—the uncertainty principle. Modern applications of physics. Appendix. Index.

Note: An introductory text for college students, intended not only for those who are majoring in physics but also for students specializing in other fields who may wish only a general knowledge of modern physics. In order to give the more advanced students some of the theoretical aspects of the subject, a few mathematical derivations are given in the Appendix. Only simple algebra is employed throughout the text proper. Emphasis is placed on the analogy between the orbits of electrons and those of the planets in the section dealing with the nuclear atom.

JAUNCEY, GEORGE ERIC MACDONNELL

Modern physics; a second course in college physics. Second edition. New York: D. Van Nostrand Company, Inc., 1937. 602 p. illus. 22 cm. \$4.00. 588

Contents: Historical introduction. Some useful mathematics. Wave motion. Alternating currents. Electromagnetic theory of radiation. Properties of moving charged bodies. The electron. Relativity—special theory. Kinetic theory of gases. Specific heats and heat radiation. Electrons in metals. The photoelectric effect. X-rays. Some applications of X-rays. Bohr theory of spectra. The quantum theory. Critical potentials. Radio and television. Radioactivity and isotopes. Nuclear physics. Cosmic rays. Geophysics. Astrophysics. Relativity—general theory. Physics of high pressure. Philosophical implications. Appendices. Answers to problems. Index.

Note: Designed for students who have had introductory courses in college mathematics and college physics. In this edition differential equations have been eliminated from the treatment, and new subject material has been added.

KILBY, CLINTON MAURY

Introduction to college physics. Second edition. New York: D. Van Nostrand Company, Inc., 1938. 398 p. illus. (part col.) 22 cm. \$3.25. 589

Contents: Mechanics: Introductory. Kinematics. Dynamics. Hydromechanics. Sound: Waves. Physical basis of music. Heat: Nature and effects of heat. Transmission of heat. Thermodynamics. Magnetism and electricity: Magnetism. Electrostatics. Electrodynamics. Electric discharges and radiations. Light: Nature and propagation. Optical instruments. Color. Polarization. Photometry. Appendix. Index.

Note: A textbook for first courses. It requires no previous knowledge of physics and no mathematics higher than elementary algebra and geometry. This edition has been rearranged and extensively revised. The author's *Laboratory manual of physics*, second edition, New York: Van Nostrand, 1940, 146 p., \$1.75, includes many experiments designed for colleges which have limited laboratory equipment, as well as experiments which require more elaborate facilities.

KIMBALL, ARTHUR LALANNE

A college textbook of physics. Fifth edition, revised by Peter I. Wold. New York: Henry Holt and Company, 1937. 729 p. illus. 22 cm. \$4.00. 590

Contents (abridged): Introduction. Mechanics: General principles. Statics. Kinetics of a particle. Rotation of rigid bodies. Universal gravitation. Liquids and gases: Fluids at rest. Fluids in motion. Properties of matter and its internal forces. Wave motion and sound. Heat. Magnetism. Electrostatics. Electric currents. Radioactivity. Light. Radiation and the quantum theory. Appendixes. Index.

Note: A textbook adapted to the needs of students taking the general first-year course in college. Mathematical explanations and derivations have been kept to an absolute minimum in the belief that the average beginning college student does not easily grasp mathematical reasoning and requires considerable time and experience to learn to think in algebraic symbols. The purpose is to give the student clear and distinct conceptions of the various ideas on phenomena of physics and to clarify the relations between them. Features of the fifth edition are a slight reduction in size to make the book better adapted to the length of the average course, the incorporation of the material of modern physics into the text proper instead of in an appended chapter as formerly, and new data on mechanics.

KNOWLTON, ANSEL ALPHONSO

Physics for college students; an introduction to the study of the physical sciences. Second edition. New York: McGraw-Hill Book Company, Inc., 1935. 623 p. illus. (part col.) 23 cm. \$3.75. 591

Contents (abridged): The place of physical science in modern civilization. Measuring the work a machine does. Power. Friction. Nonconcurrent forces. The beginnings of modern physics. The description of motion. Heat and energy. Special heat measurements. Some properties of matter. The atomic theory. The kinetic molecular theory. Heat engines. Physics of the air. The liquid state—surface tension. Evaporating, freezing, and other kinetic molecular phenomena. Hydrostatics. Fluids in motion. Elastic bodies. The transmission of energy. Sound and hearing. Electrified bodies. The ether concept and fields of force. Magnets and magnetic fields. Electric currents and energy. The laws of electric circuits. Dynamos and motors. Alternating currents. Telegraph, telephone, and radio. The nature of light. Mirrors, lenses, and images. The eye and some other optical instruments. Interference and diffraction. Electromagnetic waves. Ether and matter. The theory of relativity. The complete electromagnetic spectrum. Protons and atoms. X-ray spectra. The production of radiation. The structure of atoms. Index.

Note: A college textbook primarily intended for use in a general college course rather than in a technical or engineering curriculum. The author attempts to treat the study of physics from a humanistic rather than technical standpoint so as to emphasize the story of man's progress in the mastery of his physical environment. In the second edition there is a rearrangement of chapters, a further simplification in the mathematics used, and the addition of new material on atomic physics. The author has written with Marcus O'Day the following laboratory manual to be used with this text: *Laboratory manual in physics*, second edition, New York: McGraw-Hill Book Company, 1935, 137 p., \$1.25.

LEMON, HARVEY BRACE, AND MICHAEL FERRENCE, JR.

Analytical experimental physics. Chicago: The University of Chicago Press, 1943. 584 p. illus. 30 cm. \$7.50. 592

Contents: Mechanics: Kinematics. Dynamics of a particle. Conservation of momentum. Work and energy. Rigid bodies in equilibrium. Rotational motion. Elasticity. Simple harmonic motion. Mechanics of fluids. Hydrodynamics. Surface tension. Heat: Historical résumé. Temperature. Gas laws and the kinetic theory. Quantity of heat. Latent heats and changes of state. The transmission of heat. Thermodynamics and heat engines. Electricity and magnetism: Magnetostatics. Electrostatics. Electromagnetism. Ohm's law. Conduction of electricity through liquids. Circuit theory. Direct-current instruments and measurements. Thermoelectricity. Electromagnetic induction. The magnetic properties of

iron. Direct-current motors and generators. Alternating currents. Electrical measuring instruments for varying currents. Conduction through gases. Thermionic emission. Wave motion, sound, and light: The geometry of wave motion. Waves on the surface of liquids. Sound. Musical sound and the science of music. Light. Physical optics. Polarized light. Spectroscopy. Quantum theory. Mathematical appendix. Index.

Note: Primarily a second-year college text and laboratory manual covering mechanics, heat, electricity and magnetism, wave motion, sound, and light. The worked examples, practice problems, review questions, and a list of mathematical formulas also make it suitable for self-instruction. By means of enlarged reproductions of strips of motion picture film, a large number of demonstration experiments are presented step by step. To aid those who must conduct courses very much shorter than the one represented by this text, about 100 of the more difficult sections that may be conveniently omitted have been starred in the book's table of contents.

LINDSAY, ROBERT BRUCE, AND HENRY MARGENAU

Foundations of physics. New York: John Wiley & Sons, Inc., 1936. 537 p. illus. 23 cm. \$5.00. 593

Contents: The meaning of a physical theory. Space and time in physics. The foundations of mechanics. Probability and some of its applications. The statistical point of view. The physics of continua. The electron theory and special relativity. The general theory of relativity. Quantum mechanics. The problem of causality. Index.

Note: An advanced textbook on the nature of physical ideas, concepts and laws, the methods of physical description, and the structure of theories. Emphasis is placed on imparting an understanding of the sciences, rather than on a knowledge of the mathematical and experimental details.

LINDSAY, ROBERT BRUCE

General physics for students of science. New York: John Wiley & Sons, Inc., 1940. 534 p. illus. 23 cm. \$3.75. 594

Contents: Part I, General introduction: What is physics? Survey of the history of physics. Some properties of matter. Part II, Mechanics: Kinematics. Dynamics. The concepts of mass and force. Application of the equation of motion. Work and energy. Motion of a system of particles. Center of mass. Static forces. Dynamics of rigid bodies. Deformable bodies and elasticity. Fluids. Part III, Heat: Thermometers and temperature. Thermal expansion. Calorimetry and change of state. Kinetic theory. The mechanical theory of heat and thermodynamics. The transfer of heat. Part IV, Electricity and magnetism: Magnetism and the magnetic field. Fundamental phenomena of electrostatics. Elementary theory of electrostatics. Electric-current phenomena. Thermoelectricity. Electromagnetism. Alternating currents and electric oscillations. Discharge of electricity through gases. Part V, Radiation: Wave motion and acoustics. Light waves and rays. Geometrical optics. Physical optics. Electromagnetic radiation and the constitution of matter. Index.

Note: A textbook for introductory courses in college physics. The author aims to present the fundamentals of physics and to impart a clear conception of the technique of science. Particular emphasis is given to the method of physics and the evolution of physical theories both from the logical and historical viewpoints. A knowledge of elementary calculus is assumed.

MENDENHALL, CHARLES ELWOOD, AND OTHERS

College physics. By C. E. Mendenhall, A. S. Eve, D. A. Keys, and R. M. Sutton. Boston: D. C. Heath and Company, 1944. 693 p. illus. (part col.) 24 cm. \$4.00. 594a

Contents (abridged): Motion. Statics. Force and motion. Energy and power. Friction and machines. Rotation. Elasticity. Gravitation. Hydrostatics. Mechanics of gases. Hydrodynamics. Properties of fluids. Vibrations and oscillations. Sound waves. Musical sounds. The measurement of temperature. Expansion. Kinetic theory of gases. Calorimetry. Transfer of heat. Heat and work. Magnetism. Electrostatics. Condensers and capacitance. Current electricity. Heating effects of current and thermoelectricity. Chemical effects of the electric current. Magnetic fields and motion. Electromagnetic induction. Alternating currents and oscillatory circuits. Conduction of electricity through gases. Radio. Nature of light and photometry. Velocity of light. Reflection and

refraction. Lenses. Interference. Polarization. Photoelectricity. Radioactivity. Atomic structure. Appendix. Answers to problems. Index.

Note: An introductory college text which attempts to keep the mathematical requirements to a minimum without sacrificing clarity. No previous mathematics beyond algebra and trigonometry are assumed. The book is divided into 55 short chapters each containing worked examples followed by a series of typical graded problems of a practical nature. The work is a revision and enlargement of Mendenhall, Eve, and Keys's *College physics*, Boston, 1935, 592 p., which is now out of print.

MILLIKAN, ROBERT ANDREWS, AND OTHERS

Mechanics, molecular physics, heat, and sound; by Robert Andrews Millikan, Duane Roller and Earnest Charles Watson. Boston: Ginn and Company, 1937. 498 [really 574] p. illus. 24 cm. \$4.25. 595

Contents: Some important references. The foundation of dynamics. Effect of several forces on a particle. Work, power, and energy. The laws of impact. Rigid bodies and equilibrium. The dynamics of rigid bodies. Elastic bodies. Temperature and some of its effects. The discrete nature of matter and the kinetic-molecular theory of gases. The properties of vapors. Quantity of heat and calorimetry. The mechanics of fluids. Motion with varying acceleration. Wave motion and sound. Problems for review. Bibliography. Appendixes. Index.

Note: This college textbook is intended for students who plan to specialize in a physical science or in engineering. General principles are correlated with a large amount of related material. Laboratory experiments are included and there is a comprehensive, annotated bibliography. Elementary physics and trigonometry are prerequisites.

PAGE, LEIGH

Introduction to theoretical physics. Second edition. New York: D. Van Nostrand Company, Inc., 1935. 661 p. illus. 23 cm. \$6.50. 596

Contents: Introduction: Vector analysis. Part I, Dynamics: Dynamics of particles. Dynamics of rigid bodies. Dynamics of deformable bodies. Advanced dynamics. Part II, Hydrodynamics: Hydrodynamics of perfect fluids. Hydrodynamics of viscous fluids. Part III, Thermodynamics: Classical thermodynamics. Statistical mechanics. Kinetic theory of gases. Part IV, Electromagnetism: Electrostatics and magnetostatics. Electric currents. Electromagnetic theory. Part V, Optics and spectroscopy: Geometrical optics. Physical optics. Origin of spectra. Index. ✓

Note: A textbook for first-year graduate students and for college seniors who are specializing in physics. It aims to provide the student with an elementary survey of the whole field of theoretical physics. The only mathematics required of the reader is a good working knowledge of the differential and integral calculus, and an acquaintance with the elements of differential equations. As much vector analysis is developed in the introduction as is needed in the remainder of the book. There are a few literature references at the end of each chapter.

PERKINS, HENRY AUGUSTUS

College physics. New York: Prentice-Hall, Inc., 1938. 820 p. illus. (part col.) 23 cm. (Prentice-Hall physics series, E. U. Condon, editor) \$6.00. 597

Contents: Part I, Mechanics: Statics. Kinetics. Gravitation and falling bodies. Work, energy, power, and friction. Motion in a circle. Rotation of a body. Elasticity. Hydrostatics. Mechanics of gases. Fluids in motion. Surface tension and capillarity. Part II, Heat: Temperature. Thermal expansion. Ideal gases. Heat measurements. Change of state. Vapors and gases. Relations between the states. Heat and energy. Solutions. Propagation of heat. Part III, Wave motion and sound: Waves. Sound and its transmission. Properties of sound. Hearing and acoustics. The physical basis of music. The production of tones. Part IV, Light: Production, propagation, and perception. Reflection. Refraction at a plane surface. Lenses. Optical instruments. Dispersion and spectra. Interference of light. Diffraction. Fraunhofer diffraction. Polarized light. Color. Sources of light. Optical phenomena in nature. Part V, Electricity and magnetism: Magnetism. Electrostatics. Electrodynamics. The electric current. Thermoelectricity. Electrical measurements. Electromagnetism. Induced currents. Electrical machinery. Electrical oscillations. Part VI, Corpuscular

physics: Electrical discharges. Thermo- and photoelectric emission. X-rays and related phenomena. Atomic structure. Radioactivity. Appendix. Index.

Note: The ground covered in this college textbook is a little more extended than usual, the object being to make the change from elementary physics to intermediate courses more easily accomplished. More difficult portions are therefore treated more fully than is usual in elementary texts. The language of mathematics has been freely used but only very simple algebra and trigonometry is employed throughout. Modern physical ideas are introduced wherever they can be discussed with some degree of rigor. Supplementary reading lists are given at the end of each chapter.

RANDALL, HARRISON McALLISTER, AND OTHERS
General college physics, by Harrison M. Randall, Neil H. Williams, and Walter F. Colby. Revised edition. New York: Harper & Brothers, 1937. 687 p. illus. (part col.) 22 cm. \$3.75. 598

Contents: Units and measurement. Force and motion. Work, energy, and power. Moments of force and center of mass. Machines. Rotation of a rigid body. Elasticity. Hydrostatics. Fluids in motion. Molecular phenomena. Wave motion. Reflection and interference. Vibrating sources. Physical theory of music. Thermometry. Expansion. Kinetic gas theory. Calorimetry. Transfer of heat. Change of state. Thermodynamics. Charge, field and potential. Current electricity. Work, energy, and power. Thermoelectric phenomena. Magnetism. Electromagnetism. High-speed particles and radioactivity. Dynamo machinery. Alternating currents. Oscillating circuits. Rectilinear propagation. Reflection. Refraction. Simple optical instruments. Spectrum and color. Interference. Polarized light. Spectroscopy. Appendix. Index.

Note: A full account of the basic principles of physics written from the modern point of view, but including a discussion of the classic principles of physics, many of which are indispensable to an understanding of modern phases of the subject. Strictly modern developments in physical science are introduced where they can be presented as simply and as thoroughly as the classic principles. Among the recent topics treated are stream-lined bodies, forces supporting an airplane, mass spectrograph, nuclear physics, the cyclotron, and polarized light. A large number of problems is provided, and the text is available either with or without answers to them.

ROBESON, FRANK LEIGH

Physics. New York: The Macmillan Company, 1942. 819 p. illus. (part col.) 24 cm. \$4.50. 599

Contents (abridged): Mechanics: Kinematics. Dynamics. Statics. Work and energy. Mechanics of fluids. Gravitation. Machines. Pressure gauges and dynamometers. Elasticity. Molecular forces. Kinetic theory of matter. Wave motion. Sound. Heat: Thermometry. Calorimetry. Change of state. Transfer of heat. Thermodynamics. Electricity and magnetism: Electrostatics. Magnetism. Electrodynamics: Fundamental laws and instruments. Electric energy and power. Electrolysis—batteries. Thermoelectricity. Electromagnetism. Electromagnetic generators. Inductance. Alternating currents and instruments. Electrical discharges in gases. Electronics. Electromagnetic waves—radio. Light: Nature and propagation. Reflection—mirrors. Refraction—prisms—lenses. Diffraction—interference. Double refraction—polarization. Photometry. Color—spectra. Optical instruments. X-rays—radioactivity—cosmic rays. Atomic structure. Transmutation of elements. Index.

Note: A textbook for first college courses in physics. The treatment is intended for classes which include students with some preliminary education and others without preliminary training in the subject. A knowledge of calculus is not required. The distinctive feature of the book is that it is designed for the students without supplementary explanation of the text on the part of the teacher, thus having the time of the teacher free for demonstration and discussion of the solution of the problems.

SAUNDERS, FREDERICK ALBERT

A survey of physics for college students. Third edition. New York: Henry Holt and Company, 1943. 724 p. illus. 22 cm. \$4.00. 600

Contents: Mechanics: Liquids at rest. Air pressure. Motion. Force and motion. Statics. Friction. Work, energy, and power. Rotation. Gravitation. Elasticity and surface tension. Heat: Temperature and expansion. Kinetic theory of gases. Quantity of heat. Heat transfer. Change of state. Heat applications and

thermodynamics. Sound: Vibrations. Wave motion. Other topics in sound. Electricity and magnetism: Magnetism. Electrostatics. Electric currents. Chemical effects of currents. Thermoelectricity. Heating and magnetic effects of currents. Induced currents. Generators and motors. Alternating currents. Electric oscillations and waves. Conduction of electricity through gases. Electron tubes and their applications. Light: Quantity, nature, and speed of light. Reflection and refraction of light. Lenses and curved reflectors. Optical instruments. Dispersion and spectra. Diffraction, color, and interference. Polarized light. X-rays and crystal structure. Photoelectricity and luminescence. Radioactivity. Appendix. Index.

Note: A comprehensive survey of the field of general physics. The consecutive story of the development of physical principles is told with a minimum of mathematics, a large number of illustrative problems, and a proper emphasis on modern discoveries and applications. It includes not only the usual material but also such topics as atom-smashing, the cyclotron, and the "fission" of uranium. The treatment of systems of units is comprehensive and includes the new meter-kilogram-second (MKS) system. The author and F. H. Crawford have prepared *Physical laboratory manual*, third edition, Cambridge, Mass.: Harvard University Press, 1936, 165 p., \$1.75, for use with this text.

SEARS, FRANCIS WESTON

Principles of physics I. Mechanics, heat and sound. Cambridge, Mass.: Addison-Wesley Press, Inc., 1944. 526 p. illus. 23 cm. \$5.00. 601

Contents: Composition and resolution of vectors. Statics. Moments—center of gravity. Linear motion. Newton's second law. Motion of a projectile. Center of mass. Work and energy. Impulse and momentum. Circular motion. Moment of inertia. Rotation and translation. Elasticity. Harmonic motion. Gravitation. Hydrostatics and surface tension. Hydrodynamics and viscosity. Temperature—expansion. Quantity of heat. Transfer of heat. Change of phase. Properties of gas—the ideal gas. Real gases. The second law of thermodynamics. Kinetic theory of gases. Wave motion. Vibration of strings and air columns. Sound waves, the ear and hearing. Index.

Note: This college textbook is intended for the first course in physics. It is primarily concerned with principles, little space being given to practical applications. Many of the problems are taken from examinations given in connection with the course taught by the author. Three systems of units are used: the English gravitational because it is used in engineering work throughout this country, the cgs system because some familiarity with it is essential for any intelligent reading of the literature of physics, and the mks system because of its increasing use in electricity and magnetism as well as because it seems destined eventually to supplant the cgs system.

SHRADER, JAMES EDMOND

Manual of experiments in physics. New York: McGraw-Hill Book Company, Inc., 1937. 262 p. illus. 23 cm. \$2.25. 602

Note: Intended for use in connection with any standard textbook, this manual does not present in detail the theory involved in the experiments. The manual seeks to develop skill in physical manipulation upon which the ability to make accurate measurements depends. In order to train the student in recording data and to facilitate the work of the instructor, set forms are included.

SHRADER, JAMES EDMOND

Physics for students of applied science. New York: McGraw-Hill Book Company, Inc., 1937. 638 p. illus. 23 cm. \$4.00. 603

Contents (abridged): Mechanics. Heat. Electricity. Wave motion. Sound. Light. Index.

Note: A textbook written primarily for engineering college students and others who desire thorough instruction in the fundamentals of physics.

SLATER, JOHN CLARKE, AND NATHANIEL H. FRANK

Introduction to theoretical physics. New York: McGraw-Hill Book Company, Inc., 1933. 576 p. illus. 23 cm. (International series in physics) \$5.00. 604

Contents (abridged): Power series method for differential equations. Power series and exponential methods for simple harmonic vibrations. Damped vibrations, forced vibrations, and resonance. Vector forces and potentials. Lagrange's equations and planetary motion. Generalized momenta and Hamilton's equations. Phase space and the general motion of particles. The motion of rigid bodies. The vibrating string, and Fourier series. Stresses, strains, and vibrations of an elastic solid. Flow of fluids. Electrostatics, Green's theorem, and potential theory. Magnetic fields, Stokes's theorem, and vector potential. Electromagnetic induction and Maxwell's equations. Reflection and refraction of electromagnetic waves. Spherical electromagnetic waves. Huygens' principle and Green's theorem. Fresnel and Fraunhofer diffraction. Waves, rays, and wave mechanics. Schrödinger's equation in one dimension. The correspondence principle and statistical mechanics. Matrices. Perturbation theory. Atomic structure. Interatomic forces and molecular structure. Nuclear vibrations in molecules and solids. Collisions and chemical reactions. Electronic interactions. Electronic energy of atoms and molecules. Fermi statistics and metallic structure. Suggested references.

Note: A unified presentation of both classical and modern physics which aims to bridge the gap between elementary and descriptive physics and advanced theoretical physics. The book attempts to show the student how to appreciate the importance of applying principles developed for one branch of science to the problems of another. Mathematical difficulty and order of historical development determine the sequence of material.

SMITH, ALPHEUS WILSON

The elements of physics. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1938. 790 p. illus. (part col.) 23 cm. \$3.75. 605

Contents (abridged): Mechanics. Wave, motion and sound. Heat. Magnetism and electricity. Electronics. Radiation and atomic structure. Appendices. Tables. Index.

Note: This textbook for college students endeavors to arouse the student's interest in fundamental physical principles by showing their application in practical things with which the student is familiar. This aspect has been emphasized even more strongly in the present edition. A considerable number of new illustrations and problems has been added. A chapter on astrophysics has been included for the first time.

SMYTH, HENRY DE WOLF, AND CHARLES WILBUR UFFORD

Matter, motion and electricity; a modern approach to general physics. New York: McGraw-Hill Book Company, Inc., 1939. 648 p. illus. 23 cm. \$3.75. 606

Contents: Atoms and molecules. Molecular sizes, motions, and forces. Vectors and linear motion. Newton's laws of motion, gravitation. Work and energy. Friction. Temperature and heat. The kinetic theory of gases. Change of state. Static electricity. Electric fields and potential differences. The electronic charge. Batteries, electrolysis, and electric currents. Forces between charges in motion. Magnets and magnetic fields. Electric currents and magnetic fields. Laws of flow of electric currents. Rotational motion. Electrons. Positive rays and isotopes. Radioactivity. Electromagnetic induction. Mechanical and electrical oscillations. Alternating currents. Waves and wave motion. Light. Radiation and matter. Appendixes: Numerical tables. Conversion tables.

Note: In this book, intended primarily for students with a background of high school physics, the authors' purpose has been to review fundamental principles and definitions sufficiently to insure a solid base on which to build, and to present the subject from a fresh approach. Modern physics is introduced earlier than usual. A feature of the book is the wealth of illustrative examples and problems designed to stimulate the student to apply analytical reasoning and judgment to physical problems.

SPINNEY, LOUIS BEVIER

A textbook of physics. Fifth edition. New York: The Macmillan Company, 1937. 721 p. illus. 22 cm. \$3.75. 606a

Contents (abridged): Part I, Mechanics: Length, mass, and time. Vector quantities. Motion. Force and torque. Work and energy. The simple machines. Power. Electricity. Fluids. Surface tension. Part II, Heat: Expansion of solids and liquids. Expansion of gases. Calorimetry. Change of state. Physics of the air. Thermo-

dynamics. Part III, Electricity and magnetism: Magnetism. Electrostatics. Potential. Capacity. The electric current. Magnetic, heating, and chemical effect. The voltaic cell. Electromagnetic induction. Measuring instruments. Telegraph and telephone. Ionization. Electron tubes. Radioactivity. Part IV, Sound: Wave motion. Nature of sound. Musical scale. Part V, Light: Nature of light. Refraction. Defects of mirrors and lenses. Optical instruments. Dispersion. Interference. Photometry and illumination. Color. Polarization. Appendix. Index.

Note: Designed for use as a text in introductory college courses, this work emphasizes the practical aspects of the science of physics, illustrating the various laws by reference to familiar phenomena, and exemplifying principles by discussing their applications. Particular emphasis is placed upon the subject of mechanics, with the topics of vector analysis, force and torque, accelerated motion, work, energy transformations, movement of inertia, and kinetic energy of rotating masses given special prominence. A reorganization of the subject matter on thermal expansion and an extension of the treatment of radiation, electromagnetism, and electron tubes are among the features of the fifth edition.

STEWART, OSCAR MILTON

Physics; a textbook for colleges. Fourth edition. Boston: Ginn and Company, 1944. 785 p. illus. 23 cm. \$4.00. 607

Contents: Mechanics and properties of matter. Heat. Wave motion and sound. Magnetism and electricity. Light. Appendixes: Numerical equivalents and constants. Electrical and magnetic units. Notes on the scientific method. Answers to problems. Four-place logarithms. Trigonometric functions. Relative humidity. Index.

Note: Intended for use in introductory courses. Extensive revisions have been made in this edition to bring the treatment into harmony with the spirit and results of modern physics.

SUTTON, RICHARD MANLIFFE, EDITOR

Demonstration experiments in physics. New York: McGraw-Hill Book Company, Inc., 1938. 545 p. illus. 23 cm. \$4.50. 608

Note: A collection of nearly 1200 lecture experiments in physics prepared under the auspices of the American Association of Physics Teachers with contributions from 200 physicists in 130 institutions. Contains many familiar experiments and many new ones designed to illustrate the principles of physics as taught in high school and college courses.

SWANN, WILLIAM FRANCIS GRAY

Physics. With the assistance of Ira M. Freeman. New York: John Wiley & Sons, Inc., 1941. 274 p. illus. 22 cm. (The sciences; a survey course for colleges, edited by Gerald Wendt) \$2.25. 609

Contents: Part I, Introduction: Scope and purpose of physics. Part II, Dynamics: the study of the motions of bodies: Fundamental principles of mechanics. Vibratory motion. Motion of matter in bulk. Work and mechanical energy. Heat and mechanical energy. Part III, The main divisions of physics: Measurement and units. General properties of matter. Mechanics. Heat. Vibrations and waves. Acoustics. The nature of light. Lens optics. Mirrors, prisms, and gratings. Electrostatics and magnetism. Electric currents and their effects. Electromagnetic induction. Appendix. Bibliography. Glossary. Index.

Note: An elementary survey of physics for both the scientist and the layman. A study is made of the science as a whole, and then of the various divisions of the field. Diagrams and mathematical formulations are used when needed.

TAYLOR, LLOYD WILLIAM

Physics, the pioneer science, by Lloyd William Taylor, with the collaboration, in the chapters on modern physics, of Forrest Glenn Tucker. Boston: Houghton Mifflin Company, 1941. 847 p. illus. (part col.) 24 cm. \$4.25. 610

Contents: Mechanics. Heat. Sound. Light. Electricity. Appendix: List of references. The meter-kilogram-second system of units. Periodic tables. Mathematical tables. Index of authors. Index of subjects.

Note: A text for the introductory college course in physics. In addition to deepening the student's perception of the subject it endeavors to broaden his horizon by showing the relation of physics to the intellectual enterprise as a whole. The author achieves this dual objective by adding to a clear exposition of physical concepts the essential points in their evolution. Thus, as the student learns basic physics, he learns also the dramatic part that physics has played in the making of the modern mind. The scope of the text is classical and modern physics. The MKS system of units is employed. The book includes numerical problems and more than 500 figures and illustrations.

TERRY, EARLE MELVIN

Advanced laboratory practice in electricity and magnetism. Revised by Hugo Bernard Wahlin. Third edition. New York: McGraw-Hill Book Company, Inc., 1936. 318 p. illus. 23 cm. \$3.00. 611

Contents: General directions—electrical units. Galvanometers. Measurement of resistance. Measurement of potential difference. Measurement of current. Measurement of power. Measurement of capacitance. Magnetism. Self and mutual inductance. Elementary transient phenomena. Sources of electromotive force and detecting devices for bridge methods. Alternating current bridges. Conduction of electricity through gases. Photometer and optical pyrometer. Fundamental radio frequency measurements. Electron tubes. Oscillators and amplifiers.

Note: A laboratory textbook on electrical measurements, discharge of electricity through gases, radio activity, and thermionics. In this edition experiments have been revised, and new ones added. The chapter on electron tubes has been partially rewritten to give familiarity with the electron theory of metals, in particular as it applies to thermionic emission.

WENIGER, WILLIBALD

Fundamentals of college physics. New York: American Book Company, 1940. 704 p. illus. 22 cm. \$3.75. 612

Contents (abridged): Composition and resolution of forces. The physical equation. Newton's first and second laws of motion. Friction. Newton's third law and the scholium. Newton's law of universal gravitation. Simple machines. Uniform circular motion. The gyroscope. Elasticity. Simple harmonic motion. Curves and their uses. Surface tension and allied phenomena. Fluids at rest. Fluids in motion. Expansion and thermometry. Heat energy and calorimetry. The kinetic theory of matter. Transfer of heat. Thermodynamics. Refrigeration. Waves in water and in strings. Acoustics. The magnetic field. The electric field. Introduction to current electricity. Branched circuits and measuring circuits. Chemical production of a potential difference. Chemical effects of a current. Thermal production and thermal effects of an electric force. Condensers. Electrical machinery and instruments. Magnet properties of iron. Electrical oscillations and radio. Light. X-rays. Index.

Note: This introductory course is designed to give college students a thorough knowledge of the fundamental principles of general physics. Motion is the central theme around which the subject is built up. The only prerequisites are high school algebra and geometry.

WHITE, HARVEY ELLIOTT

Classical and modern physics; a descriptive introduction. New York: D. Van Nostrand Company, Inc., 1940. 712 p. illus. (part col.) 23 cm. \$3.75. 613

Contents: Introduction: Optical illusions. Units of measurement. Mechanics: Forces, vectors and center of gravity. Newton's laws of motion. Gravity, falling bodies, and Newton's laws. Work, energy and power. Mechanics of rotation. Properties of matter: Properties of solids. Properties of liquids. Properties of gases. Heat: Temperature and expansion. Kinetic theory and change of state. Heat transfer and refrigeration. Sound: Vibrations and waves. Sound. Musical instruments and scales. Electricity and magnetism: Electricity at rest. Magnetism. Electricity in motion. Effects of electric currents. Electrical transformers. Light: Light and its velocity. Reflection, refraction and dispersion. Lenses, mirrors and optical instruments. The science of color. Diffraction and interference. The polarization of light. Discharges through gases: Discovery of the electron. Atoms and the periodic table. X-rays. The quantum theory and atomic structure: Radio-

activity. The spectrum. A classification of spectra. The photoelectric effect. The structure of the atom. Atomic and nuclear processes: Photon collisions and atomic waves. Cosmic rays. Atomic collisions and nuclear disintegrations. Disintegration and induced radioactivity. Inside the nucleus. Astrophysics: The sun. The stars. The theory of relativity. Appendix. Index.

Note: A college textbook for a beginning course.

WHITE, MARSH WILLIAM, EDITOR

Practical physics, by Marsh W. White, editor, Kenneth V. Manning, Robert L. Weber, R. Orin Cornet, and others on the physics extension staff; prepared under the direction of the Division of Arts and Science Extension, the Pennsylvania State College. New York: McGraw-Hill Book Company, Inc., 1943. 365 p. illus. 23 cm. (The Pennsylvania State College. Industrial series) \$2.50. 614

Contents (abridged): Fundamental units. Linear measurements. Temperature measurement; thermal expansion. Heat quantities. Heat transfer. Properties of solids. Properties of liquids. Gases. Meteorology. Force and motion. Friction; work and energy. Simple machines. Power. Concurrent forces; vectors. Nonconcurrent forces; torque. Rotary motion; torque; moment of inertia. Vibratory motion; resonance. Sources and effects of electric current. Ohm's law; resistance. Electrical measuring instruments. Induction. Alternating current. Communication systems; electronics. Sound waves. Acoustics. Light; illumination and reflection. Refraction of light; lenses; optical instruments. Appendices. Index.

Note: A simplified textbook designed for a condensed course in practical physics for adult training programs, emphasizing those parts of physics that are basic to practical use in engineering, war industry, technical work, and the armed services. The simplest algebra and trigonometry constitute the extent of the mathematics used, and the subjects are arranged to enable the student to review the mathematics concurrently with the physics. Simple experiments are included in each chapter to illustrate the topics discussed, and each topic is also illustrated with one or more solved problems.

WHITMAN, WALTER GEORGE

Household physics. Third edition. New York: John Wiley & Sons, Inc., 1939. 436 p. illus. 23 cm. \$3.00. 615

Contents: Introduction: Matter and energy. Machines of the home. The automobile. Our uses of heat. How heat is measured. How heat travels. The weather. Boiling water and steam. Cooking devices and processes. Small heaters and hot-water supply. House heating. Protection against fire. Air conditioning. Ice and refrigeration. Electricity in everyday life. Electrical devices in the home. Properties of light that make it useful. Sunlight. Illumination. Visual aids. The camera and photography. The home water supply. Household measurements. Molecular forces. Solutions and other dispersions. Sound in the home. Forms of radiant energy. Radio. Index.

Note: Designed primarily for use by home economics students, the book leads through familiar, everyday experiences to the fundamental principles of physics. In the third edition three new chapters are presented, dealing with protection against fire, visual aids, and photography. Extensive revisions and additions have been made in the chapters on the automobile, weather, air conditioning, refrigeration, electric heating, radio, solution and dispersions, and home lighting. The treatment is simple in nature, and avoids an excess of mathematical and theoretical matter.

WILLIAMS, SAMUEL ROBINSON

Foundations of college physics. Boston: Ginn and Company, 1937. 630 p. illus. (part col.) 24 cm. \$4.00. 616

Note: A foundation course which combines a purely physical approach with that of mathematical analysis, the phenomena of physics being interpreted in the light of what is observed and what is deduced from observations. The author has treated the subject from the viewpoint of laying the foundations for a physicist's career, it being his opinion that this treatment is the best for any serious student. Facts and formulas are translated as far as possible in terms of everyday experiences. The book is generously illustrated with reproductions of line draw-

ings and photographs, many of them showing demonstrations of physical phenomena. The author has prepared a laboratory manual for use with this textbook entitled *Experimental physics*, Boston: Ginn and Company, 1937, 158 p., \$1.16.

ZELENY, ANTHONY, AND HENRY A. ERIKSON

A manual of physical measurements. Sixth edition. New York: McGraw-Hill Book Company, Inc., 1937. 273 p. illus. 21 cm. \$2.25. 617

Contents: Introduction. Mechanics. Fluids. Heat. Sound. Light. Electricity I. Electricity II. Appendix: Mathematical and other tables. Index.

Note: The book is based on the laboratory experiments given in the courses in general physics at the University of Minnesota. A general knowledge of each subject from a supplementary lecture course is assumed, and while no specific book is recommended, explanations of theory are to be sought in the text used for the lectures. The sixth edition contains a complete revision of the sequence and numbering of experiments, as well as the elimination and addition of many experiments.

Weights and Measures

CORNETET, WENDELL H.

Methods of measurement. Bloomington, Ill.: McKnight and McKnight, 1942. 135 p. illus. 25 cm. (Related shop science series) \$0.95. 617a

Contents: Foreword. Introduction. Study procedure. Record of achievement. Linear measure. Outside and inside calipers. Micrometer calipers. Vernier calipers. Geometrical measurements. Commonly used gages. Wood and metal fastening screws. Manufacture and measurement of nails. Weights and volumes. Density. Measuring density of liquids and solids. Specific gravity. Determining specific gravity of solids. Specific gravity of liquids. Determining specific gravity of liquids. Special properties of materials. Determining special properties of materials. Measuring elasticity: tension; bending; torsion. Measuring tensile strength of wire. Heat and temperature. Making temperature conversions. Measuring temperature. Measuring heat. Determining coefficient of linear expansion. Specific heat of solids. Reference tables. Tests.

Note: This textbook is part of a series for teaching science to vocational students. Aside from the illustrated text, it contains exercises and questions; and a set of tests is issued as a 15-page supplement.

JAUNCEY, GEORGE ERIC MACDONNELL, AND A. S. LANGSDORF

M.K.S. units and dimensions and a proposed M.K.O.S. system. New York: The Macmillan Company, 1940. 62 p. illus. 22 cm. \$1.25. 617b

Contents: Units and dimensions in general. The M.K.S. system of units. The fourth fundamental unit. The M.K.O.S. system of units. Gravitational, electric and magnetic forces. Other systems of fundamental units. Appendix: Conversion table. Short bibliography.

Note: As expressed in its foreword, the purposes of this work are: to acquaint electrical engineers, physicists, and teachers and students of electrical engineering and physics with the properties of the new meter-kilogram-second (M.K.S.) system of basic units; to describe methods for changing from one set of basic units to another; to give reasons for the adoption of the ohm as the fourth basic unit (a question left open by the International Electrochemical Commission in 1935); to describe a proposed M.K.O.S. system of basic units; and to discuss the difference between magnetic flux density and magnetic field strength.

JONES, SARAH ANN

Weights and measures in Congress; historical summary covering the period of the Continental Congress to and including the adoption of the Joint Resolutions of 1836 and 1838. Issued March 17, 1936. Washington, D.C.: Government Printing Office, 1936. 19 p. illus. 23 cm.

(United States. Bureau of Standards. National Bureau of Standards miscellaneous publication M 122) Paper, \$0.05. 617c ✓

Contents: Abstract. Introduction. Early provisions for uniformity in weights and measures. Consideration of weights and measures in the Continental Congress. Early discussion in Congress. Thomas Jefferson's report. The Surveyor Act of 1799. Discussions in Congress, 1804-21. John Quincy Adams' report. Resolution of 1826 requesting that experiments be made. Mint Act of 1828 adopting the troy pound. Resolution of 1830 authorizing comparisons of the customhouse standards. Order of 1832 by the Secretary of the Treasury, providing uniform standards for customhouses. Resolution of 1835 urging completion of standards. Joint Resolutions of 1836 and 1838. Conclusion. Source material. Bibliographical references.

Note: This paper presents a detailed account of the steps taken to secure uniformity in weights and measures in the United States. It is an historical account of the various plans and proposals made in or to Congress on this subject, based on actual records of Congress and other original documents, and culminating in the passage of the Joint Resolutions of Congress of 1836 and 1838.

UNITED STATES. BUREAU OF CUSTOMS

Gauging manual, embracing methods for determining capacity of casks, cylinders, tank cars, and large storage tanks. Methods and tables for determining the quantity of distilled spirits by proof, when contents have been ascertained by rod gauging. Methods and tables for determining the quantity of petroleum products, molasses, and oils. Washington, D.C.: Government Printing Office, 1941. 357 p. illus. 23 cm. \$1.25. 617e

Contents: Introduction. Part I, Gauging by the rod method: Description of the rods and scale. Gauging standard casks. Gauging drums and other cylindrical containers. Gauging oval casks. Gauging square and rectangular containers. Gauging tank cars. Gauging casks of carbonated liquors. Computing capacity and contents with the sliding scale. Part II, Distilled spirits and alcoholic products: Definitions. Proofing—distilled spirits. Gauging by the weight method (distilled spirits). Gauging by the rod method (distilled spirits). Miscellaneous alcoholic products. Part III, Bottles, jugs, and similar containers. Part IV, Petroleum products: Gauging drums, tank cars, and similar containers. Gauging large storage tanks. Calibrating storage tanks. Determining group number. Part V, Molasses: Gauging casks, tank cars, and similar containers. Gauging large storage tanks. Part VI, Animal, fish, and vegetable oils. Part VII, Appendix: A comparison of units of weight and measure. Table of foreign weights and measures with approximate United States equivalents. Mathematical formulae and factors. Temperature conversion table. Bibliography.

Note: This manual was prepared for the use of customs officers in determining the quantities of certain commodities when packed or stored in the common types of containers. It is an enlarged and revised edition of the same office's *Gauging manual for use of inspectors of customs in gauging liquids imported in casks, barrels, cisterns, tanks, and other containers*, 1935. An important feature are the tables scattered throughout the text, constituting about one half of the volume.

UNITED STATES. BUREAU OF INTERNAL REVENUE

Gauging manual embracing instructions and tables for determining the quantity of distilled spirits by proof and weight. Washington, D.C.: Government Printing Office, 1939. 579 p. illus. 24 cm. \$1.25. 617f

Contents (abridged): Method of gauging prescribed. Weighing appliances. The weighing system. Proofing distilled spirits. Determination of net wine gallons and proof gallons. Gauging, marking, and stamping packages of alcohol. Tank cars of spirits produced at registered distilleries. Reports of production, entry, and withdrawal of distilled spirits. Soakage or absorption. Allowance for loss of spirits while in warehouse. Computation of tax on dis-

tilled spirits. Stamps. Reduction in proof in distiller's original packages. Commercial or unofficial gauging.

Note: The major part of this manual is devoted to seven tables showing the true per cents of proof spirit, wine gallons and proof gallons by weight, the determination of the number of proof gallons from the weight and proof of spirituous liquor, the fractional part of a gallon per pound of each per cent of proof of spirituous liquor, the weight per wine gallon and proof gallon at each per cent of spirituous liquor, respective volumes of alcohol and water and the specific gravity in both air and vacuum of spirituous liquor, and the correction of volume of spirituous liquors to 60° F.

UNITED STATES. BUREAU OF STANDARDS

Index to the Reports of the National Conference on Weights and Measures from the first (1905) to the thirty-first (1941), inclusive. Compiled by Ralph W. Smith and William T. McCormac. Issued October 14, 1942. Washington, D.C.: Government Printing Office, 1942. 38 p. 23 cm. (United States. Bureau of Standards. National Bureau of Standards miscellaneous publication M 172) Paper, \$0.10. 617g

Contents: Preface. Index by subjects. Index by names of speakers. List of conference reports.

Note: This index supersedes the National Bureau of Standards miscellaneous publication M 103 which indexed the first 21 conference reports. The papers indexed cover a wide variety of weights and measures subjects. The list at the end of the Index shows that as of 1942 there were 20 of the 31 conference reports still available for purchase in Washington.

UNITED STATES. BUREAU OF STANDARDS

Units of weight and measure (U.S. customary and metric); definitions and tables of equivalents. Issued January, 1936 (superseding Bureau of Standards Circular C 47). Washington, D.C.: Government Printing Office, 1936. 68 p. illus. 25 cm. (United States. Bureau of Standards. National Bureau of Standards miscellaneous publication M 121) Paper, \$0.15. 617h

Contents: Introduction. Fundamental equivalents. Definitions of units: Length. Area. Volume. Capacity. Mass. Standards of measurement. Spelling and abbreviation of units. Tables of interrelation of units of measurement. Comparison of metric and customary units from 1 to 9. Special tables. Tables of equivalents from 1 to 999 units: Length. Area. Volume. Capacity. Mass. Metric and English distance equivalents for athletic events (track and field). Graphic comparison chart of screw thread pitches. Status of international metric system in the United States. Index.

Note: This publication concerns itself with the relationship between the metric system and customary measures in the United States. It supersedes Circular C 47, issued July 1, 1914. Necessary corrections and a revised and rearranged text are contained in the new edition.

ZIMMERMAN, OSWALD THEODORE, AND IRVIN LAVINE

Industrial Research Service's Conversion factors and tables. Dover, N.H.: Industrial Research Service, 1944. 262 p. illus. 16 cm. \$2.75. 617i

Contents: Preface. Abbreviations. Definitions and fundamental values. Prefixes. Conversion factors. Conversion tables. Index.

Note: The feature of this handy reference tool is a 200-page table of conversion factors for the changing of scientific and commercial units from one system of measurement to another. This table is arranged alphabetically by name of unit, and gives the multipliers for about 6,500 conversions, ranging from familiar ones such as inches to centimeters, to unfamiliar ones, such as Maxwells to Webers.

Atomic Physics

DARROW, KARL KELCHNER

Introduction to contemporary physics. Second edition. New York: D. Van Nostrand Company, Inc., 1939. 648 p. illus. 23 cm. \$7.00. 618

Contents: The fundamental charge. Electrons. Ions and isotopes. The elements and the nuclear atom-model. The nuclear atom-model attested by scattering of alpha-particles. Correlation of waves and corpuscles. Diffraction of waves by crystals. Ionization. Excitation and the stationary states. Analysis of spectra. Original atom-model of Bohr. Introduction to wave-mechanics. Magnetism, electron-spin and spectra. Miscellaneous as to spectra. First period of transmutation. Second period of transmutation. Mostly concerning neutrons. Instability of nuclei. Subject index. Author index.

Note: This survey of atomic and nuclear physics is characterized by a lucid and readable style. It is suitable for persons, such as engineers, who have some previous training in mathematics. Compared to the first, this edition has been extensively revised and expanded.

HARNWELL, GAYLORD PROBASCO, AND J. J. LIVINGOOD

Experimental atomic physics. New York: McGraw-Hill Book Company, Inc., 1933. 472 p. illus. 23 cm. (International series in physics; F. K. Richtmyer, consulting editor) \$5.00. 618a

Contents: Preface. The velocity of propagation and the pressure of radiation. Black-body radiation. The atomicity of matter and electricity. The ratio of charge to mass of electrons and ions. The wave aspect of matter. Thermionic and photoelectric effects. Line spectra. Atomic energy states. X-rays. Radioactivity. Appendixes: Instruments for measuring small currents and potential differences. Vacuum technique. Table of fundamental physical constants. Periodic table. Author index. Subject index.

Note: This textbook is based upon a course given for several years for seniors and graduate students at Princeton University, the purpose of both course and book being to present the subject from a predominantly experimental point of view. The authors have incorporated into the text certain of the simpler and more fundamental experiments suitable for performance by students. Familiarity with the subjects of mechanics and electricity is essential to an understanding of this text, and a working knowledge of calculus and elementary differential equations is also presupposed. References to further reading are given in footnotes.

HOAG, J. BARTON

Electron and nuclear physics. Second edition of Electron physics. New York: D. Van Nostrand Company, Inc., 1938. 502 p. illus. 22 cm. \$4.00. 619

Contents: The charge of the electron. The mass of the electron. The wave-length of the electron. Photoelectric emission. Thermionic emission. High-vacuum, low-voltage tubes. The outer parts of the atom. The passage of electricity through gases. X-rays. Positive rays and isotopes. Spontaneous disintegration. Alpha, beta and gamma rays. The acceleration of ions. Artificial transmutation. Cosmic rays. Vacuum technique. Small current technique. The detection of particles. Notes on high voltage technique. Problems. Tables. Index.

Note: This college textbook provides a survey of the fundamentals of its subject. Its special feature is the directions for performing an extensive series of experiments in atomic physics. Many of these experiments, as originally performed, required considerable manipulative skill and elaborate apparatus. In this book they have been simplified to comply more closely with the limitations of the average laboratory and the technique of the average college student.

MILLIKAN, ROBERT ANDREWS

Electrons (+ and -), protons, photons, neutrons, and cosmic rays. Chicago: The University of Chicago Press, 1935. 492 p. illus. 19 cm. (The University of Chicago science series) \$3.50. 620

Contents: Early views of electricity. Extension of the electrolytic laws to conduction in gases. Early attempts at direct determination of e . General proof of atomic nature of electricity. Exact evaluation of e . Mechanism of ionization of gases by X-rays and radium rays. Brownian movements in gases. Is the electron itself divisible? Structure of the atom. Nature of radiant energy. Waves and particles. Spinning electron. Discovery and origin of the cosmic rays. Direct measurement of the energy of cosmic rays. Neutron and the transmutation of the elements. Nature of the cosmic ray.

Note: In many respects this volume may be considered a revision or third edition of the author's *The electron* which first appeared in 1917 and dealt with the isolation, measurement, and properties of the electron. There are now six additional chapters which present the results of Millikan's researches up to 1935. In order to meet the needs of the physicist and the reader with less technical training, all mathematical proofs have been omitted from the text and placed in appendixes.

AN OUTLINE OF ATOMIC PHYSICS, by members of the physics staff of the University of Pittsburgh: Oswald H. Blackwood, Elmer Hutchisson, Thomas H. Osgood [and others]. Second edition. New York: John Wiley & Sons, Inc., 1937. 414 p. illus. 23 cm. \$3.75. 621

Contents: By way of introduction. The atomic nature of matter. The atomic nature of electricity. The corpuscular nature of radiant energy. Spectroscopy. The planetary model of the atom. X-rays. Waves and corpuscles. Atomic spectra. The periodic system. Molecular structure. Radioactivity and the atomic nucleus. Nuclear structure. The theory of relativity. Astrophysics. New light on old problems. Appendixes: Electrical units. Important physical constants and conversion factors. Angular distribution of scattered alpha particles. Derivation of the Lorentz transformation equations. Index.

Note: A comprehensive survey of the field for undergraduate students who have completed the usual year's course in introductory physics. The purpose of the book is to give a well-rounded training in the structure of the atom, the nature of radiation, and the extent of the universe. The authors lean toward a philosophical and physical basis in their argument, rather than the mathematical, but do not hesitate to include simple mathematics where its use is an aid to a more complete understanding of the subject under discussion. The second edition includes a new chapter on neutrons, positrons, and nuclei, containing a discussion of cosmic radiation. A bibliography is appended to each chapter.

PENNSYLVANIA UNIVERSITY. BICENTENNIAL CONFERENCE

Nuclear physics. By Enrico Fermi [and others]. Philadelphia: University of Pennsylvania Press, 1941. 68 p. 23 cm. (University of Pennsylvania. Bicentennial Conference) Paper, \$0.75. 622

Contents: Reactions produced by neutrons in heavy elements, by Enrico Fermi. Proton-proton scattering, by Gregory Breit. The moments of the light nuclei, by I. I. Rabi. Nuclear masses and binding energies, by Eugene P. Wigner. The mesotron and the quantum theory of fields, by J. Robert Oppenheimer. Nuclear physics and inter-atomic arrangement, by John H. Van Vleck.

Note: A collection of six short papers on certain problems encountered in nuclear physics research. There are bibliographies included in the second and sixth papers.

POLLARD, ERNEST CHARLES, AND WILLIAM L. DAVIDSON

Applied nuclear physics. New York: John Wiley & Sons, Inc., 1942. 249 p. illus. 23 cm. \$3.00. 623

Contents: Alchemy, atoms and radioactivity. Properties of nuclear radiations. The detection of nuclear particles. Methods of accelerating atomic particles. Transmutation. Radioactivity. Technique in artificial radioactivity. Artificial radioactivity in practice. Stable isotopes and their application. Nuclear fission. Nuclear theory. Appendixes. Index.

Note: An orientation book, using little mathematics, covering the fundamentals of nuclear physics. The approach is mainly technical, with attention to the historical background. It is designed primarily for biologists, chemists, physicians, and engi-

neers. The book gives methods and results of applying the principles to practical problems, and references to more advanced treatments and original sources are provided at the end of each chapter.

SEMAT, HENRY

Introduction to atomic physics. New York: Farrar & Rinehart, Inc., 1939. 360 p. illus. 22 cm. \$3.75. 624

Contents: Introduction. Elementary charged particles. Electromagnetic radiation. Waves and particles. The hydrogen atom. Atomic spectra and electron distribution. The nucleus. Appendix. Index.

Note: A college textbook designed for science students who have had a general college physics course and, in addition, a course in calculus. The choice of topics and their arrangement give a connected presentation of the experimental basis of our present ideas concerning the structure of the atom and the nature of its constituent particles. Numerous problems are included.

STRANATHAN, JAMES DOCKING

The "particles" of modern physics. Philadelphia: The Blakiston Company, 1942. 571 p. illus. 23 cm. \$4.00. 625

Contents (abridged): Gaseous ions and their behavior. The electron. The electrical discharge. Cathode rays—the ratio e/m for electrons. Positive rays—isotopes. Photons. X-rays. Alpha, beta, and gamma rays. The positron. The neutron. Atomic nuclei. Cosmic rays. The mesotron. Particles?—or waves? Author and subject index.

Note: This text serves as a basis for a survey course in the field of modern physics. It is built around the "particles" of modern physics, the electron, positive rays, photons, positrons, neutrons, mesotrons, X-rays, alpha, beta and gamma rays, and cosmic rays. It is intended to convey to the student early in his career the essential fundamental concepts. The experimental evidence upon which each concept is founded has been stressed. Bibliographical footnotes provide citations to both classic and recent sources.

Quantum Mechanics

ABRO, A. D'

The decline of mechanism (in modern physics). New York: D. Van Nostrand Company, Inc., 1939. 982 p. illus. 23 cm. \$10.00. 626

Contents: Part I, General considerations: The historical background of the scientific method. Assumption in science. The significance of theoretical physics. Two kinds of simplicity. Successive theories of mathematical physics and progressive approximations. Conceptual changes in physical theories. Causality. Conservation. Mechanistic theories. Field theories. Phenomenological theories. A retrospect on the different kinds of theories. Psychological differences among physicists. Part II, Physical theories of the classical period: Mathematical preliminaries. Differential equations. The controversies on the nature of mathematics. Analytical mechanics. Minimal principles and principles of action. The undulatory theory of light. Transformations. Thermodynamics. The classical kinetic theory of gases. Part III, The quantum theory: The relativity and the quantum theories. Planck's original quantum theory. Generalities on the atom. Bohr's atom. Applications of Bohr's theory. De Broglie's wave-mechanics. Heisenberg's uncertainty principle. Vibrations. Schrödinger's wave mechanics of the atom. Schrödinger's theory of radiation. Bohr's interpretation of Schrödinger's theory. The helium atom. Matrices. The matrix method. Dirac's theory of the electron. The new statistics. Quantum mechanics and causality. Index.

Note: A comprehensive account of the historical growth and present state of the new ideas and theories of subatomic physics. The mathematical side of the subject is covered at some length, but the author has arranged the book so that readers without mathematical education can omit certain chapters but still follow the argument.

DUSHMAN, SAUL

The elements of quantum mechanics. New York: John Wiley & Sons, Inc., 1938. 452 p. illus. 23 cm. \$5.00. 627

Contents: Quantum phenomena. The Schroedinger equation in one dimension. Problems of potential barriers. Classical theory of atomic dynamics. The linear harmonic oscillator. The rigid rotator. The hydrogen atom. Van der Waals' forces. Perturbation theory. The helium atom—perturbation method. The helium atom—variational method. The hydrogen molecule. Vibrational and rotational states of the hydrogen molecule. Valence bonds; activation and resonance energy. Quantum mechanics theory of radiation. Appendices: Treatises and review publications on quantum mechanics. Values of physical constants. Special tables of mathematical formulae. Some fundamental theorems and differential equations. Index.

Note: Suitable for use by graduate students in either physics or chemistry, this book strikes a balance between theory and experimental verifications of theory. It is intended as an introduction to the mathematical technique and physical interpretation of the subject. The step-by-step development of significant equations is detailed. Assuming that the reader is already familiar with elementary differential and integral calculus, the author discusses more advanced topics, such as Fourier's series, spherical harmonics, and the theory of transformation of coordinates in connection with their applications to the different problems of wave mechanics. Stress is laid on the relation between the concepts of quantum mechanics and their analogues in classical mechanics.

KEMBLE, EDWIN CRAWFORD

The fundamental principles of quantum mechanics, with elementary applications. New York: McGraw-Hill Book Company, Inc., 1937. 611 p. illus. 23 cm. (International series in physics. F. K. Richtmyer, consulting editor) \$6.00. 628

Contents: Introduction to dualistic theory of matter; development of Schrödinger's wave equation. Wave packets and the relation between classical mechanics and wave mechanics. One-dimensional energy-level problems. The mathematical theory of complete systems of orthogonal functions. The discrete energy spectrum of the two-particle central-field problem. The continuous spectrum and the basic properties of solutions of the many-particle problem. Dynamical variables and operators. Commutation rules and related matters. The measurement of dynamical variables. Matrix theory. Theory of perturbations which do not involve the time. Quantum statistical mechanics and the Einstein transition probabilities. Introduction to the problem of atomic structure: electron spin. The theory of the structure of many-electron atoms. Appendices. Indices.

Note: A comprehensive, scholarly treatment of the basic principles of non-relativistic quantum mechanics and of their mathematical and physical background. This book is elementary in form and approach, but advanced in its critical temper.

PAULING, LINUS CARL, AND E. BRIGHT WILSON, JR.

Introduction to quantum mechanics, with applications to chemistry. New York: McGraw-Hill Book Company, Inc., 1935. 468 p. illus. 23 cm. \$5.00. 629

Contents: Survey of classical mechanics. The old quantum theory. The Schrödinger wave equation with the harmonic oscillator as an example. The wave equation for a system of point particles in three dimensions. The hydrogen atom. Perturbation theory. The variation method and other approximate methods. The spinning electron and the Pauli exclusion principle, with a discussion of the helium atom. Many-electron atoms. The rotation and vibration of molecules. Perturbation theory involving the time, the emission and absorption of radiation, and the resonance phenomenon. The structure of simple molecules. The structure of complex molecules. Miscellaneous applications of quantum mechanics. General theory of quantum mechanics.

Note: A thorough discussion of the wave equation and its application to the solution of physical and chemical problems. The treatment of systems for which a direct comparison of results with experiment can be made is especially emphasized, and the discussion of the structure of simple molecules is particularly thorough. The mathematical development is given in greater detail than is customary in introductory books.

REICHENBACH, HANS

Philosophic foundations of quantum mechan-

ics. Berkeley, Calif.: University of California Press, 1944. 182 p. illus. 24 cm. \$3.00. 630

Contents (abridged): Part I, General considerations: Causal laws and probability laws. Probability distributions. The principle of indeterminacy. The disturbance of the object by the observation. Waves and corpuscles. Exhaustive and restrictive interpretations. Part II, Outlines of the mathematics of quantum mechanics: Expansion of a function in terms of an orthogonal set. Geometrical interpretation in the function space. Functions of several variables and the configuration space. Operators, eigen-functions, and eigen-values of physical entities. The commutation rule. Operator matrices. Mathematical theory of measurement. The rules of probability and the disturbance by the measurement. The nature of probabilities and of statistical assemblages in quantum mechanics. Part III, Interpretations: Comparison of classical and quantum mechanical statistics. The corpuscle interpretation. The impossibility of a chain structure. The wave interpretation. The rules of two-valued logic. The rules of three-valued logic. The limitation of measurability. Conclusion. Index.

Note: The author of this advanced treatment has endeavored to develop a philosophic interpretation free from metaphysics, and to develop it in such a way that quantum mechanical results about the world can be considered as real as the physical world. He interprets philosophy as the analysis of the knowledge of the physical world.

ROJANSKY, VLADIMIR BORISOVICH

Introductory quantum mechanics. New York: Prentice-Hall, Inc., 1938. 544 p. illus. 23 cm. (Prentice-Hall physics series, E. U. Condon, editor) \$7.35. 631

Contents: Mathematical preliminaries. Remarks on classical mechanics. Elements of the Schroedinger method. Approximate methods for treating the one-dimensional Schroedinger equation. One-dimensional probability currents and De Broglie waves. Constants of motion. Remarks on the momentum method. Linear operators and matrices. Elements of the Heisenberg method. Remarks on the symbolic method. Problems in three-dimensional motion; the Schroedinger method. Elements of Pauli's theory of electron spin. Elements of Dirac's theory of the electron. Appendix and index.

Note: Intended for those who desire familiarity with the simpler physical ideas and mathematical methods of quantum mechanics, especially advanced undergraduate and graduate students. Knowledge of the elements of calculus and of ordinary differential equations is necessary to understanding. Drill exercises are given.

RUARK, ARTHUR EDWARD, AND HAROLD CLAYTON UREY

Atoms, molecules and quanta. New York: McGraw-Hill Book Company, Inc., 1930. 790 p. illus. 24 cm. (International series in physics) \$7.00. 632

Contents: Introductory. The elementary constituents of atoms. The foundations of the quantum theory and their experimental justification. Review of dynamical principles. Hydrogenic atoms and their spectra. General theories of the older quantum theory. Introduction to optical spectra. X-rays and X-ray spectra. The periodic system of the elements. General theory of atomic spectra. Special topics in spectroscopy. Molecular spectra. Critical potentials of atoms and molecules. Collisions of the second kind. The wave mechanics and some of its applications. Hydrogenic atoms in wave mechanics. Matrix mechanics. General theory of quantum dynamics. Non-hydrogenic atoms and molecules in the new mechanics. Special intensities. Diffraction of electrons and atoms by crystals. Appendices. Indices.

Note: A textbook intended for advanced or graduate students of physics or chemistry covering the history and chief experimental facts of atomic physics as of 1930, including an exposition of the quantum theory, wave and matrix mechanics, and the nature of X-rays and emission spectra. The book was originally intended also for research workers as an up-to-date account of the laws of quantum theory and an account of the important experimental researches in the field, but the value of this aspect of the book has since lessened, owing to the new research work performed during the fifteen years following its publication. The greater bulk of the work is still useful for its presentation of fundamental theory.

Physics of Gases

KENNARD, EARLE HESSE

Kinetic theory of gases, with an introduction to statistical mechanics. New York: McGraw-Hill Book Company, Inc., 1938. 483 p. illus. 23 cm. (International series in physics, F. K. Richtmyer, consulting editor) \$5.00. 633

Contents: Elements of the kinetic theory of gases. Distribution law for molecular velocities. General motion and spatial distribution of the molecules. Viscosity, thermal conduction, diffusion. The equation of state. Energy, entropy, and specific heats. Fluctuations. Properties of gases at low densities. Statistical mechanics. Wave mechanics of gases. Electric and magnetic properties of gases. Some integrals. Important constants. Index.

Note: An introduction to the kinetic theory of gases. Includes an account of the wave-mechanical theory and especially of the degenerate Fermi-Dirac case. A concise chapter of general statistical mechanics is included, and a number of carefully worded theorems have been inserted in the guise of problems.

LOEB, LEONARD BENEDICT

The kinetic theory of gases; being a text and reference book whose purpose is to combine the classical deductions with recent experimental advances in a convenient form for student and investigator. Second edition. New York: McGraw-Hill Book Company, Inc., 1934. 687 p. illus. 23 cm. \$6.00. 634

Contents: Historical. The mechanical picture of a perfect gas. The mean free path—Clausius' deductions. The distribution of molecular velocities. The more accurate equation of state, or Van der Waal's equation. Transfer of momentum. Transfer of energy. Transfer of mass through a gas. The kinetic theory of the coefficient of viscosity, heat conduction, and diffusion. The laws of rarefied gas and surface phenomena. The reality of molecular motions, Brownian movements. Specific heats and the kinetic theory. Contributions of the kinetic theory to electrical and magnetic properties of molecules. Application of the kinetic theory to the conduction of electricity in gases.

Note: The methods and results of the mechanical analysis of gaseous behavior presented in the form of a text or reference tool, for graduate students and chemistry research workers. This edition has been considerably revised to incorporate recent developments, as reflected in the chapters dealing with molecular structure, specific heats, and transfer phenomena. The chapters on Brownian movement and distribution of velocities have also been enlarged. Lists of references and recommended books are given at the end of each chapter. There are separate author and subject indexes.

LOEB, LEONARD BENEDICT

The nature of a gas. New York: John Wiley & Sons, Inc., 1931. 153 p. illus. 24 cm. (National Research Council. Committee on Electrical Investigation. Monograph no. 1) \$2.50. 635

Contents: I. Introduction: Historical. The units of electricity. The atomic nuclei. Structure of the nucleus. The extranuclear structure of the atom. Molecular structure. II. The kinetic picture of a gas: The Avogadro number. Joule's law. Equipartition of energy. Mean free path. Molecular velocities. The law of equipartition of energy. Summary. III. Ionization phenomena: General considerations. Critical potentials. Multiple ionization, or ionization and excitation. Mechanism of ionization. Probabilities of ionization and excitation. Ionization by positive ions and temperature. Conditions after excitation or ionization. Inelastic impacts of the second class. Dissociation of molecules by electron impact. Photoelectric processes leading to ionization in gases. Sources of ionization in gases. Appendices: Radii of molecules determined by various methods. Molecular velocities, mean free paths and diameters. Conversion factors and relations. General references and texts. Tables. Index of names. Subject index.

Note: This monograph is of primary interest to the student of electrical engineering and the practicing electrical engineer who need to know modern theories concerning the properties and behavior of gases insofar as they affect the employment of a gas as a dielectric.

MAYER, JOSEPH EDWARD, AND MARIA GOEPFERT MAYER

Statistical mechanics. New York: John Wiley and Sons, Inc., 1940. 495 p. illus. 23 cm. \$5.50. 636

Contents: Gas theory. Mechanical and quantum-mechanical preliminaries. Terminology and definitions. The derivation of the laws of thermodynamics. The perfect monatomic gas. The perfect gas with internal degrees of freedom. Diatomic gases. Polyatomic gases. Mixtures of gases and chemical equilibrium. General equations for systems composed of dependent particles. The crystalline solid. The Van der Waals equation. The imperfect gas. Condensation and the critical region. Electric and magnetic fields. Degenerate gases. Appendix. Index.

Note: An introductory text for graduate students in chemistry and physics, designed to present the science of statistical mechanics in a simple manner in order to make it available to scientists whose familiarity with theoretical physics is limited. The book is made suitable for reference use by the inclusion of summarized equations and a glossary of symbols.

Wave Motion

UNITED STATES. BEACH EROSION BOARD

A study of progressive oscillatory waves in water. Washington, D.C.: Government Printing Office, 1941. 39 p. illus. 23 cm. (United States. Corps of Engineers. Beach Erosion Board. Technical report no. 1) Paper, \$0.10. 636a

Contents: Introduction. Purpose. Procedure. Equipment and methods. Deep-water waves. Shallow-water waves. Discussion. Conclusions. Appendixes.

Note: A short monograph dealing with the basic characteristics of oscillatory wave motion in water, presenting an outline of the theory and a summary of the results of the first of a series of experiments adopted by the Board in 1939.

UNITED STATES. BEACH EROSION BOARD

A summary of the theory of oscillatory waves. Washington, D.C.: Government Printing Office, 1942. 43 p. illus. 23 cm. (United States. Corps of Engineers. Beach Erosion Board. Technical report no. 2) Paper, \$0.10. 636b

Contents: Introduction. Characteristics of oscillatory waves. Waves of small amplitude. Waves of finite amplitude. Wave groups and transmission of energy. Waves on a sloping bottom. Wave refraction. Damping of oscillatory waves.

Note: A brief monograph presenting the mathematical theory underlying the behavior of waves approaching a shore line through deep water, into and through shoaling water, but limited to the type of wave motion encountered in shore protection problems. There is a list of 27 references to the world literature of the subject.

Sound

COLBY, MALCOLM YOUNG

A college course in sound waves and acoustics. New York: Henry Holt and Company, 1938. 356 p. illus. 22 cm. \$2.90. 637

Contents: Preliminary survey. Vibratory motion. Transverse waves. Longitudinal waves. Longitudinal vibrations of bars. Velocity of sound. Vibrating air columns. Doppler effect. Interference, beats, and combination tones. Intensity of sound: derivation of physical relations. Intensity of sound: measurement by resonance methods. Intensity of sound: measurement by non-resonant microphones. Hearing. Architectural acoustics. Completion exercises. Index.

Note: This book is designed to give students a thorough understanding of the fundamental principles of wave motion, objective sound, and acoustics. The application of principles to actual practice is emphasized.

JONES, ARTHUR TABER

Sound, a text book. New York: D. Van Nostrand Company, Inc., 1937. 450 p. illus. 22 cm. \$3.75. 638

Contents: Preliminary ideas. The production of various noises. Vibratory motion. Simple tones and combination of tones. Musical scales. Transmission of sound. Free vibration. Forced vibration and maintained vibration. Hearing. Musical instruments. Speech and song. Technical applications. Appendix. Index.

Note: This textbook is designed primarily for college students who have had an introductory course in physics, but it may be read and understood by persons who have had no training in physics. Without using mathematics more difficult than simple algebra, it covers the principles of acoustics and their applications in everyday life, including speech and music, sound reproducing devices, ranging methods for locating ships and aircraft, and other topics of current interest.

MILLER, DAYTON CLARENCE

Anecdotal history of the science of sound to the beginning of the 20th century. With illustrations. New York: The Macmillan Company, 1935. 114 p. illus. 22 cm. \$2.75. 639

Contents: Greek and Roman science. Harmonics and acoustics. Sound in the 16th and 17th centuries: Experimentation. Music. Sound in the 18th century: the era of the calculus. The science of sound. Sound at the end of the 19th century: the theory of sound. Sound at the beginning of the 20th century: The Acoustical Society of America. Bibliography. Index.

Note: An informal record of the principal events in the progress of the science of sound, based on a survey of the literature of the field, told in non-technical language for the interested layman. The personalities involved in the development of theory are given brief biographical mention in relation to their contributions. There are many photographs and drawings and a short bibliography of 63 references.

MILLER, DAYTON CLARENCE

Sound waves, their shape and speed; a description of the phonodeik and its applications and a report on a series of investigations made at Sandy Hook Proving Ground. New York: The Macmillan Company, 1937. 164 p. illus. 22 cm. \$2.75. 639a

Contents: Part I, The phonodeik; sound waves and their shapes: Sound and tone quality. The phonodeik. The shapes of sound waves. Electric-spark photography of sound waves. Part II, The Sandy Hook experiments; pressure, wave form and velocity of sounds from large guns: Research at Sandy Hook Proving Ground. Pressure effects in the air near large guns in action. Wave form of the sounds from large guns. The propagation of the sound wave from the muzzle of the large gun. The normal velocity of sound in free air. Bibliography. Index.

Note: This work is divided into two parts, the first dealing with the phonodeik, an instrument for photographing sound, the second with experiments on the pressure developed in the sound waves produced by the discharge of large guns. The reports stem from an inquiry which the author originally began in 1900 to find out whether the tone of a gold flute differed from that of a silver or wood flute and if so why.

MORSE, PHILIP MCCORD

Vibration and sound. New York: McGraw-Hill Book Company, Inc., 1936. 351 p. illus. 23 cm. (International series in physics, F. K. Richtmyer, consulting editor) \$4.00. 640

Contents: Introductory. The simple oscillator. The flexible string. The vibration of bars. Membranes and plates. Plane waves of sound. The radiation and scattering of sound. Standing waves of sound.

Note: A textbook on the theory of vibrations and sound for students of physics and communications engineering. The book gives first, a general introduction to the theory of vibration and sound, and second, a series of examples in the method of theoretical physics—the way a theoretical physicist attacks a problem and how he finds its solution.

STEWART, GEORGE WALTER, AND ROBERT BRUCE LINDSAY

Acoustics; a text on theory and applications. New York: D. Van Nostrand Company, Inc., 1930. 360 p. illus. 24 cm. \$5.00. 641

Contents: Some simple properties of acoustic waves—fundamental theory. Combination of acoustic elements. Transmission—change in area of wave front. Transmission—changes in media. Transmission through a conduit with an attached branch or an open end. Distributed acoustic impedance. Horn theory. Acoustic coupling. The filtration of sound. Acoustic measurements and instruments. Physiological acoustics. Subaqueous sound ranging and signalling. Architectural acoustics. Atmospheric acoustics. Appendices.

Note: This college textbook covers, from a mathematical standpoint, the essential principles of acoustics and their use in solving problems. It explains the applications of these principles to modern developments in sound equipment, including, particularly, various developments in radio engineering.

STEWART, GEORGE WALTER

Introductory acoustics. New York: D. Van Nostrand Company, Inc., 1933. 200 p. illus. 22 cm. \$2.75. 641a

Contents: Sound waves. Reflection and absorption in auditoriums. Acoustic reflectors. Refraction and diffraction. Phase change at reflection. Resonance. Musical sounds. The nature of vowel sounds. Certain physical factors in speech. Audibility. Binaural effects. Acoustic transmission. Selective transmission. Musical scales. Musical instruments, the voice and other sound sources. Index.

Note: This college textbook is an elementary treatise that undertakes to consider the most common phenomena in acoustics. The content assumes no previous preparation in physics and utilizes very few mathematical expressions. It is especially intended for students specializing in music, speech, and psychology.

WATSON, FLOYD ROWE

Sound; an elementary textbook on the science of sound and the phenomena of hearing. New York: John Wiley & Sons, Inc., 1935. 219 p. illus. 23 cm. \$2.50. 642

Contents: Preface. Bibliography. A brief survey of acoustic phenomena. Simple harmonic motion. Wave motion. Stationary waves—transverse and compressional. Examples of stationary waves. Reflection and refraction of waves. Interference of waves. Lissajous' curves. The Doppler effect. Diffraction of sound. Organ pipes. Vibrating strings. Vibrations of bars, plates and bells. Musical scales. Quality of sound. Musical instruments. Speech and hearing. Acoustics of rooms. Velocity of waves. Energy of sound. Absorption and transmission of sound. Resonance and resonators. Experiments in sound. Index.

Note: In this introductory book only sufficient mathematics is introduced to permit precise statements of quantitative relationships. Accordingly, the book can be used by those who have only a slight knowledge of physics or mathematics.

Thermodynamics and Heat

AMERICAN INSTITUTE OF PHYSICS

Temperature, its measurement and control in science and industry; papers presented at a symposium held in New York City, November, 1939, under the auspices of the American Institute of Physics, with the cooperation of National Bureau of Standards, National Research Council, and officers and committees of American Ceramic Society, American Chemical Society, American Institute of Mining and Metallurgical

Engineers [and others]. New York: Reinhold Publishing Corporation, 1941. 1362 p. illus. 23 cm. \$11.00. 643

Contents: Temperature and temperature scales. Precision thermometry. Education. Natural sciences. Temperature in biology. Temperature and its regulation in man. Automatic temperature regulation and recording. Special applications and methods. General engineering. Metals and ceramic industries. Oil industries. Optical and radiation pyrometry. Thermometric metals and alloys. Glossary. Index.

Note: This symposium, dealing with the measurement and control of temperature in numerous branches of science and engineering, was organized for the purpose of bringing together the recent developments and fundamental principles in the field. The 126 papers prepared by 145 authorities are of value to chemists, biologists, geologists, engineers, and physicians. Each paper is complete in itself and includes a bibliography. There is a four-page glossary of technical terms used in the papers and separate author and subject indexes.

AUSTIN, JAMES BLISS

The flow of heat in metals. A series of five educational lectures on the flow of heat in metals presented to members of the American Society for Metals at the twenty-third National Metal Congress and Exposition, Philadelphia, October 20-25, 1941. Cleveland: American Society for Metals, 1942. 144 p. illus. 23 cm. \$2.50. 644

Contents: Nature of heat and of metallic conduction. Factors influencing the thermal conductivity of metals. Basic laws of heat conduction and heat flow in the steady state. Heat flow in the unsteady state.

Note: In this series of lectures the author has reviewed general principles rather than isolated measurements relating to heat flow in metals. No attempt has been made to discuss critically published data on the thermal conductivity of metals. An appendix contains tables, and dimension and conversion factors, for use in heat glow calculations. Brief bibliographies follow each chapter, and there is an index.

BRIDGMAN, PERCY WILLIAMS

The nature of thermodynamics. Cambridge, Mass.: Harvard University Press, 1941. 229 p. illus. 21 cm. \$3.50. 645

Contents: Introduction. The first law of thermodynamics and the concept of energy. The second law of thermodynamics. Miscellaneous considerations. Retrospect and prospect. Index.

Note: The author's analysis of thermodynamics is "operational," in that it examines what physicists actually do when they apply the principles of thermodynamics to concrete situations. It centers about a discussion of the two laws of thermodynamics and the corresponding fundamental concepts. Analysis of the energy concept discloses that the original conditions under which the first law was formulated do not have their ostensible complete generality. The second law is concerned with entropy, a property of a system which measures the amount of heat energy that may be extracted from it. The present explanation of this law is based on kinetic theory and statistical mechanics, but the author finds a difference between the spirit of thermodynamics and that of kinetic theory and statistical mechanics. He also examines the modern tendency in physics toward an epistemology based on statistics, and various miscellaneous topics such as thermodynamics and biological phenomena. The book, which is entirely non-mathematical, demands an acquaintance with thermodynamics such as might be expected of any college student of physics, engineering, or chemistry, but the argument can be understood by anyone interested in the critical analysis of the fundamental concepts of science.

BROWN, AUBREY INGERSON, AND SALVATORE M. MARCO

Introduction to heat transfer. New York: McGraw-Hill Book Company, Inc., 1942. 232 p. illus. 23 cm. \$2.50. 646

Contents: Modes of heat transfer. Heat transfer by conduction. Equations for the calculation of heat transfer by conduction (steady state). Radiation. Introduction to the study of convection. Forced convection. Free or natural convection. Heat transfer to boiling liquids. Condensing vapors. Over-all transfer of heat. Application of the principles of heat transfer to design problems. Variable heat flow.

Note: This textbook presents the essential fundamentals of heat transmission. Emphasis is placed on acquiring a clear conception of the manner in which heat is transmitted and on development of the fundamental mathematical expressions which apply to the calculations of heat transfer through clean surfaces. A large number of detailed numerical examples is a feature of the book.

CORK, JAMES MURLE

Heat. Second edition. New York: John Wiley & Sons, Inc., 1942. 294 p. illus. 23 cm. \$3.50. 647

Contents: Temperature and its measurement. Specific heats. Thermal expansion. Transfer of heat: conduction and convection. Radiation. First law of thermodynamics. The state of matter. Thermodynamics: elementary. The production of high and low temperatures. Appendix. Index.

Note: This book serves as a complete, yet concise introduction to heat for students in engineering, chemistry, physics, astronomy, or general science who have had the beginning college course in general physics. It deals specifically with the physical phenomena induced in matter through the application or withdrawal of heat. In this edition the changes include more descriptive material, and more elaboration of some of the experimental outlines and problems. The revision takes account of such topics as the International scale of temperatures, the thermal properties of matter at temperatures of near absolute zero, the behavior of helium at extremely low temperatures, and the relationship between radioactivity and heat with reference to such topics as the fission of uranium. An authenticated account of the historical development of early thermometric scales is included.

CROFT, HUBER OGILVIE

Thermodynamics, fluid flow and heat transmission. New York: McGraw-Hill Book Company, Inc., 1938. 312 p. illus. 23 cm. \$3.50. 648

Contents: Definitions and units. Dimensional analysis and the principle of similitude. Thermodynamics of perfect gases. General differential equations applying to thermodynamics. The thermodynamics of vapors and equations of state. Analysis based upon the second law of thermodynamics. The flow of fluids. Measurement of fluid flow. Heat transmission. Engineering characteristics of solid particles in fluid streams. The compression of fluids.

Note: Includes material of practical value to engineers in the fields of dimensional analysis, thermodynamics, flow and measurement of fluids, heat transmission, and the compression of fluids. The book brings together the important equations and material which may be applied in all of the above fields, with numerous references for the convenience of engineers and teachers.

EPSTEIN, PAUL SOPHUS

Textbook of thermodynamics. New York: John Wiley & Sons, Inc., 1937. 406 p. illus. 23 cm. \$5.00. 649

Contents: The thermal properties of matter. The first law of thermodynamics. The first law of thermodynamics and the caloric properties of matter. The second law of thermodynamics. The trend of thermodynamical processes towards equilibrium. General conditions of equilibrium of thermodynamical systems. Phases of a chemically pure substance. Mixtures of perfect gases. Dilute solutions. Equilibrium of binary systems. Fugacities and activities. The capillary layer. Nernst's postulate or the third law of thermodynamics. Bearing of Nernst's postulate on the absolute entropy of gases. Critical analysis of Nernst's postulate. Degenerate perfect gases. Electron and ion clouds. Theory of specific heats. Equilibrium involving radiation. Magnetic and electric phenomena. The direction of thermodynamical processes. Limitations of thermodynamics. Appendices. Index.

Note: A detailed and careful discussion, for physicists, of the applications of thermodynamics to numerous experimental facts. Particular attention is paid to those facts which involve quantum phenomena. General laws are illustrated by the discussion of chemical applications of the laws of thermodynamics.

FERMI, ENRICO

Thermodynamics. New York: Prentice-Hall, Inc., 1937. 160 p. illus. 23 cm. (Prentice-Hall physics series; E. U. Condon, editor) \$3.00. 650

Contents: Thermodynamic systems. The first law of thermodynamics. The second law of thermodynamics. Thermodynamic potentials. Gaseous reactions. The thermodynamics of dilute solutions. The entropy constant. Index.

Note: An elementary treatise based on a famous series of lectures by the author, who is a winner of the Nobel prize in physics. It is concerned with pure thermodynamics with a few references to statistical interpretation. The reader should be familiar with fundamental facts of thermometry and calorimetry.

GORANSON, ROY WALDEMAR

Thermodynamic relations in multi-component systems. Washington, D.C.: Carnegie Institution of Washington, 1930. 329 p. 23 cm. (Carnegie Institution of Washington. Publication no. 408) Paper, \$6.00; cloth, \$7.00. 651

Contents: Fundamental ideas. Simple homogeneous systems. Homogeneous binary systems of variable mass and composition. Homogeneous n -component systems. Strain. Stress. Thermodynamic treatment of systems homogeneously strained. The stress-strain relations for isothermal changes of state. Systems not in equilibrium. Irreversible processes. Introduction to the tables of thermodynamic relations.

Note: A mathematical outline of the fundamental physical hypotheses involved in the theoretical foundation of thermodynamics essential in evaluating the 20,500 tabulated derivatives, together with functional interrelations necessary for obtaining derivatives not tabulated. As many as possible of the thermodynamic relations existing between the quantities of homogeneous multi-component systems in terms of quantities that can be obtained from experiment are given.

JAKOB, MAX, AND GEORGE A. HAWKINS

Elements of heat transfer and insulation. New York: John Wiley & Sons, Inc., 1942. 169 p. illus. 23 cm. \$2.50. 652

Contents: Introduction. Thermal conductivity. Conduction of heat in the steady state. Conduction of heat in the unsteady state. Steady state heat conduction in bodies with heat sources. Introduction to the dimensional analysis of convection. Heat transfer by free convection. Heat transfer by forced convection. Heat transfer by the combined effect of conduction and convection. Heat transfer in condensing and boiling. Heat transfer by radiation. Heat transfer by the combined effect of conduction, convection, and radiation. Experimental determination of conductivities and emissivities. Heat transfer in temperature measurements. Heat transfer and pressure drop. Index.

Note: This work is confined to the basic principles of heat transfer and insulation, and to their application to simple problems. Derivations are given, followed by detailed numerical examples. The use of consistent units is stressed, and the use of units is explained thoroughly. The book is written at the level of the college undergraduate.

KEENAN, JOSEPH HENRY

Thermodynamics. New York: John Wiley & Sons, Inc., 1941. 499 p. illus. 23 cm. \$4.50. 653

Contents: Definitions. The first law of thermodynamics. The pure substance. The flow of fluids. Properties of a pure substance. The second law of thermodynamics. Reversibility. Corollaries of the second law. The perfect gas. The reciprocating steam engine. The steam turbine. Heat-engine cycles. Mixtures of gases and vapors. Introduction to the thermodynamics of chemistry. Refrigeration. Heat and power from combustion. Availability. The flow of fluids in ducts. Some thermodynamic relations for the pure substance. The relation between pressure, volume and temperature and its development. Thermodynamic temperature and the International scale of temperature. Binary mixtures. The criteria of equilibrium. Equilibrium of a pure substance. Super-saturated vapor and superheated liquids. Chemical equilibrium and the chemical potential. Index.

Note: A textbook for undergraduate courses in engineering. The first and second laws of thermodynamics are discussed, with their application to practical engineering. A résumé is given of

recent work on the more involved phases of thermodynamics which border on other fields of chemistry and physics, particularly those involving chemical reactions.

MCADAMS, WILLIAM HENRY

Heat transmission. Sponsored by the Committee on Heat Transmission, National Research Council. Second edition, revised and enlarged. New York: McGraw-Hill Book Company, Inc., 1942. 459 p. illus. 23 cm. \$4.50. 654

Contents: Index to principal relations for convection. Introduction. Conduction. Heating and cooling of solids. Radiant heat transmission. Dimensional analysis. Flow of fluids. Introduction to heat transfer between fluids and solids. Heating and cooling fluids inside tubes. Heating and cooling fluids outside tubes. Condensing vapors. Heat transfer to boiling liquids. Applications of design. Bibliography. Author and subject indexes.

Note: Designed as a text for students and a reference for practicing engineers, this book has a threefold purpose: to analyze the data on heat made available by the research of the last decade in the light of the basic mechanisms by which heat is transferred; to present the recommended relations in the form of equations or graphs; and to illustrate the method of attack on new problems. The emphasis is on fundamentals rather than on details of individual problems and special cases. The second edition contains new material on heating and cooling, including streamline and turbulent flow in ducts, convection from planes, and other correlated data, in addition to new graphical methods and alignment charts.

MACDOUGALL, FRANK HENRY

Thermodynamics and chemistry. Third edition. New York: John Wiley & Sons, Inc., 1939. 491 p. illus. 23 cm. \$5.00. 655

Contents: Temperature. Actual gases. Mathematical apparatus. Heat, work and the first law of thermodynamics. Applications of the first law. The second law of thermodynamics. Deductions from the first and second laws. Thermodynamic functions and thermodynamic equilibrium. Fusion, evaporation and sublimation. The phase rule. Applications of the phase rule. Chemical equilibrium in ideal systems. Fugacity, activity and activity coefficient. Strong electrolytes and the theory of Debye and Hückel. Special cases of ionic equilibrium. Gravitational, centrifugal and electric fields. Surface tension. Electromotive force and free energy of cell reactions. Third law of thermodynamics. Radiation. Statistical mechanics. Index.

Note: Designed for advanced students of chemistry, this book aims to give a logical exposition of the subject, with examples of the application of the principles to the work of the students. The chapter on mathematical apparatus is new in this edition. Other additions and revisions include: a detailed account of fugacity; a discussion of strong electrolytes; the addition or revision of several topics in the chapter on gravitational, centrifugal, and electric fields, and surface tension; a discussion of electromotive force and the free energy of cell reactions; and a treatment of recent methods of calculating thermodynamic functions with the aid of quantum statistical mechanics.

SOSMAN, ROBERT BROWNING

The pyrometry of solids and surfaces. A series of three educational lectures presented to members of the American Society for Metals during the twentieth National Metal Congress and Exposition, Detroit, Michigan, October 17 to 21, 1938. Cleveland: The American Society for Metals, 1940. 98 p. illus. 23 cm. \$2.00. 656

Contents: Scientific foundations of the pyrometry of solids. Pyrometry of metals by means of the thermocouples. Radiational pyrometry of solids and surfaces.

Note: An outline of the theory and technique of measuring the temperatures of objects having a minimum temperature of 500° C. or 932° F. While various types of pyrometers, such as photoelectric, optical, color, soaking-pit, and photonic, are briefly described, the author is more concerned with providing an understanding of how pyrometers should be applied, and the principles on which they operate. There is a brief list of references and an index.

STEINER, LUKE EBY

Introduction to chemical thermodynamics. New York: McGraw-Hill Book Company, Inc., 1941. 516 p. illus. 23 cm. (International chemical series; L. P. Hammett, consulting editor) \$4.00. 657

Contents: Introduction. The first law of thermodynamics. Heat capacity. Application of the first law to gases. Heat of reaction. Heat of solution. Partial molal heats. Equilibrium and the second law of thermodynamics. Entropy and the second law. Applications of entropy. Some entropy functions. Equilibrium in simple systems. Free energy. Free energy change in chemical reactions. Free energy change and the equilibrium constant. Ideal solutions. The third law of thermodynamics. Some applications of thermodynamics. General equilibrium conditions. Partial molal quantities. Nonideal solutions. Reactions in galvanic cells. Solutions of electrolytes.

Note: Acquaints the student with the fundamental theory of thermodynamics and of the relations between the thermodynamic functions; preparing him to utilize the various tables of thermodynamic data and the data found in the current chemical literature; and giving him a background for more extended work in thermodynamics. Deals with the basic laws and concepts of thermodynamics and with their application both to relatively simple chemical systems and to nonideal systems where the concepts of partial molal quantities and activities are useful.

WEBER, ROBERT L.

Temperature measurement and control. Philadelphia: The Blakiston Company, 1941. 430 p. illus. 22 cm. \$4.00. 658

Contents (abridged): Part I. Principles used in temperature measurements: Expansion thermometry. Heat transfer. Thermoelectricity. Thermoelectric temperature measurements. Radiation. Radiation pyrometry. Resistance thermometry. Recording pyrometry. Automatic temperature control. Calorimetry. Thermal analysis. Elementary thermodynamics. Special methods of temperature measurement. Extreme temperatures. International temperature scale. Part II. Experiments. Appendix. Index.

Note: This book is designed for courses offered to students who are not specializing in thermodynamics but who need, nevertheless, an understanding of the principles and methods of temperature measurements. It is useful also as a concise introduction to modern temperature-measuring and temperature-control instruments. The second part contains directions and discussions of 24 experiments. The appendix contains 24 useful tables.

WOOD, WILLIAM PLATT, AND JAMES M. CORK

Pyrometry. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 263 p. illus. 23 cm. \$3.00. 659

Contents: Temperature scales. Fluid thermometers. Thermoelectric pyrometers. Resistance thermometers. Optical pyrometers. Total radiation pyrometers. Temperature recorders and controlling devices. Transition points and thermal analysis. Refractory materials used in pyrometry.

Note: The author of this book presents a comprehensive discussion of the principles and methods of the accurate measurement of temperatures. The construction, operation, uses, and efficiencies of various types of equipment are fully described.

ZEMANSKY, MARK WALDO

Heat and thermodynamics; an intermediate textbook for students of physics, chemistry, and engineering. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 390 p. illus. 23 cm. \$4.00. 660

Contents: Temperature. Thermodynamic systems. Work. The first law of thermodynamics. Heat. Ideal gases. The second law of thermodynamics. Reversibility and irreversibility. The Carnot cycle and the Kelvin temperature scale. Entropy. Properties of pure substances. The steam engine and the refrigerator. Applications of thermodynamics to special systems. Change of phase. Mixture of inert ideal gases. Chemical thermodynamics. Gas reactions. Heterogeneous systems. Bibliography. Index. Answers to problems.

Note: An introduction to the subject matter of heat and ther-

modynamics, presenting the fundamental concepts and laws, together with a discussion of the technique of applying these principles to specific problems. The second edition includes new treatments of convection, entropy and non-equilibrium states, second-order phase transitions, superconductivity, heat capacity of reacting gas mixtures, Le Chatelier's principles, etc., and many new problems.

Light and Optics

AMERICAN SOCIETY FOR TESTING MATERIALS

Symposium on color—its specification and use in evaluating the appearance of materials. Jointly sponsored by the American Society for Testing Materials and the Inter-society Color Council. Washington spring meeting, March 5, 1941. Philadelphia: The American Society for Testing Materials, 1941. 79 p. illus. 23 cm. Paper, \$1.00; cloth, \$1.25. 661

Contents: Introduction to color, by Deane B. Judd. Color specifications of transparent materials, by Francis Scofield. Hiding power and opacity, by Roscoe H. Sawyer. Color standards for opaque materials, by I. H. Godlove. Spectrophotometry and color evaluation, by A. E. Parker. Photoelectric tristimulus colorimetry, by Richard S. Hunter.

Note: These technical papers deal with the physical characteristics of color, its measurement by the use of photoelectric cells, standards for materials and lights, and some laws of reflection and opacity. Several bibliographies are included.

DORSEY, NOAH ERNEST

The velocity of light. Philadelphia: The American Philosophical Society, 1944. 110 p. 30 cm. (American Philosophical Society. Transactions. New series, Vol. 34, part 1) \$2.25. 662

Contents (abridged): Introduction. Object; plan. Work of Fizeau; of Foucault; of Cornu. Perrotin and Prim's report of 1908. Work of Newcomb, 1880-1882; of Michelson, 1878, 1879. Karolus and Mittelstaedt's report of 1929. Anderson's report of 1937, of 1941. Hüttel's report of 1940. Summary and conclusions. Appendixes: Experimental methods for determining the velocity of light. Motion maintained by periodic impulses. References. Index.

Note: The definitive values successively reported for the velocity of light by the several observers have decreased steadily from Cornu's 300.4 megameters per second in 1874 to Anderson's 299.776 in 1940, the only interruption in this decrease being the figure of 299.90 reported by Perrotin and Prim in 1902, which was higher than the preceding figure of 299.853 reported by Michelson in 1882. In this paper an answer is sought to the question: In how far is either this drift or its interruption of physical significance? Following remarks concerning the theory of errors, the method of least squares, averaging, and absolute physical measurements, the various determinations are considered; first, those obtained by the method of the toothed wheel, then those made with the rotating mirror, and finally the work in which Kerr cells were employed. The theories of the methods and their inherent difficulties, and vibrations maintained by periodic impulses are dealt with in the two appendixes.

HARDY, ARTHUR COBB, AND FRED H. PERRIN

The principles of optics. New York: McGraw-Hill Book Company, Inc., 1932. 632 p. illus. 23 cm. (International series in physics) \$6.00. 663

Contents: General concepts. Refraction at a spherical surface. The thin lens in air. The thick lens. The limitation of rays by apertures. Lens aberrations. The resolving power of optical instruments. Radiation. Light sources. The eye. Photography. Light-sensitive cells. Photometry. Color. Optical glass. The manufacture of optical parts. The testing of optical parts, miscellaneous optical materials. The design of optical instruments. Ophthalmic instruments. Photographic objectives. Magnifiers and oculars. Telescopes. Microscopes. Stereoscopes. Projection systems. Spectroscopic apparatus. Interference and interferometers. Polarized light and its applications.

Note: Combines the purely mathematical with the practical treatment of optics, and emphasizes the design of optical instruments. Although designed chiefly as a college textbook for students of physics, it can also be used as a reference work for specialists in the fields of illumination, optometry, motion pictures, television, optical manufacture, etc.

JACOBS, DONALD HARRY

Fundamentals of optical engineering. New York: McGraw-Hill Book Company, Inc., 1943. 487 p. illus. 21 cm. \$5.00. 664

Contents: Part I, Fundamental considerations: Properties of lenses. Lens aberrations. Theory of stops. Brightness of images in optical instruments. Properties of the eye. Optical materials. Polarized light. Low-reflectance lens coatings. Photographic objectives. Photographic shutters. Prisms used in optical instruments. Part II, Representative instruments: Telescopes. Binoculars and battery commander's telescopes. Periscopes. Gun sights. Rangefinders. Part III, Mechanical and electrical design: Optical instrument design: general considerations. Machining operations and casting methods. Bearings. Gears, clutches, couplings. Lens mountings parallel displacements. Electrical controls. Photoelectric cells. Part IV, Optical design: Ray tracing. Spherical aberration. Chromatic aberration. Coma. Design of aplanatic objectives. Eyepiece design. Optical tolerance.

Note: Offers a comprehensive introduction to the methods and principles of optical design. After outlining the fundamentals of optics, the author gives an analytical description of the functioning and design of representative military optical instruments. In the next section the basic principles of the mechanical design of optical instruments are stated. The book concludes with an introduction to optical design that will enable the student to design aplanatic objectives and eyepieces.

JENKINS, FRANCIS ARTHUR, AND HARVEY E. WHITE

Fundamentals of physical optics. New York: McGraw-Hill Book Company, Inc., 1937. 453 p. illus. 23 cm. \$5.00. 665

Contents: Preface. Light as a wave motion. The superposition of waves. Interference of two beams of light. Interference involving multiple reflections. Fraunhofer diffraction by a single opening. The double slit. The diffraction grating. Fresnel diffraction. The velocity of light. The electromagnetic character of light. Sources of light and their spectra. Absorption and scattering. Dispersion. The polarization of light. Double refraction. Interference of polarized light. Optical activity. Reflection of light. Magneto-optics and electro-optics. Index.

Note: A presentation of those principles of optics which have as their interpretation the classical wave picture of light. Intended for use in advanced undergraduate college courses.

LUCKIESH, MATTHEW

Color and colors. New York: D. Van Nostrand Company, Inc., 1938. 206 p. illus. 23 cm. \$3.00. 666

Contents: Foreword. A seeming complexity. The play's the thing. The cast and the costumes. The powers of the players. Nature contributes. Imprints of usage. A tangle of names. Deceptions of perceptions. Color commands attention. Taste and sensibility. Dual natures. The maze of appeal. The taupe age. Work-world environment. Mobility of light. Poets and painters.

Note: This book deals with the use of color in art and decoration, industry, advertising, and other phases of human activity. It discusses the various factors, psychological, esthetic, and scientific, which must be considered in color selection.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY.
COLOR MEASUREMENT LABORATORY

Handbook of colorimetry. Cambridge, Mass.: The Technology Press, Massachusetts Institute of Technology, 1936. 87 p. illus. 33 cm. \$5.00. 667

Contents (abridged): The physical basis of color specification. Sources of light. Spectrophotometry. The laws of color mixture. Determination of tristimulus values by the weighted ordinate method. Trichromatic coefficients. Graphical presentation of colorimetric data. Index.

Note: This is an attempt to facilitate measurement and specification of color by providing a basis for interpretation of data obtained from physical measurement of colored materials. A technical presentation intended mainly for the research and industrial worker.

MEYER, CHARLES FERDINAND

The diffraction of light, X-rays, and material particles; an introductory treatment. Chicago: The University of Chicago Press, 1934. 473 p. illus. 24 cm. \$5.00. 668

Contents: General and historical. Method of zones. Method of lunes and the cornu spiral. Typical diffraction patterns of the Fresnel class. Fraunhofer class of phenomena. Diffraction grating. Ramifications of diffraction theory. Diffraction of X-rays. Diffraction of material particles.

Note: This text is intended to meet the needs of both the young and the mature physicist. It will serve as an introduction to the study of diffraction for the one, and as a revised treatment of the subject for the other. Much of the material was used originally by the author in class instruction at the University of Michigan.

MONK, GEORGE SPENCER

Light; principles and experiments. New York: McGraw-Hill Book Company, Inc., 1937. 477 p. illus. 23 cm. \$5.00. 669

Contents: Preface. Fundamental concepts in geometrical optics. The laws of image formation. Combinations of optical systems. Apertures in optical systems. Photometry—the measurement of light. Aberrations in optical systems. Optical instruments. The prism and prism instruments. The nature of light. Interference of light. Interference of light—division of amplitude. Diffraction. Polarization of light. Spectra. Light and material media. The effects of magnetic and electric fields. The eye and color vision. Experiments in light. Appendices. Tables of data. Index.

Note: A text and laboratory manual for the advanced study of geometrical and classical physical optics; and the more recent extensions of physical optics which deal with the origin of spectra, the interaction of light and material media, and the effects on that interaction of external electric and magnetic fields; and the general subject of color and its measurement. Answers to problems having a numerical solution are included.

ROBERTSON, JOHN KELLOCK

Introduction to physical optics. Third edition. New York: D. Van Nostrand Company, Inc., 1941. 512 p. illus. 22 cm. (University physics series) \$4.00. 670

Contents: Why we study wave motion. Study of wave motion. Reflection and refraction in Huygen's principle. Further study of lenses. Vision through an instrument, the telescope, the microscope. Dispersion. Some facts concerning the spectrum. Interference. Thin films and plane parallel surfaces. Diffraction. Fraunhofer diffraction. Double refraction. Plane polarized light. Interference of polarized light. Rotary polarization. The electromagnetic theory of light. The origin of spectra, preliminary discussion. The quantum theory and origin of spectra. Radiation potentials. Absorption and band spectra. The dilemma. Can the existence of an ether be detected? Answers to problems.

Note: This college textbook presents the principles of the science of optics and their practical applications. Its approach is from the physical, rather than the mathematical standpoint, and its study is facilitated by the inclusion of a very large number of diagrams and photographs.

SOUTHALL, JAMES POWELL COCKE

Mirrors, prisms and lenses; a text-book of geometrical optics. Third edition. New York: The Macmillan Company, 1933. 806 p. illus. 20 cm. \$4.90. 671

Contents (abridged): Lights & shadows. Reflection of light. Refraction of light. Refraction at a plane surface. Refraction through a prism. Reflection & refraction of paraxial rays at a spherical surface. Change of curvature of the wave-front in reflection & refraction. Astigmatic lenses. Geometrical theory of the symmetrical optical instrument. Compound systems. Aperture & field of optical system. Optical system of the eye. Dispersion &

achromatism. Rays of finite slope. The microscope. Notes on physical optics & physiological optics.

Note: An introduction to the theory of modern optical instruments based on lectures given in a course on optics at Columbia University. Although the author has kept in mind the limitation of college students and used only simple mathematical processes, the volume is also intended to be of interest and use to the oculist and optometrist. In this edition two chapters have been added, one on the microscope, the other on physiological optics. Problems are given at the end of each chapter.

VALASEK, JOSEPH

Elements of optics. Second edition. New York: McGraw-Hill Book Company, Inc., 1932. 254 p. illus. 21 cm. \$2.25. 672

Contents: Light and its propagation. Photometry. Velocity of light. The wave theory of light. Reflection. Refraction. Lenses. Optical instruments. Color. Interference. Diffraction. Double refraction and polarization. Radiation. The theory of relativity. The nature of light. Appendix. Index.

Note: A textbook for a beginning college-grade course extending over three months, and presented as an appendix to a course in general physics. The student is expected to have covered at least as far as mechanics and to have a working knowledge of the fundamentals of geometry, algebra, and trigonometry. Modern theories of spectroscopy, quanta, atomic physics, and relativity are emphasized while the older and more fundamental principles are also considered. The second edition contains new material on the nature of light, new problems, and new illustrations. There are 17 useful tables of data in the appendix.

Spectroscopy

BACHER, ROBERT FOX, AND SAMUEL GOUDSMIT, COMPILERS

Atomic energy states, as derived from the analyses of optical spectra. New York: McGraw-Hill Book Company, Inc., 1932. 562 p. 23 cm. (International series in physics) \$6.00. 673

Contents: Preface. Periodic system and index. Introduction. Tables of energy states. Rydberg term tables. Additional references. Physical constants. Energy conversion factors. Index. Alphabetical index of tables.

Note: This book presents in the form of tables a compilation of data on energy states of the atom. The tables are arranged alphabetically according to elements, and under each element according to the state of ionization. For each state of ionization is given the electron configuration of the state, ionization potential and a brief description, with complete references, of the sources of the data.

BARNES, ROBERT BOWLING, AND OTHERS

Infrared spectroscopy, industrial applications and bibliography by R. Bowling Barnes, Robert C. Gore, Urner Liddel, and Van Zandt Williams. New York: Reinhold Publishing Corporation, 1944. 236 p. illus. 23 cm. \$2.25. 674

Contents: Infrared spectroscopy. Qualitative applications. Quantitative applications. Experimental equipment and technique. Origin of infrared spectra. Intensity of absorption bands. Qualitative analysis. Quantitative analytical techniques. Sampling. Typical analyses. Present status of infrared spectroscopy in industry. Library of reference curves. Empirical formula index to reference curves. Alphabetical index to reference curves. Bibliography. Subject index.

Note: This book contains 363 charts showing the spectra of the substances investigated, and an exhaustive bibliography of 2700 entries covering all previously published investigations in this field. A valuable book for scientists and technical men interested in the analysis and identification of materials.

CONDON, EDWARD UHLER, AND G. H. SHORTLEY

The theory of atomic spectra. New York: The Macmillan Company, 1935. 441 p. illus. 26 cm. \$11.50. 675

Contents: Preface. Introduction. The quantum mechanical method. Angular momentum. The theory of radiation. One-electron spectra. The central-field approximation. The Russell-Saunders case—energy levels, eigenfunctions, line strengths. (jj) coupling. Intermediate coupling. Transformations in the theory of complex spectra. Configurations containing almost closed shells—X-rays. Central fields. Configuration interaction. The Zeeman effect. The Stark effect. The nucleus in atomic spectra. Appendix—universal constants and natural atomic units. List of principal tables. Index of subjects. Index of names.

Note: A monographic survey of the knowledge published up to the summer of 1934 pertaining to the interpretation of line spectra due to atoms. The treatment is for specialists. Pertinent literature is cited in footnotes.

CONFERENCE ON SPECTROSCOPY AND ITS APPLICATIONS

Proceedings of the sixth and seventh summer conferences on spectroscopy and its applications held at the Massachusetts Institute of Technology, Cambridge, Mass. New York: John Wiley & Sons, Inc., 1939-40. 2 v. illus. 25 cm. (A publication of the Technology Press, Massachusetts Institute of Technology) Paper, 6th conf., \$3.00; 7th conf., \$2.75. 675a

Contents (abridged): Sixth conference, 1938: The spectrograph as an aid in criminal investigation, by Joseph T. Walker. Spectroscopic detection of rare earths in plants, by Bourdon F. Scribner. Spectroscopic methods of vitamin measurement, by R. L. McFarlan. Spectroscopic studies on enzyme systems, by T. R. Hogness. Characteristics of spectroscopic light sources, by R. A. Sawyer and H. B. Vincent. Seventh conference, 1939: A quarter-century of spectrochemical analysis at the National Bureau of Standards, by William T. Meggers. An alphabet of modern spectroscopy, by Charles C. Nitche. Some applications of spectroscopy to ceramic problems, by H. C. Harrison. The detection and estimation of molecules in the stars, by H. G. Howell.

Note: Sixty papers, in somewhat abbreviated form, are contained in these two volumes which represent the bulk of the papers presented at the summer conferences on spectroscopy at M.I.T. during 1938 and 1939. The published form of each paper is limited to 3,000 words and four illustrations. Discussions following the oral reading of the papers are omitted to conserve space. Each volume is available separately and contains an index.

HARRISON, GEORGE R., EDITOR

Massachusetts Institute of Technology wavelength tables with intensities in arc, spark, or discharge tube of more than 100,000 spectrum lines, most strongly emitted by the atomic elements under normal conditions of excitation between 10,000 Å. and 2,000 Å. arranged in order of decreasing wavelengths. Measured and compiled under the direction of George R. Harrison by staff members of the Spectroscopy Laboratory of the Massachusetts Institute of Technology, assisted by the Works Progress Administration. New York: John Wiley & Sons, Inc., 1939. 429 p. 28 cm. \$15.00. 676

Note: These tables are designed principally for use in spectroscopic analysis of materials and for identifying impurities. One of the most valuable features of the book is the intensity scale, which has been expanded to a range of 1-9000. Twenty-five different ratings are given in this range. More than 400 pages of tables are included in the book, each containing 255 lines. Also included in the volume are a few pages of short tables containing lists of sensitive lines of the elements, and descriptive material interpreting the tables and telling how the measurements and compilation were made.

HIBBEN, JAMES HERBERT

The Raman effect and its chemical applications. With a theoretical discussion by James H.

Hibben and Edward Teller. New York: Reinhold Publishing Corporation, 1939. 544 p. illus. 23 cm. (American Chemical Society monograph series. No. 80) \$11.00. 677

Contents (abridged): Nature of the Raman effect. Experimental methods and definitions of terms. Vibration and rotation of polyatomic molecules. General theory of infrared absorption spectra and the Raman effect. Determination of Raman frequencies in typical polyatomic molecules. Vibrational and rotational Raman spectra. Saturated aliphatic hydrocarbons. Raman spectra of aliphatic alcohols, saturated aliphatic ethers, compounds containing the carbonyl linkage, acetylenes, cyclic hydrocarbons, terpenes, sulfur and metallo-compounds, and heterocyclic compounds. Raman spectra of gases, water, hydrogen peroxide, halogen compounds, acids, silicon compounds, and ammonium compounds. Index.

Note: The general purpose of this volume is to describe how Raman spectra have contributed to the understanding of molecular constitution and behavior. The first part discusses the practice and theory of the Raman effect and outlines the experimental methods used to demonstrate its applications.

PAULING, LINUS CARL, AND SAMUEL GOUDSMIT
The structure of line spectra. New York: McGraw-Hill Book Company, Inc., 1930. 263 p. illus. 23 cm. (International series in physics) \$3.50. 678

Contents: Atomic theories and atomic models. Stationary states of the hydrogen atom. Term values for alkali-like atoms. The spinning electron and the fine structure of alkali-like spectra. The vector model for alkali-like atoms. The vector model for atoms with two valence electrons. The vector model for many-electron atoms. The intensity and polarization of spectral lines. The Pauli exclusion principles and the periodic system of the elements. X-ray spectra. Hyperfine structure and nuclear moment. Magnetic phenomena other than the Zeeman effect.

Note: A theoretical discussion of the structure of line spectra, based on the visualizable vector model of the atom combined with the results of the quantum mechanics.

SAWYER, RALPH ALANSON

Experimental spectroscopy. New York: Prentice-Hall, Inc., 1944. 323 p. illus. 23 cm. \$5.00. 679

Contents: The history of spectroscopy. Light sources. Spectroscopic apparatus—general principles. Prism spectroscopes and spectrographs—theory and construction. Prism spectroscopes and spectrographs—types and use. The diffraction grating—theory and production. The diffraction grating—mountings and use. The photographic process. The determination of wave length. The determination of spectral intensity. Apparatus and methods of infrared spectroscopy. The spectroscopy of the vacuum ultraviolet. Spectrochemical analysis. Name index and subject index.

Note: An extensive, relatively non-mathematical treatment of prism and grating spectrographs and their application in research laboratories. Much of the material on adjustment and testing of equipment and on wavelength and intensity determination is published here for the first time. A grounding in general physics and physical optics is needed for full understanding. Designed for students and workers in research laboratories.

WHITE, HARVEY ELLIOTT

Introduction to atomic spectra. New York: McGraw-Hill Book Company, Inc., 1934. 457 p. illus. 23 cm. (International series in physics) \$5.00. 680

Contents: Early historical developments in atomic spectra. Introduction to the quantum theory and the Bohr atom. Sommerfeld's elliptic orbits and space quantization. Quantum mechanics and the Schrödinger wave equation. The alkali metals and the periodic table. Excitation potentials, ionization potentials, and the spectra of ionized atoms. Penetrating and nonpenetrating orbits in the alkali metals. Doublet fine structure and the spinning electron. Hydrogen fine structure and the Dirac electron. The Zeeman effect and the Paschen-back effect. Singlet and triplet series of two-valence-electron systems. The atom model for two valence electrons. Zeeman effect, Paschen-back effect, and the Pauli exclusion principle, for two electrons. Complex spectra.

The Zeeman effect and magnetic quantum numbers in complex spectra. X-ray spectra. Isoelectronic sequences. Hyperfine structure. Series perturbations and autoionization. The Stark effect. The breadth of spectrum lines. Appendix. Index.

Note: An unusually complete, detailed and simple treatment of the theoretical rather than the experimental aspects of spectroscopy, intended for the student with a working knowledge of elementary physics and elementary calculus. The photographs of actual spectra are an outstanding feature of the text.

Luminescence

PRINGSHEIM, PETER, AND MARCEL VOGEL

Luminescence of liquids and solids and its practical applications. New York: Interscience Publishers, Inc., 1943. 201 p. illus. 23 cm. \$4.00. 681

Contents: Theoretical background: Excitation of luminescence. Efficiency and intensity. Chemical reactions. Experimental technique: Sources of primary radiation. Photometry. Spectroscopy. Phosphoroscopes and fluorometers. Fluorescence microscopy. Luminescent materials and their properties: Organic compounds. Pure inorganic compounds. Synthetic inorganic phosphors. Minerals, glasses. Fluorescence analysis: Qualitative analysis in inorganic chemistry; in organic chemistry. Purity tests. Quantitative analysis. Fluorescent indicators. Technical identification of materials. Fluorescence microscope. Tracing of hidden currents. Luminescence as light source: Luminescent paints. Fluorescent screens and lamps.

Note: Part I of this volume deals with the physics of luminescence, covering the theoretical background, experimental technique, and the properties of luminescent materials. Part II considers critically two main fields of application: fluorescence analysis for identification purposes, and luminescence of various types as light sources. A tabulated list of important fluorescent materials concludes the book.

X-rays

CLARK, GEORGE LINDENBERG

Applied X-rays. Third edition. New York: McGraw-Hill Book Company, Inc., 1940. 674 p. illus. 23 cm. (International series in physics) \$6.00. 682

Contents (abridged): General physics and applications of X-radiation: X-ray tubes. High-tension equipment. The measurement of intensity (dosage). The measurement of quality (wave length). X-ray spectra and atomic structure. Radiography. X-ray photochemistry. The X-ray analysis of the ultimate structures of materials: Crystallography and X-ray diffraction. The experimental X-ray methods of crystal analysis. The results of crystal analysis. Crystal chemistry. The silicates. Minerals, soils, ceramics, cements, alloys. Practical applications of X-ray diffraction to problems of the metallurgical industry. Polymers—synthetic and natural materials with giant molecules.

Note: A comprehensive presentation of X-rays as a practical research tool in the industrial field. Part one discusses the history, physics, and general application of X-rays. Part two deals with the actual methods used in the analysis of specific substances, and the manner in which the findings are interpreted. In order to present a changing viewpoint and to incorporate advances made since the 1932 edition, this volume has been extensively revised and rewritten. It is intended more for the industrial executive, research director, or layman, than for the expert interested in wave lengths and crystal structures. There is an index.

COMPTON, ARTHUR HOLLY, AND SAMUEL K. ALLISON

X-rays in theory and experiment. New York: D. Van Nostrand Company, Inc., 1935. 828 p. illus. 23 cm. \$7.50. 683

Contents: The discovery and properties of X-rays. The production of X-rays. Scattering of X-rays. Dispersion theory applied to X-rays. The study of crystal structure by means of X-rays. The intensity of reflection of X-rays from crystals. Phenomena

associated with the ejection of photo-electrons by X-rays. The interpretation of X-ray spectra. Some accurate methods of X-ray wave-length measurements and their results. Appendices.

Note: This is the second and revised edition of *X-rays and electrons*, by A. H. Compton. The work is recognized as a standard reference book in its field. Dr. Compton was awarded a Nobel prize in 1927 for his work in this branch of physics.

GLASSER, OTTO, EDITOR

The science of radiology. Springfield, Ill.: Charles C. Thomas, 1933. 450 p. illus. 25 cm. \$4.50. 685

Contents (abridged): Wilhelm Conrad Röntgen, by Otto Glasser. Pierre and Marie Curie, by Otto Glasser. American pioneers, by William A. Evans. Roentgen physics, by David L. Webster. Roentgen apparatus, by Ed. C. Herman. Tubes, by William D. Coolidge and E. E. Charlton. Recording media and screens, by Arthur W. Fuchs. Roentgen dosimetry, by J. Cramer Hudson. Radiologic diagnosis, by Percy Brown. Military roentgenology, by Willis F. Manges. Cinematography, by Hans A. Jarre. Roentgen therapy, by Ursus V. Kortmann. Radium physics, by G. Failla and E. H. Quimby. Radium dosimetry, by E. H. Quimby and G. Failla. Curie therapy, by H. H. Bowing and R. E. Fricke. Cutaneous therapy, by George M. MacKee. Effects upon hereditary material, by H. J. Muller. Biologic effects, by Charles Packard. Roentgen-ray protection, by L. S. Taylor. Teaching of radiology, by James T. Case. Industrial radiology, by George L. Clark. Societies and literature, by E. H. Skinner. Foundations of radiation therapy, by Matthew Luckiesh. Cosmic rays, by Arthur H. Compton. Gurwitsch rays, by William Seifritz. Index.

Note: At the time of the organization of the first American Congress of Radiology, which was held in 1933, the Committee on History and Education, with Dr. Byron H. Jackson as its head, was charged with the duty of editing a book which would contain the outstanding features developed in the science of radiology from the time of Röntgen's discovery to the period of this Congress. All branches of science which had benefitted by the discoveries were to be represented, in order to show the great accomplishments which have grown out of these discoveries. This volume represents the result of the committee's efforts, particularly those of the editor, Dr. Otto Glasser, author of a biography of Röntgen.

GLASSER, OTTO

Wilhelm Conrad Röntgen and the early history of the Roentgen rays; with a chapter, Personal reminiscences of W. C. Röntgen, by Margret Boveri. Springfield, Illinois: Charles C. Thomas, 1934. 494 p. illus. 25 cm. \$6.00. 686

Contents (abridged): The discovery of the Roentgen rays. Röntgen's preliminary communication. First impressions of the news of Röntgen's discovery. Röntgen's lecture "on a new kind of rays" before the Physical Medical Society of Würzburg on January 23, 1896. Röntgen's discovery in the daily press and in popular magazines. Röntgen's discovery and the scientific journals. The first roentgenologic journal. Röntgen's second communication "on a new kind of rays." Claims of priority in the discovery of the Roentgen rays. Fluoroscopy. Roentgen rays in medical diagnosis. Roentgen rays in warfare. Use of Roentgen rays for therapy. The development of Roentgen tubes and Roentgen apparatus in 1906. Physics. Practical use of Roentgen rays for non-medical purposes. Manufacture of Roentgen equipment. Röntgen's third communication "further observations on the properties of the X-rays." Bibliography. Index.

Note: This presentation of the actual facts of the life of Röntgen is an accurate record of his great personality. The history of the discovery of the Roentgen rays and their reception throughout the world is confined in this volume almost exclusively to the year 1906, for this year is one of the most dramatic periods in the history of science. A bibliography of 1044 references is included.

WEYL, CHARLES, AND OTHERS

Radiologic physics, by Charles Weyl, S. Reid Warren, Jr. and Dallett B. O'Neill, with a foreword by Eugene P. Pendergrass. Springfield, Ill.: Charles C. Thomas, 1941. 459 p. illus. 23 cm. \$5.50. 690

Contents (abridged): Experimental basis of electromagnetism; tentative atomic theories. Electric circuits. Electrical measuring instruments. Transformers, generators, and motors; electric power distributing systems. Electronics. Electromedical apparatus. Theory of radiant energy. X-rays and matter. Radio-activity and nuclear physics. The measurement and control of X-rays and gamma-rays. Physical aspects of the use of X-rays and gamma-rays for therapy. Physical aspects of fluoroscopic and roentgenographic techniques. The effect of variations of exposure factors on roentgenographic results, fluoroscopic and roentgenographic techniques. Appendix: Elements of algebra, trigonometry and calculus. Bibliography. Mathematical tables. Index.

Note: This book assumes no knowledge of mathematics or physics. It is planned to supply the needs of the beginner, the radiologic technician, and the radiologist (particularly the teaching radiologist) with clear, tested, accurate information on contemporary theories and the applications of physics. It covers basic and fundamental information in theoretical and applied electrical engineering and radiologic physics. Features of the book are 167 illustrations, chapter bibliographies, an appendix which covers elementary trigonometry, geometry, and calculus, and an excellent index.

Other Radiation

FORSYTHE, WILLIAM ELMER, EDITOR

Measurement of radiant energy, edited by W. E. Forsythe. Contributors: Charles G. Abbott, Elliot Q. Adams, Loyal B. Aldrich [and others]. Prepared under the direction of A. C. Hardy, Herbert E. Ives and W. E. Forsythe constituting a Committee on Methods of Measurement of Radiation of the Division of Physical Sciences, National Research Council. New York: McGraw-Hill Book Company, Inc., 1937. 452 p. illus. 23 cm. \$5.00. 691

Contents: Fundamental concepts and radiation laws. Sources of radiant energy. Analysis of radiation. Spectrometric instruments and their adjustment. The spectrometer as an optical instrument. Radiometry. Measurement of spectral radiation by means of the photoelectric tube. Measurement of radiant energy with photographic materials. Densitometers and microphotometers. Galvanometers for use in measurement of spectral radiation. Spectrophotometry. Optical and radiation pyrometry. Photometry. Special problems.

Note: A compilation of useful information pertaining to radiant energy and methods of measuring it. The treatment covers the radiation laws, the radiation constants, the care that should be taken with the source in radiation measurements, the method of separating the radiation into wave-length intervals, and, finally, methods of measuring radiation together with the precautions necessary for accurate work.

LEMON, HARVEY BRACE

Cosmic rays thus far. Foreword by Arthur Holley Compton; drawings by Chichi Lasley. New York: W. W. Norton and Company, Inc., 1936. 128 p. illus. 22 cm. \$2.25. 692

Contents: Foreword. Introductory. What are cosmic rays? The early observations. Early interpretations in terms of radioactivity. Evidence of cosmic origin of the "rays." The post-war revival of interest in cosmic rays. Conflicting interpretations and the reasons for them. Some speculations as to cosmic evolution. The latest chapters in the story. Unexpected by-products of fundamental importance. Present status of cosmic ray hypotheses. New stars and cosmic rays. Cosmic rays and galactic rotation. Table of nationalities.

Note: Traces the history of the discovery of cosmic rays and the attempts made to understand them. An interpretation for the layman.

MILLIKAN, ROBERT ANDREWS

Cosmic rays; three lectures, being the revision of the 1936 Page-Barbour lectures of the University of Virginia and the 1937 John Joly lectures of Trinity College, Dublin. New York:

The Macmillan Company, 1939. 134 p. illus. 21 cm. \$2.75. 693

Contents: The discovery of cosmic rays and its general significance. Superpower particles. The earth's magnetic field and cosmic-ray energies.

Note: Based on three of Dr. Millikan's lectures, this book offers a full history of the discovery and investigation of cosmic rays and their effects. Of particular importance to specialists in the field, it can be understood also by laymen of limited scientific training. The first part deals with the contribution made to human society by pure science and traces the growth of our knowledge in the field of radiation through the past seventy years, using the discovery and investigation of cosmic rays as a type of scientific progress. The remaining lectures describe in detail the stages by which the present position has been reached, giving accounts of the experimental methods used and illustrating the thesis with cloud-chamber photographs, tables, photographs of apparatus, and diagrams showing the results of experiments made in different parts of America and abroad. There are 24 half-tone plates and 18 diagrams.

Electricity

ATTWOOD, STEPHEN STANLEY

Electric and magnetic fields. Second edition.

New York: John Wiley & Sons, Inc., 1941. 430 p. illus. 23 cm. \$4.50. 694

Contents: Part I, The electric field: The electrostatic field. Electric fields of simple geometries. Electrostatic polarization and induction. Electric current. Solution by method of images. Space charge—LaPlace and Poisson equations. Mapping electric fields. Energy and forces in condensers. Part II, The magnetic field: The magnetostatic field. Magnetic fields of simple geometries. Magnetic production of electric potentials. Energy and forces in an inductance. Part III, The ferromagnetic field: Ferromagnetism. Permanent magnets. Imaging and mapping magnetic fields. Part IV, Combined electric and magnetic fields: Units and standards. Interactions of electric and magnetic fields. Appendixes: Electrons in atoms. Historical outline. Index.

Note: This book stresses the field point of view; field-mapping methods are accordingly set forth clearly. The second edition presents additional or new material on: the elements of the electronic structure of the atom and the kinetic gas theory; space charge, with a discussion of the current that is limited by space charge; magnetization curves for a wide range of materials; permanent-magnet theory and materials; skin effects and losses in iron due to eddy currents and hysteresis; the field of a moving charge and radiation from a dipole; the absorption properties of a condenser and the dependence of the dielectric constant on frequency. The book is intended chiefly for electrical engineering students; however, applied physicists and geophysicists will find it useful.

BROWN, SIMPSON LEROY

Electricity and magnetism. New York: Henry

Holt and Company, 1937. 310 p. illus. 22 cm. \$2.90. 695

Contents: Current, resistance, and electromotive force. Electrolysis, voltaic action, and thermal E.M.F. Galvanometers, ammeters, and voltmeters. Kirchhoff's laws. The potentiometer. Magnetism. Magnetic fields of electric currents. Induced E.M.F. Magnetization of iron and steel. Inductance. Generators and motors. Electrostatics, electric fields, and condensers. Alternating currents. Thermionic currents and vacuum tubes. Electromagnetic waves. Important constants. Supplementary problems. Laboratory experiments. Review assignments. Index.

Note: A simple presentation of the basic principles of electricity and magnetism for use in college courses. The student's knowledge and observation of electrical phenomena which he encounters daily are used as a starting point, then the study is developed analytically. Definitions, problems, and experiments are used to emphasize basic principles, to illustrate phenomena, and to promote a working knowledge through actual experience. Sixty supplementary problems and eleven review assignments on perforated sheets follow the text.

DUFF, ALEXANDER WILMER, AND SAMUEL J. PLIMPTON

Elements of electro-magnetic theory. Philadelphia: The Blakiston Company, 1940. 173 p. illus. 22 cm. \$2.75. 695a

Contents: Coulomb's law and Gauss's theorem. Electric potential. Groups of charges. Dielectrics. Maxwell's displacement principle. Faraday's graphical methods. Method of Poisson and Laplace. Method of electric images. Method of conjugate functions. Magnetostatics. Magnetic media. Magnetic shells. Electric currents. Magnetic fields of currents. Electromagnetic induction. Alternating currents. Maxwell's equations (for metallic media). Maxwell's equations (with displacement currents). Electromagnetic waves. Properties of moving charges. Index.

Note: A brief outline of the elements of the mathematical theory of electricity and magnetism as developed by the outstanding classical physicists. Intended for use in a one-semester course for undergraduates in general science or engineering. A working knowledge of elementary calculus is assumed, but topics requiring more advanced mathematics are excluded. The historical order of the discovery and development of principles is followed.

FRANK, NATHANIEL HERMAN

Introduction to electricity and optics. New

York: McGraw-Hill Book Company, Inc., 1940. 398 p. illus. 23 cm. \$3.50. 696

Contents: The electrostatic field of force. The sources of the electrostatic field. Induced charges and capacity. Steady electric currents. The magnetic field of steady currents. Induced electromotive forces and inductance. Elementary alternating-current circuits. Displacement current and electromagnetic waves. Radiation of electromagnetic waves. Electronic conduction in vacuum and in metals. Dielectrics. Magnetic media. Electromagnetic waves in material bodies. Geometrical optics and simple optical instruments. Dispersion and scattering. Interference and diffraction. Heat radiation.

Note: This textbook, together with the second edition of author's *Introduction to mechanics and heat*, constitutes a two-volume series in physics for introductory technical course. This title gives an exposition of the fundamental principles, emphasizing field theory and the elementary application of these principles to circuits and to the electrical, magnetic, and optical properties of matter. The treatment is quantitative throughout, and modern atomic ideas are stressed along with the more classical modes of presentation.

FRANKLIN, BENJAMIN

Benjamin Franklin's Experiments; a new edition of Franklin's Experiments and observations on electricity. Edited, with a critical and historical introduction, by I. Bernard Cohen. Cambridge, Mass.: Harvard University Press, 1941. 453 p. illus. 22 cm. \$4.00. 697

Contents (abridged): Introduction: Franklin and science. Electricity before Franklin. Franklin's work in electricity. The editions of Franklin's book. Experiments and observations on electricity: Preface to the first edition. Advertisement to the fourth edition. Extract of letter I—Franklin to Peter Collinson (March 28, 1747). Letters II, III, and IV—Franklin to Peter Collinson (May 25, 1747 and April 29, 1749). Letter V—Franklin to John Mitchell (April 29, 1749). Additional papers to Peter Collinson. Additional experiment. An extract from the minutes of the Royal Society. Letter VI—Franklin to Peter Collinson. Letter VII—Franklin to Cadwallader Colden. Queries and answers. Letter VIII—Ebenezer Kinnersley to Franklin. Letters IX and X—Franklin to Ebenezer Kinnersley. Letter from the Abbé Mazéas to Stephen Hales. Letters XI, XII, and XIII—Franklin to Peter Collinson. Electrical experiments. Appendix. Electrical and other philosophical papers and letters: Electrical experiments made in pursuance of those made by Mr. Canton. Extract of a letter to Mons. Dalibard. Correspondence between Franklin and James Bowdoin, Cadwallader Colden, Dr. John Lining, John Pringle, Ebenezer Kinnersley, Mary Stevenson, and John Winthrop. Appendices. Index.

Note: A new edition of Franklin's work on electricity, composed mainly of letters to friends, who were members of the Royal Society of London, describing his experiments and the conclusions he drew from them. The editor has prepared an introduction to the text which is also a study of Franklin as a scientist. It is designed for the scientist and historian of science, the ordinary historian seeking to evaluate the intellectual significance of Franklin's contribution, and the general reader.

GILBERT, NORMAN EVERETT

Electricity and magnetism, theory and applications. Revised edition. New York: The Mac-

millan Company, 1941. 585 p. illus. 22 cm. \$4.50.
698

Contents: Electricity and the electrostatic field. Magnets and the magnetic field. Potential. Capacity. Theory of dielectrics. Electrical images. Atmospheric electricity. The electric circuit. The measurement of current. Resistance and its measurement. Measurement of potential. Electrolytic conduction and batteries. Current and magnetic field. The ballistic galvanometer. Iron and the magnetic circuit. Direct-current dynamo machines. Current in inductive circuit. Measurement of inductance and capacity. Units and dimensions. Alternating-current meters. Alternating-current networks. Alternators—generators and motors. Transformers. Transmission and distribution of power. Conduction in gases. Electromagnetic waves. Thermionic electron tubes. Electrical communication. Thermoelectricity. Radioactivity and the structure of matter.

Note: A textbook for engineering college students. Mathematics has been limited almost wholly to elementary calculus. Explanations of the Van de Graaff static generator and Millikan's oil drop experiment, a section on theory and dielectrics and induction, sections on moving electric charges in magnetic fields, newly adopted or proposed systems of units and dimensions, electron optics, and a theoretical discussion of the radiation of electromagnetic waves have been added in this edition.

GRAHAM, FRANK DUNCAN

Audels new electric science dictionary, defining over 9000 words, terms and phrases used in theoretical and applied electricity. New York: T. Audel & Co., 1941. 525 p. illus. 17 cm. \$2.00.
699

Note: This pocket-size dictionary gives brief definitions of terms and phrases used in electricity, including a limited number of radio, telephone, and telegraph expressions. The definitions are worded in a purposely simple style and no prior knowledge of fundamentals is assumed on the part of the reader. There is a "New word section" in the 1941 printing which includes about 150 words inadvertently left out of the 1933 edition and a few words that have come into use since 1933.

HARNWELL, GAYLORD PROBASCO

Principles of electricity and electromagnetism. New York: McGraw-Hill Book Company, Inc., 1938. 619 p. illus. 23 cm. (International series in physics, F. K. Richtmyer, consulting editor) \$5.00.
699a

Contents: Electrostatics. Electrostatic energy and dielectrics. Physical characteristics of dielectrics and conductors. Direct-current circuits. Nonohmic circuit elements and alternating currents. Chemical, thermal, and photoelectric effects. Thermionic vacuum tubes. Electrical conduction in gases. Electromagnetic effects of steady currents. Changing electric currents and electromagnetic reactions. Magnetic properties of matter. Electromagnetic machinery. Simple circuits containing inductance, capacitance, and resistance. Coupled circuits, filters, and lines. Vacuum tube circuits. Radiation. Mathematical appendix. Index.

Note: This text is intended as an introduction to both experimental and theoretical electricity, but the emphasis is placed on the experimental aspect rather than the theoretical. In addition to the fundamental classical phenomena, elementary discussions of electronics and gas discharges have been included. Basic experimental laws are introduced as being to some extent familiar to the student, and a preliminary knowledge of physics and electricity, mechanics and heat, and differential and integral calculus is assumed. The appendix provides a reference and review of certain techniques from advanced algebra and calculus.

KELLY, HARRY C.

A textbook in electricity and magnetism. New York: John Wiley & Sons, Inc., 1941. 356 p. illus. 23 cm. \$3.75.
700

Contents: Introduction. Gravitation. Gravitational potential. Energy relations. Introduction to electricity. Development of the concept of charge, electrostatics. Electric potential. Electromotive force. Potential relations. Electric current. Ohm's law and Joule's law. Kirchhoff's laws. Electrolytes. Magnetostatics. Magnetic effects of a current. Forces resulting from magnetic fields. Cathode and canal rays. Induced electromotive force. Electronics. New concept of the atom. Capacitive and self-

inductive circuits. Mutual induction. The alternating-current circuit. Alternating-current power and power factor. Divided circuits. Application of complex numbers. Electromagnetic waves. Index.

Note: An intermediate textbook for students in electrical engineering and in science. It presents both facts and theories, maintaining a balance between classical and contemporary electrical science. Numerous diagrams are included.

LUNT, JOSEPH RICHARD, AND WILLIAM T. WYMAN

Electricity for everyone. New York: The Macmillan Company, 1943. 649 p. illus. 22 cm. \$2.56.
701

Contents (abridged): Smallest electric system. Steel magnet. Electrons replace the door knocker. A steam power station. The transformer. How electric power is transmitted. Wiring system of the home. Safety from electric shock. The electric motor. How ions are put to work. The telegraph. Elements of radio. Television.

Note: The purpose of this volume is to provide the high school student or general reader with a knowledge of the basic principles of electricity, and to acquaint him with the operation of the more familiar types of electrical apparatus. Technical terminology is reduced to a minimum and the simple explanations are supplemented by numerous illustrative drawings. Various experiments which can be performed at home are also described. There is a glossary of the most commonly used electrical terms and a brief bibliography.

PAGE, LEIGH, AND NORMAN ILSLEY ADAMS, JR.

Electrodynamics. New York: D. Van Nostrand Company, Inc., 1940. 540 p. illus. 23 cm. \$6.50.
702

Contents: Three-dimensional vector analysis. The principle of relativity. The electromagnetic field. The elementary charge and the force equation. Material media. Energy, stress, momentum, wave motion. Radiation and radiating systems. Electromagnetic theory of light. Four-dimensional vector analysis. General dynamical methods. Index.

Note: A college textbook for advanced or graduate courses. The subject is treated from the viewpoint of relativity. Quantum electrodynamics is not included.

PAGE, NEWELL CALDWELL

Lessons and problems in electricity. New York: The Macmillan Company, 1936. 356 p. illus. 22 cm. \$2.75.
703

Contents: Electrostatics. Coulomb's law and Gauss' law. Electrostatic potential. Current and electromotive force. Ohm's law. Kirchhoff's rules. Resistance, resistivity, and temperature coefficients. Joule's law; heating effect. Energy and power. Thermoelectricity. Magnetism and magnetic fields. Side-thrusts, and magnetic fields associated with currents. Magnetization. Magnetic circuit relations. Direct-current meters. Other direct-current measuring instruments. Electrostatic influence and capacitance. Condensers. Gaseous conduction and the electron. Conduction in high vacua and some applications. Electromagnetic induction. Inductance. Motional electromotive forces. The alternating current series circuit. Alternating current circuits. A.C. power and power factor. Alternating current transformers. Three-phase circuits. Oscillatory currents. Electrical oscillations and electromagnetic radiation. Electrical units and dimensions. Appendix. Index.

Note: Designed to give students of engineering and physics intensive study on the most important aspects of electricity. Principles and definitions are stressed, and rather less attention is given to application. Calculus is required on occasions, but on the whole the text does not require rigorous mathematics.

PAGE, LEIGH, AND NORMAN ILSLEY ADAMS

Principles of electricity; an intermediate text in electricity and magnetism. New York: D. Van Nostrand Company, Inc., 1931. 620 p. illus. 22 cm. (University physics series) \$4.25. 704

Contents: Fundamental laws of electrostatics. Dielectrics and conductors. Solution of electrostatic problems. Magnetostatics. Steady currents. Chemical and thermal effects. Magnetic field of a current. Motion of ions in electric and magnetic fields. Elec-

tromagnetic induction. Interaction of currents. Flux measurements. Absolute standards and units. Alternating currents. Measurements with varying currents. Coupled circuits, filters and lines. Electromagnetic waves. High frequency oscillations.

Note: A college textbook that covers both principles and technical applications. The authors have assumed that the student will have a knowledge of elementary physics and calculus. More advanced mathematics—when it is needed—is explained in the text.

POOR, VINCENT COLLINS

Electricity and magnetism; the mathematical theory. New York: John Wiley & Sons, Inc., 1931. 183 p. illus. 24 cm. \$2.25. 705

Contents: Introduction: Vector analysis. Electrostatics. Magnetism and polarized dielectrics. Current electricity. The dynamics of the electric current. The electron theory. The application of special relativity theory to electricity. Index.

Note: Designed for advanced students, physicists, mathematicians, and electrical engineers. The book is written in vector notation throughout. In the section dealing with special relativity, the Lorentz transformation formulae and the transformation equations for the electric and magnetic fields are discussed at some length.

SANFORD, FERNANDO

Terrestrial electricity. Stanford University, Calif.: Stanford University Press, 1931. 208 p. illus. 25 cm. (Stanford University publications. University series. Mathematics and astronomy. Vol. II, no. 1) \$2.50. 706

Contents: Historical review. Electrical charges of the earth and the sun. The electrostatic field of the earth. Earth-currents and magnetic variations. Magnetic storms and solar activity. Magnetic and electric influence of the moon. Barometric pressure and the earth's electric charge. Index.

Note: A study of the electrical charges and currents and the magnetic influences of the earth and solar system in which the author outlines a new theory at variance with other theories currently held.

SMYTHE, WILLIAM RALPH

Static and dynamic electricity. New York: McGraw-Hill Book Company, Inc., 1939. 560 p. illus. 23 cm. (International series in physics, F. K. Richtmyer, consulting editor) \$6.00. 707

Contents: Table of symbols. Basic ideas of electrostatics. Condensers, dielectrics, systems of conductors. General theorems. Two-dimensional potential distributions. Three-dimensional potential distributions. Electric current. Magnetic interaction of currents. Electromagnetic induction. Transient phenomena in networks. Alternating currents. Eddy currents. Magnetism. Electromagnetic waves. Special relativity and the motion of charged particles. Static electrical properties of matter.

Note: Formulates the basic laws of electrostatics, magnetostatics, and electromagnetic theory by concise vector methods, from the underlying experimental facts. It gives extended treatment of the mathematical technique for applying these laws to specific problems. The emphasis is upon problems, 100 of which have been worked out. At the ends of the chapters there are 500 more, most of them with answers.

SUYDAM, VERNON ANDREW

Fundamentals of electricity and electromagnetism. New York: D. Van Nostrand Company, Inc., 1940. 690 p. illus. 22 cm. \$4.75. 709

Contents: Historical introduction. Electrostatics. Capacitance, electrostatic energy, and images. Dielectric theory and behavior. Magnetostatics. Terrestrial magnetism. Direct-current circuits. Metallic conduction and resistance. Electrolytic conduction. Thermoelectric effects. Electronic emission. Electromagnetics. Induced electromotive forces. Electric instruments depending on magnetic fields. The magnetic circuit. Moving charges and the electromagnetic field. Atomic constituents. Moving charges in magnetic and electric fields. Transient currents. Alternating currents. Vector treatment of alternating currents. Complex quantities. Complex quantity method in alternating currents. Alternating current bridges. Electric oscillations and electric waves on

wires. The electromagnetic field. Thermionic electron tubes and their use. Index.

Note: A college textbook marked by thorough and detailed discussions of each topic. Most of the mathematics required is contained in the book.

WHITEHEAD, JOHN BOSWELL

Electricity and magnetism; an introduction to the mathematical theory. New York: McGraw-Hill Book Company, Inc., 1939. 221 p. illus. 21 cm. (Electrical engineering texts) \$3.00. 710

Contents: Electrostatics. The electric field. Theorems of the electrostatic field. Electrical capacitance, electrical induction. Capacitors. Systems of conductors. Specific inductive capacitance. Electrostatic measurements. Magnetism. Electrodynamics. Electromagnetism. Mechanical and electrical units. Electromagnetic induction. Transient circuit conditions. Alternating currents. Methods of computation for alternating-current circuits. Conduction of electricity through gases.

Note: A compact development of the physical theories of electricity and magnetism, beginning with the simplest manifestations of mechanical force by electrostatic and magnetic phenomena. The subsequent treatment is chronological with uniform development of the mathematical relations.

ZELENY, ANTHONY

Elements of electricity. Second edition. New York: McGraw-Hill Book Company, Inc., 1935. 526 p. illus. 21 cm. \$3.50. 711

Contents (abridged): Electric charges and electric forces. Ether and matter. Electrostatic units, electric field, potential. Distribution of electric charges on conductors. Magnetic forces. Magnets and magnetic fields. Electron flow (electric current). Units of potential difference, resistance, work and power. Conduction of electricity through liquids and gases. Electromotive force produced by relative motion between a conductor and a magnetic field. Electromotive force between dissimilar substances in contact. Electromotive force produced by electrostatic induction, heat and light. Electromagnetic pulse. Alternating currents. Eddy currents. Magnetic circuit. Measuring instruments. Transformer. Generation and transmission of electric power. Heating, lighting, measurement of temperature. Phenomena in gases at low pressures. Measurement of velocity, charge, and mass of electrons, protons, and isotopes. X-rays, radioactivity, matter. Oscillating circuits. Communication by electricity. Electricity of the atmosphere.

Note: Designed for the first college course in electricity. In the new edition every chapter has been reworked in the light of recent theories and developments. Special features include: the use of relativity to clarify the interrelationship of electric and magnetic forces and the production of an e.m.f. by moving magnetic flux; the improvement and expansion of chapters on electromotive force, radio, and the structure of matter, including a novel treatment of the thermocouple; the addition of material on alternating current circuits containing capacitance and both capacitance and self-induction; and new problems.

Electrical Measurements

CURTIS, HARVEY LINCOLN

Electrical measurements; precise comparisons of standards and absolute determinations of the units. New York: McGraw-Hill Book Company, Inc., 1937. 302 p. illus. 23 cm. (International series in physics) \$4.00. 712

Contents: Introduction. Definitions. History of the electrical units. Standards for maintaining the electrical units. The international electric units. Units and measurements of the fundamental mechanical quantities. Units and measurements of derived mechanical quantities. Construction of resistance standards. Construction of standard cells. Construction of standards of capacitance and inductance. Methods of comparing standards. Measurements involving two or more electrical quantities. Absolute measurement of capacitance. Computation of the inductance of a circuit from its dimensions. The design and construction of absolute standards of inductance. Absolute measurement of resistance; survey of methods. Absolute measurement of resistance—details of precision methods. Absolute measurement

of current; survey of methods. Absolute measurement of current; precision methods. The absolute measurement of electromotive force. Ratio of the electromagnetic to the electrostatic unit of electricity. Appendixes: Computation of elliptic integrals. Determination of the effect of an error in a measured dimension on a computed inductance and on a computed electrodynamic force. Results of absolute determinations of electrical units.

Note: Gives comprehensive descriptions of the important methods used in absolute measurements of the electrical units, including those by which two similar electrical standards can be accurately compared. There is a discussion of every feature that will introduce an error of one part in a million in the final result.

MICHEL, WALTER CHRISTIAN

Advanced electrical measurements. Second edition. New York: D. Van Nostrand Company, Inc., 1941. 347 p. illus. 22 cm. \$3.50. 714

Contents: Observed data; graphical representation, precision of measurements. Measurement of resistance. Measurement of current. Measurement of potential difference. Measurement of quantity of electricity. Thermionic amplifiers. Alternating current instruments. Oscillators and oscillographs. Alternating current impedance measurements. Electricity in gases; electrical vacuum measurements. Electrical thermometry. Radiation measurements and their applications. Electrochemical measurements. Index.

Note: This comprehensive college textbook covers the standard types of apparatus used in the electrical laboratory, as well as those electrical instruments used in measuring other physical quantities, such as pressure, temperature, ionic concentration, and the conductivity of chemical solutions. In its discussion of each method of measurement, it explains the basic principles, the construction and operation of the apparatus, and then gives full details of the procedure to be followed in making the particular measurement. In this edition, more space is devoted to electronic methods and recently developed networks for determining impedance.

SMITH, ARTHUR WHITMORE

Electrical measurements in theory and application. Third edition. New York: McGraw-Hill Book Company, Inc., 1934. 413 p. illus. 24 cm. \$3.00. 715

Contents: Introduction. Units and definitions. Ammeter and voltmeter methods. Ballistic galvanometer and condenser methods. The current galvanometer. The Wheatstone bridge. Potentiometer and standard cell method. Measurement of current. Measurement of power. Electron tubes. The magnetic circuit. Induced electromotive force. Measurement of magnetic flux and M.M.F. Magnetic tests of iron and steel. Alternating currents. Measurement of capacitance. Measurement of inductance. Calibration of alternating-current instruments. Fundamental definitions of the magnetic and electrical units. The relation between magnetic flux density and the corresponding current. Index.

Note: An elementary textbook for use in first-year courses in engineering colleges, intended as a guide in laboratory work with additional material on theory for classroom work. The third edition incorporates new data on measurement of capacitance and inductance using alternating current, and new definitions of electrical terms and units.

Electronics

BLY, MERWYN CLUXTON

A guide to cathode ray patterns. New York: John Wiley & Sons, Inc., 1943. 39 p. illus. 28 cm. Paper, \$1.50. 717

Note: A sketch-and-caption summary of cathode ray pattern types encountered in the usual course of laboratory and test bench work. The material is intended for use by radio and sound technicians and engineers. The book provides a quick and convenient guide, containing over 100 charts of common occurrence with which the operator should be familiar. The patterns produced for this book were developed with conventional amplifiers and oscillators and viewed on a small oscilloscope, using a standard circuit. A section on simple graphic analysis is included. Among the drawings are some of "perfect" half-sine waves of various amplitudes for quick checking of wave shape purity. Numerous circles with dotted axes are provided for the convenience of the technician who wishes to draw reference images from his own experience.

EASTMAN, AUSTIN VITRUVIUS

Fundamentals of vacuum tubes. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 583 p. illus. 23 cm. \$4.50. 718 ✓

Contents: Part I, Basic concepts: Electronic emission. Construction of vacuum tubes. High-vacuum thermionic tubes. Gas-filled thermionic tubes. Photosensitive devices. Special types of tubes. Part II, Applications and circuits: Rectifiers. The vacuum tube as a control device. Audio-frequency amplifiers. Radio-frequency amplifiers. Oscillators. Modulators and demodulators. Appendixes: Definitions and nomenclature. Fourier analysis of a repeating function. Application of the Fourier analysis to an analytical solution of repeating functions, the equations of which are known over short intervals.

Note: The author of this text discusses at length the principal types of vacuum tubes—high-vacuum tubes, mercury-vapor tubes, phototubes, etc. The laws underlying each are fully treated, and engineering analyses of the more important applications are presented. The treatment of the subject is midway between the purely descriptive and the purely mathematical. The present edition contains much new material to cover recent developments.

HUDSON, RALPH GORTON

Electronics. New York: John Wiley & Sons, Inc., 1932. 135 p. illus. 22 cm. \$2.00. 718a

Contents: Evolution of the electron theory. The constitution of matter. Conduction in gases. Conduction in non-metallic liquids. Conduction in solids. Conduction in a vacuum. Radiation. Photoelectric emission. Thermionic emission. Electronic rectifiers. Applications of electronic devices. The elements. Conversion factors of electrical units. Constants pertaining to electronics.

Note: Written for the reader who has a general knowledge of elementary physics, particularly electricity, and who may wish to know something further about the theory and practical applications of electronics. The material is presented in as simple a manner as is consistent with accuracy, and mathematical theory is minimized.

HUGHES, ARTHUR LLEWELYN, AND LEE ALVIN DUBRIDGE

Photoelectric phenomena. New York: McGraw-Hill Book Company, Inc., 1932. 531 p. illus. 23 cm. (International series in physics) \$5.00. 719 ✓

Contents: Introduction. The fundamental laws of photoelectricity. The photoelectric threshold. Energy and spectral distribution of photoelectrons. The selective photoelectric effect. Theories of photoelectric emission. Ionization of gases and vapors by ultra-violet light. Photoconductivity. Photovoltaic effects. Photoelectric effects in non-metallic substances. Photoelectric effects of X-rays and gamma-rays. Photoelectric technique. Applications of the photoelectric effect. Miscellaneous.

Note: A critical survey of the field. The fundamental laws and principles in each branch of the field are fully summarized, together with a discussion of their experimental bases, their theoretical significance, and their practical applications.

KOLLER, LEWIS RICHARD

The physics of electron tubes. Second edition. New York: McGraw-Hill Book Company, Inc., 1937. 234 p. illus. 23 cm. (International series in physics; F. K. Richtmyer, consulting editor) \$3.00. 720 ✓

Contents: Theory of thermionic emission. Thoriated tungsten cathodes. Oxidecoated cathodes. Thermionic emission from caesium. Secondary emission. Determination of temperature. Getters and clean-up of gases, gases in metals. Space charge. Some electron tubes. Discharges in gases. Grid-controlled arcs. Photoelectricity. Photoconductivity. The photovoltaic effect. Appendix.

Note: A thorough explanation of the fundamental physical phenomena involved in the operation of electron tubes. The book is concerned with what takes place inside the electron tube rather than the circuit in which such tubes operate, or the applications of tubes. In this edition new sections have been added on electron optics, secondary-emission multipliers, ignitrons, and positive-ion emission.

MCARTHUR, ELMER D.

Electronics and electron tubes. New York: John Wiley & Sons, Inc., 1936. 173 p. illus. 23 cm. \$2.50. 721

Contents: Electrons, atoms, molecules. Properties of gases. Elements of electron tubes. Two-electrode tubes. Control of electron space currents. Triode and multi-grid-tube applications. Gas- or vapor-filled electron tubes. Application of gas- or vapor-filled tubes. Special tubes. The construction of electron tubes. Appendix. Index.

Note: This book, for engineers and research men in industry, emphasizes the fundamental principles which govern the action of all electron tubes. In addition, space is devoted to enough applications of electron tubes to illustrate their versatility. The book is essentially non-mathematical, but includes a statement of all important equations and data for their use. Some of the material was published serially in the *General Electric review*. The individual physical phenomena contributing to the tube characteristics and also the tube characteristics themselves are given, illustrated by data taken on typical tubes. An abundance of tables and graphs affords an easy reading of technical data. References are given.

MILLMAN, JACOB, AND SAMUEL SEELY

Electronics. New York: McGraw-Hill Book Company, Inc., 1941, 721 p. illus. 23 cm. \$5.00. 723

Contents: Introduction. Motion of charged particles in electric and magnetic fields. Applications of the motion of particles in applied fields. Electrons in metals. Phenomena at the surface of metals. Characteristics of thermionic cathodes. The high-vacuum diode. The kinetic theory of gases. Fundamental processes in gases. Electrical discharges in gases. Commercial gas tubes. Rectifiers. Controlled rectifiers. Filters for rectifiers. Photoelectricity and photoelectric cells. Triode characteristics. Triodes as circuit elements. Multielectrode tubes. Voltage amplifiers. Audio-frequency power amplifiers.

Note: The primary purpose of this textbook is to provide a development of basic electronic principles with applications to many problems in electrical engineering and physics. The treatment is at the level of courses in engineering colleges.

MÜLLER, RALPH HOLCOMBE, AND OTHERS

Experimental electronics, by Ralph H. Müller, R. L. Garman, and M. E. Droz. New York: Prentice-Hall, Inc., 1942. 330 p. illus. 23 cm. (Prentice-Hall chemistry series; W. M. Latimer, editor) \$4.65. 725

Contents: Introduction. Triodes. Characteristics of photoelectric cells. Power supplies. Multigrid tubes. Characteristics of gaseous tubes. D. C. electron-tube voltmeters. A. C. vacuum-tube voltmeters. Application of phototubes. Untuned amplifiers. Vacuum-tube oscillators. The cathode-ray tube. Index.

Note: This is a volume devoted entirely to the characteristics and non-communication uses of electron tubes. Elementary principles of electrical measurements and definitions necessary for understanding electronic circuits appear in the first chapter. A complete list of materials needed for experiments is provided. Subjects treated include construction and principles of apparatus, design, and the application of electron tubes for measurement of chemical and physical properties such as acidity, color, temperature, humidity, pressure, and time.

REICH, HERBERT JOSEPH

Theory and applications of electron tubes. Second edition. New York: McGraw-Hill Book Company, Inc., 1944. 716 p. illus. 23 cm. \$5.00. 726

Contents: Physical concepts. Thermionic emission: the high-vacuum thermionic diode. Grid-controlled high-vacuum tubes. Methods of analysis of vacuum tubes and vacuum-tube circuits. Amplifier definitions, classifications and circuits. Analysis and design of voltage and current amplifiers. Class A and class AB1 power amplifiers. Class B and class AB2 amplifiers. Modulation and detection. Trigger circuits, pulse generators, and oscillators. Electrical conduction in gases. Glow and arc-discharge tubes and circuits. Light-sensitive tubes and cells. Power supplies.

Electron-tube instruments and measurements. Appendix. Author index. Subject index. Symbol index. Problem answers.

Note: A text for use in college courses in theoretical and applied electronics as part of an engineering or scientific curriculum. The book is intended to give the student a sufficiently thorough grounding in the fundamental principles of electron tubes and associated circuits to enable him to apply electron tubes to the solution of new problems. No attempt has been made to discuss all applications of tubes to special problems but rather to cover basic principles and typical applications. Class C amplification and the design of radio transmitters and receivers have been purposely omitted. The second edition brings the advances of the years 1939-1944 up to date and includes new material on modulation and detection together with new problems.

ZWORYKIN, VLADIMIR KOSMA, AND EARL DE WITT WILSON

Photocells and their application. Second edition. New York: John Wiley & Sons, Inc., 1932. 331 p. illus. 20 cm. \$3.00. 727

Contents: Historical introduction. General theory. Radiant energy. Photo-emissive effect. Photosensitive films. Material and apparatus for making photocells. General methods of preparing photocells. The vacuum photocell. The gas-filled photocell. Photoconductive cells. Photo-voltaic cells. Photocell output and amplifying tubes. Optimum outputs of photocells. The problem of amplification. Special light-sensitive devices. The photocell in photometry and colorimetry. The photocell in sound movies. The photocell in facsimile transmission. The photocell in television. Miscellaneous applications. Photocells in the future. Index.

Note: This book is designed primarily for radio and electrical engineers, but much of the text is comprehensible also to non-technical men. New material in this edition includes the chapter on photosensitive films, and fuller treatment of photoconduction and photovoltaic cells. The general arrangement is the same as in the first edition.

Electric Waves

RAMO, SIMON, AND JOHN R. WHINNERY

Fields and waves in modern radio. New York: John Wiley & Sons, Inc., 1944. 502 p. illus. 22 cm. (General Electric series) \$5.00. 728

Contents: Oscillation and wave fundamentals. The equations of stationary electric and magnetic fields. Solutions to static field problems. Maxwell's equations and high-frequency potential concepts. Circuit concepts and their validity at high frequency. Skin effect and circuit impedance elements. Propagation and reflection of electromagnetic waves. Guided electromagnetic waves. Characteristics of common wave guides and transmission lines. Resonant cavities. Radiation. Appendix: Some useful references. Nomenclature. Index.

Note: Electromagnetic theory and related problems for the modern radio and electronics engineer or for the advanced student of ultra-high frequency engineering. Field and wave theory are correlated as a consistent whole with conventional circuit theory. Physical pictures are stressed, and useful exact and approximate methods for the calculation of characteristics of radio system components from d-c to the highest radio frequencies are presented. A knowledge of elementary calculus and physics is required; all other mathematics and physics are supplied in the book itself.

SCHELKUNOFF, SERGEI ALEXANDER

Electromagnetic waves. New York: D. Van Nostrand Company, Inc., 1943. 530 p. illus. 23 cm. \$7.50. 729

Contents: Vectors and coordinate systems. Mathematics of oscillations and waves. Bessel and Legendre functions. Fundamental electromagnetic equations. Impedors, transducers, networks. About waves in general. Transmission theory. Waves, wave guides and resonators. Radiation and diffraction. Antenna theory. The impedance concept.

Note: A discussion of the subject for scientists and engineers. The circuit theory, the transmission line theory, and the field theory are treated as subdivisions of one inclusive theory. Mathematics is used freely, but the main emphasis is upon physics. The book was developed from lectures delivered to staff members of the Bell Telephone Laboratories in New York.

SKILLING, HUGH HILDRETH

Fundamentals of electric waves. New York: John Wiley & Sons, Inc., 1942. 186 p. illus. 23 cm. \$2.75. 730

Contents: Experiments on the electrostatic field. Vector analysis. Certain theorems relating to fields. The electrostatic field. Dielectric materials. Electric current. The magnetic field. Examples and interpretation. Maxwell's hypothesis. Plane waves. Radiation. Antennas. Wave guides: group velocity and phase velocity. Bibliography. Index. Table I, Comparison of units. Table II, Formulas and theorems of vector analysis. Table III, Fundamental electromagnetic equations. Index.

Note: A discussion for advanced students and engineers of the development of Maxwell's electromagnetic equations and their application to the radiation, propagation, and transmission of radio waves. Stress is placed upon physical concepts, with attention to engineering practice and the mathematical framework. Examples and illustrative problems are provided.

✓ STRATTON, JULIUS ADAMS

Electromagnetic theory. New York: McGraw-Hill Book Company, Inc., 1941. 615 p. illus. 23 cm. (International series in physics; L. A. DuBridge, consulting editor) \$6.00. 730a

Contents: The field equations. Stress and energy. The electrostatic field. The magnetostatic field. Plane waves in unbounded, isotropic media. Cylindrical waves. Spherical waves. Radiation. Boundary-value problems.

Note: Postulating Maxwell's equations from the outset, the author of this advanced text and reference book emphasizes dynamic rather than static field theory. A mathematical formulation is followed by a comprehensive investigation of energy and stress relations. The properties of static fields are then discussed and the rest of the book is devoted to the propagation of plane, cylindrical, and spherical waves, the theory of radiation, and boundary-value problems.

Electric Discharges through Gases

COBINE, JAMES DILLON

Gaseous conductors, theory and engineering applications. New York: McGraw-Hill Book Company, Inc., 1941. 606 p. illus. 23 cm. (Electrical engineering texts) \$5.50. 731

Contents: Introduction to the kinetic theory of gases. Motion of ions and electrons. Atomic structure and radiation. Ionization and deionization. Emission of electrons and ions by solids. Space charge and plasma. Field-intensified ionization and breakdown of gases. Glow discharges. Electric arc. Circuit interruption. Gas-discharge rectifiers. Rectifier circuit theory. Gas-discharge light sources. Cathode-ray oscillographs. Appendices: Fundamental constants. Mathematical table. Atomic properties of the elements. Atomic energy states. Standard sphere-gap sparkover voltages. Air-density correction factors for sphere gaps. Suggested experiments. Index.

Note: This book combines the fundamental principles of physics involved in the conduction of electricity in gases with a presentation of the field of application in engineering. The treatment covers such principles of physics essential to an understanding of conduction phenomena as the kinetic theory of gases, characteristics of ionic motion, atomic structure, ionization and deionization processes, emission phenomena, and space charge effects.

✓ LOEB, LEONARD BENEDICT

Fundamental processes of electrical discharge in gases. New York: John Wiley & Sons, Inc., 1939. 717 p. illus. 23 cm. \$7.00. 732

Contents (abridged): Ionic mobilities: Measurements. The experimental data on ionic mobilities. The theory of ionic mobilities. Recombination of ions. The diffusion of ions. Electron mobility. The distribution of electron energies in a gas in an electrical field. The theory of probes and the influence of the distribution

of electron energies on the interpretation of probe measurements. The formation of negative ions. Ionization currents in gases in fields below ionization by collision. Ionization by collision by electrons in a gas. The second Townsend coefficient. Disruptive discharge in gases; sparks: The theory of sparking. Essential techniques in the study of spark discharge. Special types of breakdown. The arc and glow discharges. Appendixes: The kinetic nature of a gas. The pressure of a gas. Molecular free paths. Distribution of velocities. Tables of critical potentials in volts. Table of physical constants. Author index. Subject index.

Note: The material in this book is written from the viewpoint of modern knowledge of atomic structure and is designed for experimental physicists; for researchers on nuclear structure and discharge through gases; for engineers dealing with breakdown of gases, insulation problems, and problems of electronics; or for graduate instruction in the subject. A feature is the extended bibliography which concludes each chapter. The volume includes several appendixes, the most important of which is on the kinetic theory of gases.

LOEB, LEONARD BENEDICT, AND JOHN M. MEEK

The mechanism of the electric spark. Stanford University, Calif.: Stanford University Press, 1941. 188 p. illus. 23 cm. \$3.50. 733

Contents: The Townsend theory of the spark. The streamer theory of spark discharge. The calculation of breakdown in various types of gaps. Author index. Subject index.

Note: This work analyzes the status of the theory of the mechanism of the electric spark in air, and on the basis of this analysis the new streamer theory of spark discharge is developed. This is the first general unified theory applicable to various gaps and configurations of electrodes. The quantitative criterion governing the spark mechanism as developed by Meek is presented and analyzed in detail and on the basis of this picture the mechanism is extended to long sparks including the lightning discharge, which is interpreted in terms of the new theory. The last part of the book applies the general quantitative theory of Meek to the solution of the various types of breakdown problems existing in various gaps. The methods of computation enable one from a unified single theory to predict in advance the breakdown potential of any spark gap for direct current in the absence of space-charge distortion, and where field distribution in the gap can be calculated. The character of the failure of the Townsend theory at pressures around atmospheric and gaps exceeding 3 mm. in length is shown.

MAXFIELD, FREDERICK AUSTIN, AND R. RALPH BENEDICT

Theory of gaseous conduction and electronics. New York: McGraw-Hill Book Company, Inc., 1941. 483 p. illus. 23 cm. \$4.50. 734

Contents: Introduction. The electrostatic field. Movement of charged particles in high vacuum. The molecular theory of gases. Conduction processes. Electron emission: theory and typical applications. Deionizing processes. Production of ions in the gas. Sparking potential, spark-over, and corona discharge. The glow discharge. The arc discharge. Appendixes: List of symbols. Important constants. Molecular weights, and molecular speeds and mean free paths at standard conditions.

Note: The chief aim of this book is to interpret in a systematic way the underlying phenomena upon which the properties of all types of gaseous conduction devices depend. Thus the authors discuss not only high vacuum conduction as found in radio tubes, cathode ray tubes, and phototubes, but also the theory and application of corona, sparking, glows, and arcs.

Magnetism

BITTER, FRANCIS

Introduction to ferromagnetism. New York: McGraw-Hill Book Company, Inc., 1937. 314 p. illus. 23 cm. (International series in physics; F. K. Richtmyer, consulting editor) \$4.00. 735

Contents: General introduction. Historical development. About metals and alloys. Magnetic materials and their preparation, by T. D. Yensen. Internal fields. Magnetization. Mechanical deformation. Electrical phenomena. The absorption and evolution of thermal energy. Appendix: Cooperative phenomena, by F. Zwicky. Index.

Note: Defines as clearly as possible the problems whose solution may be expected to reveal the fundamental processes which constitute ferromagnetism, paves the way for a consideration of the subject from the point of view of solid solutions (impure materials) rather than perfectly homogeneous pure substances, and serves as an introduction and guide to the enormous literature on the experimental side of the subject.

NATIONAL RESEARCH COUNCIL

Physics of the earth. Volume VIII: Terrestrial magnetism and electricity. Edited by J. A. Fleming. New York: McGraw-Hill Book Company, Inc., 1939. 794 p. illus. 24 cm. \$8.00. 736

Contents: The earth's magnetism and magnetic surveys, by J. A. Fleming. Magnetic instruments, by H. F. Johnston and others. Magnetic prospecting, by C. A. Heiland. Atmospheric electricity, by O. H. Gish. Instruments used in observations of atmospheric electricity, by O. W. Torreson. Earth-currents, by W. J. Rooney. On causes of the earth's magnetism and its changes, by A. G. McNish. Some problems of terrestrial magnetism and electricity, by J. Bartels. Radio exploration of the earth's outer atmosphere, by L. V. Berkner. The upper atmosphere, by E. O. Hulburt. The aurora polaris and the upper atmosphere, by L. Vegard. Thunder-clouds, shower-clouds, and their electrical effects, by B. F. J. Schonland. Bibliographical notes and selected references, by H. D. Harradon. Index.

Note: Volumes VII, VIII, and IX of the National Research Council's *Physics of the earth* series are published by the McGraw-Hill Book Company rather than as bulletins of the Council. Volume VII, as indicated in the first note in this series (see Index), is out of print. The present work comprises twelve technical papers designed to stimulate and enlist the interest of a larger group of investigators in terrestrial magnetism and electricity. Emphasis is in general placed upon the increasing importance of the application of experimental approach through research outside the earth's surface. The bibliography lists 1,523 entries representing only the outstanding references appearing in many scientific reports and magazines throughout the world, and is a valuable research tool in itself.

UNITED STATES. COAST AND GEODETIC SURVEY

Directions for magnetic measurements, by Daniel L. Hazard. Third (1930) edition, corrected 1938. Washington, D.C.: Government Printing Office, 1938. 129 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Serial no. 166) \$0.65. 736a

Contents: Introduction. Bibliography. Theory of magnetic measurements. Directions for magnetic observations on land. Directions for observations at sea. Operation of a magnetic observatory. Earthquakes.

Note: This publication is intended primarily as a manual for the guidance of officers of the Coast and Geodetic Survey doing work in terrestrial magnetism, but is valuable to workers in similar organizations as well. The subject matter is presented in such form that an observer familiar with the use of instruments of precision, but without experience in magnetic work, may be able to make the various observations incident to the determination of the magnetic elements. The third edition omits the detailed directions for the operation of a magnetic observatory given in the second edition, but incorporates the results of accumulated experience in the field obtained during 1921-1938.

UNITED STATES. COAST AND GEODETIC SURVEY

Practical uses of the earth's magnetism, by David G. Knapp. Washington, D.C.: Government Printing Office, 1939. 19 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Serial no. 618) Paper, Gratis. 737

Contents: Reasons for magnetic surveys. Magnetic survey of the United States. Changes of the earth's magnetism. Isomagnetic charts and local irregularity. Uses of the compass and of magnetic stations in surveying. How magnetic observations are made. Information of general interest. Publications on terrestrial magnetism. Other work of the Coast and Geodetic Survey.

Note: Designed primarily to assist in answering letters of inquiry, especially those requesting information on the nature of the earth's magnetism or on the magnetic observations made by the U.S. Coast and Geodetic Survey.

UNITED STATES. COAST AND GEODETIC SURVEY

United States magnetic tables and magnetic charts for 1935, by H. Herbert Howe and David G. Knapp. Washington, D.C.: Government Printing Office, 1938. 160 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Serial no. 602) Paper, \$0.60. 738

Contents: Introduction. Available data. Secular-change data. Derivation of secular-change tables. Reduction to epoch. Contents of table of results. Accuracy of tabular values. Construction of the magnetic charts. Lines of equal annual change. Tables.

Note: The fourth in a series of publications issued approximately every ten years, which present the collected results of magnetic observations in the United States. The present volume contains observed values of the magnetic declination, dip, and horizontal intensity for all places in the United States at which reliable observations have been made, together with the corresponding reduced values for January 1, 1935; tables giving the results of observations at repeat stations occupied between January, 1929 and September, 1937; also tables giving the change of the magnetic elements with time; and magnetic charts showing graphically by means of isomagnetic lines the general distribution of the declination, dip, horizontal intensity, and vertical intensity in the United States at the beginning of 1935. The tables are arranged alphabetically by state. There are four isomagnetic charts in color.

WILLIAMS, SAMUEL ROBINSON

Magnetic phenomena; an elementary treatise. New York: McGraw-Hill Book Company, Inc., 1931. 230 p. illus. 24 cm. (International series in physics) \$3.00. 739

Contents: Magneto-magnetics. Magneto-mechanics. Magneto-acoustics. Magneto-electrics. Magneto-thermics. Magneto-optics. Cosmical magnetism. Magnetic theories and experimental facts.

Note: An introduction and guide to the methods and techniques of investigation in the field of magnetism. The volume is intended for the use of the undergraduate physics student, and makes no attempt to cover the subject of magnetism in an exhaustive manner. There are numerous bibliographic footnotes and separate author and subject indexes.

METEOROLOGY

General

BROOKS, CHARLES FRANKLIN, AND OTHERS

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379(m)
Why the weather? By Charles Franklin Brooks. With the collaboration of Eleanor Stabler Brooks and John Nelson. Illustrated with photographs. Revised and enlarged. New York: Harcourt, Brace and Company, 1935. 295 p. illus. 21 cm. \$2.50. 739a

Note: A collection of observations and facts about the weather. It is made up largely of short essays that were syndicated to American newspapers by Science Service. The style is popular and the arrangement of the book informal, but the material included is scientifically accurate.

GILLMER, THOMAS CHARLES, AND H. ERICH NIETSCHE

Clouds, weather and flight. New York: D. Van Nostrand Company, Inc., 1944. 161 p. illus. 28 cm. \$3.75. 740

Contents: Weather and the atmosphere. Part I, The weather: Clouds. Temperature variation and its effect. Atmospheric circulation—wind and flight. Air masses. Front and frontal clouds. Part II, Flight and the weather: Weather maps and how to read them. Forecasting for flight. Weather hazards in flight. Part III, Flight: Flight without power—gliding and soaring. Glossary of meteorological terms. Appendix: Instruments for weather observation. Sample weather maps. Combined weather code tables. Index.

Note: A book of selected information about the weather, designed not for the student meteorologist, but for aviators and laymen.

HUMPHREYS, WILLIAM JACKSON

Fogs, clouds, and aviation. Baltimore: The Williams & Wilkins Company, 1943. 200 p. illus. 20 cm. \$3.00. 741

Contents: Evaporation and condensation. Fogs. Cloud forms. Cloud miscellany. Cloud splendors. Index.

Note: Explains in simple language the processes of evaporation and condensation, fog formation, and the structure and classification of clouds. In the main, the text, bibliography, and illustrations are identical with the author's *Fogs and clouds*, Baltimore: Williams & Wilkins, 1926.

HUMPHREYS, WILLIAM JACKSON

Ways of the weather, a cultural survey of meteorology. Lancaster, Pa.: The Jaques Cattell Press, 1942. 400 p. illus. 25 cm. (Humanizing science series) \$4.00. 742

Contents: Weather perceptions. Weather measurements. The atmosphere: origin and composition. Structure of the atmosphere. Distribution of temperature. Distribution of water vapor. Distribution and changes of atmospheric pressure. Wind. Precipitation. Atmospheric electricity. Weather music. Atmospheric optics. Climate, present and past. Weather control. What of it? Meteorological mileposts.

Note: Not for student meteorologists but rather for the reader who is seeking an intelligent layman's understanding of meteorology and its importance to man. Without recourse to mathematics it discusses the chief problems of weather and climate and dispels many popular fallacies.

PICKWELL, GAYLE

Weather. New York: McGraw-Hill Book Company, 1938. 170 p. illus. 30 cm. \$3.00. 744

Contents (abridged): Why study weather. What makes the weather. Signs of the weather. The work of the weather. What man does about the weather. Learning the weather.

Note: A beautifully illustrated introduction intended for lay readers and beginning students. Technical terms are defined at some length when they are first introduced. The bibliography lists about 25 titles and is briefly annotated.

SMITHSONIAN INSTITUTION

Smithsonian meteorological tables. Fifth revised edition. (Corrected to January, 1931) Washington, D.C.: The Smithsonian Institution, 1939. 282 p. 23 cm. (Smithsonian miscellaneous collections. Vol. 86. Publication no. 3116) \$2.00. 745

Contents (abridged): Description and use of tables. Thermometrical tables. Conversions involving linear measurements. Conversion of measures of time and angle. Conversion of measures of weight. Wind tables. Reduction of temperature to sea level. Reduction of barometer readings to standard units. Table for determining heights and conversions involving geopotential. Hygrometrical tables. Geodetical tables. Miscellaneous tables. Index.

Note: A collection of thermometric, barometric, hygrometric and geodetic tables for the use of the student of meteorology and the practicing meteorologist. Conversions from English to metric measurements of weight and distance are also given, and a lengthy introduction explains the use and applications of each table. The fifth edition contains extensions of some tables to adapt them to the low temperatures and pressures encountered in the tropopause and beyond, plus new tables on measurement of heights in terms of geopotentials in dynamic meters and new international codes and symbols.

TANNEHILL, IVAN RAY

Hurricanes, their nature and history, particularly those of the West Indies and the southern coasts of the United States. Fifth edition. Princeton, N.J.: Princeton University Press, 1944. 269 p. illus. 21 cm. \$3.00. 746

Contents: Tropical cyclones. Winds of the hurricane. The storm wave. Origin of West Indian hurricanes. Hurricane tracks. Rainfall in tropical cyclones. Barometric pressures. Signs of the approaching hurricane. Unusual hurricane movements. Frequency of West Indian hurricanes. Destructive effects of hurricanes. Precautionary measures. Early history of West Indian hurricanes. Memorable hurricanes of the nineteenth century. Chronological account of hurricanes of the twentieth century. Chronological list of hurricanes, 1494–1900. Bibliography. Index.

Note: This book aims to set down in popular language all the essential facts and theories regarding the tropical cyclone and all the known history in brief form of the hurricanes of the West Indies, the United States and adjacent waters of the Atlantic Ocean, the Gulf of Mexico, and the Caribbean Sea. The text of the new edition has been extended to include all that seems worth while, from a popular viewpoint, of recent progress in observing and understanding the hurricane. The list at the end includes dates and locations of 672 tropical storms of the North Atlantic between 1494 and 1900. The preceding chapter describes, with maps, the hurricanes of 1901–1943.

TANNEHILL, IVAN RAY

Weather around the world. Princeton: Prince-

ton University Press, 1943. 200 p. illus. 20 cm. \$2.50.

Contents: Wind and waves. Clouds. Prevailing winds, barometers and the law of storms. Ocean currents, temperatures and climate. Heat and humidity. Cloudiness, rain, snow and fog. Special phenomena over the oceans. Europe. West Indies and South America. The Mediterranean and Middle East. Africa. Asia. Australia and the Pacific Islands. North America. Appendix: Weather records around the world. Indexes.

Note: This book is mainly for general readers, but it is of interest to soldiers, sailors, aviators, and meteorologists. Its summaries of data are particularly useful.

UNITED STATES. WEATHER BUREAU

Russian-English dictionary of meteorological and related terms. April, 1943. Compiled by Statistics Division, U.S. Weather Bureau, in cooperation with Weather Information Service, headquarters Army Air Forces. Washington, D.C.: Government Printing Office, 1943. 65 p. 23 cm. Paper, \$0.25.

Contents: Preface. Russian alphabet. Russian-English vocabulary. Russian-English ordinal numbers. Russian-English cardinal numbers. Russian-English calendar. Russian-English ice terms. Words used in titles of publications. Iso-line definitions. Geographical terms.

Note: This glossary of Russian meteorological and related terms was prepared for use in translating meteorological messages and publications. It contains terms in common usage in meteorology, climatology, and related fields.

UNITED STATES. WEATHER BUREAU. COMMITTEE ON CLOUDS AND CLOUD FORMS

Cloud forms according to the international system of classification. Third edition. Including introductory historical remarks, international cloud definitions and descriptions, and a selection of cloud pictures. Washington, D.C.: Government Printing Office, 1938. 8 p. illus. 23 cm. (W. B. no. 956-revised) Paper, \$0.10.

Contents: Introduction. Origin of cloud names. The International cloud atlas. Heights of clouds. Classification of clouds. Definitions and descriptions: Cirrus. Cirrocumulus. Cirrostratus. Altostratus. Altopstratus. Strato cumulus. Stratus. Nimbostratus. Cumulus. Cumulonimbus. Photographs.

Note: This publication briefly describes the different forms of clouds and gives 32 half-page photographs as illustrations.

WENSTROM, WILLIAM HOLMES

Weather and the ocean of air. Boston: Houghton Mifflin Company, 1942. 484 p. illus. 23 cm. \$4.50.

Contents: The air ocean above us. Heights unexplored—the upper atmosphere. Helios supreme—the sun and the earth. How weather studies began. The weather instruments. Winds aloft and aloft. Sounding the tropospheric depths. Fogs and clouds and showers. Wind-and-climate belts of the world. Air-conditioning on a continental scale—cold and warm air waves. Large-scale storms of the temperate zone—cyclones and fronts. Big wind in a circle—tropical hurricanes. Thor's symphony—thunderstorms and line squalls. Utmost violence of air-tornadoes and waterspouts. Earth's highest frontier—aerology's future. Helios rampant—solar flares and earthly storms. Amateur aerology. Weather reports, maps, and charts. Foretelling the weather. Industry and agriculture; forest weather and war weather. On the water—mariners' weather. In the air—aviators' weather. Index.

Note: This is both a descriptive and a practical book by a retired U.S.A. army officer who was for three years meteorological officer at Bolling Field, District of Columbia. Types and manifestations of weather are described and the science of weather forecasting is explained. Special chapters on weather on the water and weather in the air are designed for yachtsmen and aviators. The book is intended primarily for general readers.

Textbooks

ALBRIGHT, JOHN GROVER

Physical meteorology. New York: Prentice-Hall, Inc., 1939. 392 p. illus. 23 cm. (Prentice-Hall physics series. E. V. Condon, editor) \$5.35.

Contents (abridged): The atmosphere. Height and pressure of the atmosphere. Barometric observations. Temperature and its measurement. Principles of heat. Insulation. Water vapor in the air. Thermodynamics of the atmosphere. Wind directions and velocities. The dynamics of air movements. Atmospheric circulation. Condensation of atmospheric moisture. Precipitation. Cyclonic storms. The formation and structure of extra-tropical cyclones. Atmospheric electricity. Thunderstorms and lightning. Atmospheric acoustics. Atmospheric optics. Appendix. Index.

Note: An introductory course in the principles of meteorology for students who have a working knowledge of physics. Emphasis is placed on the physical aspects of meteorology. Basic methods and instruments of forecasting are described. The appendix contains a list of references used in the text and a supplementary bibliography.

BLAIR, THOMAS ARTHUR

Weather elements; a text in elementary meteorology. New York: Prentice-Hall, Inc., 1942. 401 p. illus. 23 cm. (Prentice-Hall geography series, consulting editor, N. A. Bengtson) \$5.35.

Contents: The atmosphere. Observing temperature, pressure, and wind. Observing moisture, sunshine, visibility, and upper air conditions. Solar radiation and its effects. Condensation of water in the atmosphere. Interrelations of temperature, pressure, and wind. The general circulation. The secondary circulation. Lesser disturbances. Weather forecasting. World weather. Climate. Climate and man. Electrical and optical phenomena. The United States Weather Bureau. Appendixes: Bibliography. Conversion factors and tables. Mean monthly and annual temperatures and precipitation. Climatological section centers of the U.S. Weather Bureau. Index.

Note: The new edition with revisions embodies the progress made in the study of weather and the science of meteorology since this book was first published in 1937. Some of the newer subjects discussed include the operation of sounding balloons equipped with radio-sondes, changes made by the U.S. Weather Bureau for the more accurate gauging of wind direction, uses of the new dry and wet thermometers, new material on the forecasting of flying weather, latent instability, copious rainfall, and a new description of air masses embodying present-day classification and symbols. Six new consecutive daily weather maps are provided together with a discussion of the organization of the U.S. Weather Bureau.

BYERS, HORACE ROBERT

General meteorology, published formerly under the title Synoptic and aeronautical meteorology. New York: McGraw-Hill Book Company, Inc., 1944. 645 p. illus. 23 cm. \$5.00.

Contents (abridged): The sun and the earth. The nature of radiation. The heat balance of the atmosphere. The distribution of temperature. Observations and station instruments. Upper-air and cloud observations. Thermodynamics and statics. Horizontal motion in the atmosphere—the winds. The general circulation. Factors determining air mass structure. Fronts and cyclones. Technique of synoptic-chart analysis. Highs, lows and the upper air. Tropical cyclones. Forecasting technique. Condensation and precipitation. Fog. The formation of ice on aircraft. Thunderstorms and related phenomena. Appendixes: The international code. Graphical aids in analysis and forecasting. Constants, units and conversions.

Note: This work is based upon the author's earlier book *Synoptic and aeronautical meteorology*, but is virtually a new book. It is intended as a textbook in the fundamentals and modern developments in meteorology. Among the advances discussed are isentropic analysis, new forecasting uses of upper-air charts, modification of the Norwegian concepts from upper-air evidence, and behavior of the stratosphere in day-to-day weather.

HAURWITZ, BERNHARD

Dynamic meteorology. New York: McGraw-Hill Book Company, Inc., 1941. 365 p. illus. 23 cm. \$4.00. 756

Contents: The earth. The equation of state for dry and moist air. Atmospheric statics. Adiabatic changes of dry air. Condensation. Adiabatic changes of moist air. Further application of thermodynamics to the atmosphere. Radiation. The equations of motion of the atmosphere. Simple atmospheric motions. Surfaces of discontinuity. Kinematical analysis of the pressure field. Atmospheric turbulence. Turbulent mass exchange. The energy of atmospheric motions. The general circulation of the atmosphere. The perturbation theory of atmospheric motions. Air masses, fronts, cyclones, and anticyclones. Appendix. Indexes.

Note: The author presents a concise treatment of the laws of thermodynamics and dynamics that operate in the atmosphere. He stresses those results of dynamic meteorology which are of importance to the practical forecaster. Recent advances which have led to airmass analysis, frontal and isentropic analysis and the wave theory of cyclones have been included. A large number of bibliographic references are given in the text.

HEWSON, EDGAR WENDELL, AND RICHMOND W. LONGLEY

Meteorology theoretical and applied. New York: John Wiley & Sons, Inc., 1944. 468 p. illus. 22 cm. \$4.75. 757

Contents: Observational facts of the atmosphere. Part I, Theoretical meteorology: Statics of the atmosphere. Thermodynamics of dry air. Thermodynamics of moist air. Radiation in the atmosphere. Atmospheric motions under balanced forces. Frontal surfaces. General kinematics and dynamics of air motions. Turbulence. Statistical analysis of meteorological data. Part II, Applied meteorology: Meteorological instruments and observations. The general circulation over the earth. Temperature and humidity in the atmosphere. Stability and instability. Characteristic properties of different air masses. Cyclones and anticyclones. Winds. Condensation and precipitation. Formation and dissipation of fog. Clouds. Icing on aircraft. Thunderstorms. Climatology. Map analysis and forecasting procedure. Meteorology applied to various human activities. Appendix. Answers to problems and exercises. Index.

Note: The appeal of this book is to persons studying meteorology for the first time, and to practicing forecasters who wish to brush up on the latest developments in the field. Its purpose is to integrate forecasting technique more closely with the theory upon which it is founded. It affords a clear view of the essentials of meteorology, the applications of meteorology to specialized fields, and the statistical analysis of meteorological data.

HUMPHREYS, WILLIAM JACKSON

Physics of the air. Third edition. New York: McGraw-Hill Book Company, Inc., 1940. 676 p. illus. 23 cm. \$6.00. 757a

Contents (abridged): Mechanics and thermodynamics of the atmosphere: Observations. Some theoretical relations between temperature, pressure, and volume in the atmosphere. The isothermal region, or stratosphere. Insolation. Atmospheric circulation: general principles. Winds adverse to aviation. Barometric fluctuations. Evaporation and condensation. Fogs and clouds. The thunderstorm. Lightning. Atmospheric electricity and auroras: Aurora polaris. Meteorological acoustics: Meteorological effects on sound. Optics: Perspective phenomena. Reflection phenomena. Refraction phenomena. Diffraction phenomena. Phenomena due to scattering: color of the sky. Phenomena due to scattering: sky polarization. Factors of climatic control: General summary. Principal ice-age theories. Vulcanism: Other factors of climatic control. Appendix. Gradient wind velocity tables. Constants and equivalents. Index.

Note: A description and explanation of the physical phenomena of the earth's atmosphere for students of weather and atmospheric. The thermodynamic and mechanical theories are presented together with the known physical laws of atmospheric circulation, evaporation, condensation, and pressure changes. The third edition includes minor textual revisions of the second edition and some new information obtained between 1928 and 1940.

KRACHT, PETER ERVIN

Meteorology workbook, with problems. New

York: Cornell Maritime Press, 1943. 148 p. illus. 28 cm. Paper, \$2.25. 757b

Contents: The atmosphere. Temperature variation. Pressure variation with altitude. Composition of the atmosphere. Condensation in the atmosphere. Temperature and dewpoint changes in rising and sinking air. Stability and vertical currents. Cumulus clouds, showers and thunderstorms. Visibility in smoke and haze. Stratus and stratocumulus clouds. Fogs. Local winds. Gradient wind systems. Fronts and frontal weather. Wind friction and gusts. Weather observations and reports. Weather maps. Answers to problems. Cloud forms. Index.

Note: This illustrated manual and problem book is planned as the first step for beginning students of meteorology who must approach the subject without aid of physics or mathematics, but who require a working knowledge of the subject in order to carry on their duties. Illustrated facts with limited explanation constitute most of the first 14 chapters. The 15th deals with weather observations and symbols, and is included for those who need to know how weather reports are assembled and transmitted. The problems are generally of the true or false type which can be answered by underlining the correct statement.

PETTERSSSEN, SVERRE

Introduction to meteorology. New York: McGraw-Hill Book Company, Inc., 1941. 236 p. illus. 23 cm. \$2.50. 758 ✓

Contents: The atmosphere. Observations and instruments. Evaporation, condensation, and precipitation. Adiabatic temperature changes. Stability and instability. Temperature variations and their relation to the weather phenomena. Wind systems. Air masses. Fronts. Cycles and anticycles. Weather analysis. Weather forecasting. Examples of weather maps. Climate. History.

Note: A simplification and abbreviation of the author's *Weather analysis and forecasting* (see Index). This book is designed for the student without previous knowledge of meteorology.

PISTON, DONALD STOVER

Meteorology. Second edition. Philadelphia: The Blakiston Company, 1941. 233 p. illus. 23 cm. \$3.00. 759 ✓

Contents: The make-up of the atmosphere. Physical behavior of dry air. Physical behavior of moist air. Clouds, fogs, and precipitation. Meteorological aspects of radiation. Migratory cyclones and anticyclones. Source regions, fronts, and air masses. Thunderstorms and tornadoes. Weather maps and forecasting. Climatology. Tables. Problems. Maps. Index.

Note: This textbook contains material for a one-semester college course in the subject. It is useful also to aviators, high school teachers, and others who want to acquire quickly an elementary knowledge of the subject. The second edition represents a thorough revision. Material has been added on air mass methods and applications of air mass analysis. Some of the charts of the first edition have been replotted.

SPILHAUS, ATHELSTAN FREDERICK, AND JAMES E. MILLER

Workbook in meteorology. New York: McGraw-Hill Book Company, Inc., 1942. 163 p. illus. 28 cm. \$2.50. 760

Contents (abridged): Mean condition of the atmosphere. Instruments and methods of observation. Exercises in dynamical meteorology. Weather-map and upper-air analysis. Appendices. Bibliography. Index. Charts.

Note: A collection of laboratory experiments and exercises in the elementary phases of meteorology. Selection of topics has been made on the basis of those susceptible to the type of treatment adopted rather than on the basis of a logical development of the subject. Each exercise carries an abbreviated presentation of the principles to be demonstrated, and references are made to texts which should be used collaterally in each experiment. Some of the exercises include temperatures of the world, pressure at sea level, world rainfall, rainfall in the United States, barometric reductions, balloon observations, geostrophic wind scale, solar radiation, and thunderstorm analyses. Charts and maps are provided for working out the graphic details of the problem.

WILLETT, HURD CURTIS

Descriptive meteorology. New York: Academic Press, Inc., 1944. 310 p. illus. 23 cm. \$4.00.

761

Contents: Introduction. The composition and the vertical extent of the atmosphere. Adiabatic processes and the vertical stability of the atmosphere. The heat balance of the atmosphere and the explanation of the observed temperature distribution. Evaporation and condensation in the atmosphere. Wind velocity in the atmosphere. The general circulation of the earth's atmosphere. The secondary circulations of the thermally direct type. Air mass characteristics. Secondary circulations of the dynamic type. The tertiary circulations. The synoptic representation of current weather and the forecasting of future weather. Index.

Note: This volume is intended to serve as a textbook of descriptive meteorology in a third or fourth year college course for students who are familiar with general physics and with mathematics as far as elementary calculus. Emphasis is placed on the description and explanation of meteorological phenomena rather than on theory.

Instruments

FERGUSON, STERLING PRICE

Experimental studies of anemometers. Cambridge, Mass.: Harvard University Press, 1939. 101 p. illus. 25 cm. (Harvard meteorological studies. No. 4) Paper, \$0.90.

762

Contents: Introduction: The measurement of the wind. Historical. Anemometers. Mean rates and sensitivity of anemometers determined at the National Bureau of Standards and the U.S. Weather Bureau, 1922-1930, and at Blue Hill Observatory and Massachusetts Institute of Technology, 1932-1935. The design and construction of anemometers. Additional description of illustrations and tables. Summary. Other work desirable. Bibliography.

Note: A report of the studies made by various meteorological groups from 1921 to 1935 of wind measuring devices, their construction, operation, the measuring technique, analysis of observational data, sensitivity, and other related details. The purpose of these studies was the evaluation of the scales of the more useful anemometers throughout the range of the natural wind, and, in the instance of the 4-cup instrument in use in the U.S. Weather Bureau since 1870, the substitution of corrections based on actual measures verified in the wind tunnel. The bibliography contains 264 papers describing original researches or containing important references to anemometry. There are 36 tables of data in the text.

UNITED STATES. WEATHER BUREAU

Barometers and the measurement of atmospheric pressure. A pamphlet of information respecting the theory and construction of barometers in general, with summary of instructions for the care and use of the standard Weather Bureau instruments. Circular F, Instrument Division. Seventh edition, revised 1941. By C. F. Marvin. Washington, D.C.: Government Printing Office, 1941. 91 p. illus. 22 cm. (Weather Bureau no. 1010) Paper, \$0.15.

763

Contents: Introductory—the barometer. Mercurial barometers. Aneroid barometers. Miscellaneous barometers. Barographs. General instructions. Concerning the elevation of stations. Summary of special instructions for observers of the Weather Bureau. Numerical tables. Index.

Note: A guide for Weather Bureau observers and other meteorological workers giving instructions on the care and use of the barometer and related instruments used in the measurement of atmospheric pressure.

Observations

HOUGHTON, HENRY GARRETT, AND W. H. RADFORD

On the measurement of drop size and liquid water content in fogs and clouds. Cambridge and Woods Hole, Mass.: Massachusetts Institute of Technology and Woods Hole Oceanographic Institution, 1938. 31 p. illus. 28 cm. (Papers in physical oceanography and meteorology. Vol. vi, no. 4) \$0.75. Orders for this number should be addressed to Department of Meteorology, Massachusetts Institute of Technology, Cambridge, Mass.

764

Contents: Part I, Microscopic measurement of the size of natural fog particles, by H. G. Houghton and W. H. Radford. Available methods of size measurement. Slide surfacing. The sampling problem. Improved fog microscopes. Results of observations in fog. Conclusion. References. Part II, An instrument for sampling and measuring liquid fog water, by W. H. Radford. Review of available methods. The sampling problem. Description of the new instrument. Discussion of operating conditions. Results of liquid water measurements in fog. Collection of fog water samples for chemical analysis. Conclusion. References.

Note: This is the report of a research project begun as part of a light scattering investigation and continued as a phase of the fog dissipation project supported in part by a grant from the Penrose Fund of the American Philosophical Society and by the Bureau of Aeronautics of the U.S. Navy Department, the U.S. Army Air Corps, and the Bureau of Air Commerce. In the first of the two papers an improved apparatus and technique for the microscopic measurement of natural fog particles are described and a brief review is given of the general problem of the determination of fog and cloud particle sizes. The second paper describes one of the instruments devised during the study, the essential part of which is a unit comprised of a succession of ordinary wire screens through which a motor-driven fan forces foggy air at a measured rate.

MARVIN, CHARLES FREDERICK

Psychrometric tables for obtaining the vapor pressure, relative humidity, and temperature of the dew point from reading of the wet- and dry-bulb thermometers. Washington, D.C.: Government Printing Office, 1941. 87 p. illus. 23 cm. (United States. Weather Bureau. W. B. no. 235) \$0.15.

765

Contents: Introduction. Use of tables explained. Temperature of dew point in degrees Fahrenheit: Pressure = 30.0 inches. Pressure = 29.0 inches. Pressure = 27.0 inches. Pressure = 25.0 inches. Pressure = 23.0 inches. Relative humidity, percent—Fahrenheit temperatures: Pressure = 30.0 inches. Pressure = 29.0 inches. Pressure = 27.0 inches. Pressure = 25.0 inches. Pressure = 23.0 inches. Pressure of aqueous vapor for temperatures from 100° to 445° F., in inches of mercury. Weight of a cubic foot of aqueous vapor at different temperatures and percentages of saturation. Appendix to psychrometric tables.

Note: The introduction and appendix to this pamphlet contain information on making psychrometric observations. The included tables were first published in 1900. They have been subsequently reprinted from time to time without material change because the more exact values of vapor pressure determined during later years do not differ from those here printed by amounts great enough to warrant recomputation of the tables.

UNITED STATES. WAR DEPARTMENT

The weather observer. June 29, 1942. Washington, D.C.: Government Printing Office, 1942. 674 p. illus. 22 cm. (United States. War Department. Technical manual TM 1-235) Paper, \$1.00.

765a

Contents: Weather instruments. Surface observation. Winds—aloft observation. Weather codes. Weather forms. Recording basic data on synoptic weather maps. Plotting auxiliary charts. Teletype operation and procedure. Appendix: Meteorological constants and conversion formulas. Glossary of meteorological terms. Index.

Note: The official War Department technical manual for the

training and guidance of military personnel whose duties involve the use of weather instruments, the taking of observations, the recording and transmission of weather information, the plotting of weather maps and charts, the interpretation of data, and the routine handling of weather reports. Meteorological theory is avoided. A supplement entitled *Construction of weather maps, charts, and diagrams*, Washington, D.C., 1943, 48 p., paper, \$0.10, outlines in detail the methods of plotting observational data, for entry of analysis, and for preparation of supplementary maps, charts, and diagrams for all U.S. Army Air Forces weather stations.

UNITED STATES. WEATHER BUREAU

Instructions for airway meteorological service. Circular N, Aerological Division. Fourth edition. 1939. (Effective June 1, 1939.) Washington, D.C.: Government Printing Office, 1939. 157 p. illus. 26 cm. Paper, \$0.50. 766

Contents: Preface. The Weather Bureau's meteorological service in aid of air navigation. Administration. Instructions for making airway weather observations. Adding of special data to radio and teletype sequence reports made at 4:30 and 10:30 A.M. and P.M., E.S.T. Clouds. 6-hourly and 3-hourly weather-reporting service. Instructions for the preparation and disposition of airway meteorological forms. Airway forecasts. Instructions for installation and operation, for airway and off-airway stations of instruments. Appendices.

Note: This circular is published primarily for the use of Weather Bureau stations and others connected with the airway meteorological service. It incorporates, revises, and supersedes a number of earlier Weather Bureau publications. Its purpose is to provide directions for the observational work of the airway meteorological service. All phases of the work are covered in detail.

UNITED STATES. WEATHER BUREAU

Instructions for cooperative observers. Circulars B and C, Instrument Division. Ninth edition (revised 1941). Washington, D.C.: Government Printing Office, 1941. 34 p. illus. 22 cm. (W. B. no. 843) Paper, \$0.10. 767

Contents: Introduction. Instructions for the erection and care of instruments. The object of temperature readings and exposure of thermometers. General description of thermometers. Instructions for reuniting detached columns of alcohol. Instructions for mounting maximum and minimum thermometers. The rain gage. How to measure rainfall and snowfall. General instructions about instruments. To make and record observations. Temperature records. Precipitation records. Miscellaneous phenomena. Definitions. Form 1009, meteorological, sample monthly record. Earthquakes and instructions for their noninstrumental observation. Importance of earthquake data. Why the Weather Bureau should collect earthquake data. Instructions for the collection of earthquake data. Index.

Note: The object of this pamphlet is to furnish instructions to observers cooperating with the Weather Bureau in order that there may be uniformity in the observations. There are about 5,500 cooperative observers in the United States. The instructions cover taking and recording meteorological observations, especially of temperature and rainfall, and also reporting earthquakes.

UNITED STATES. WEATHER BUREAU

Instructions for making pilot balloon observations. Circular O, Aerological Division. Washington, D.C.: Government Printing Office, 1942. 68 p. illus. 23 cm. (W. B. no. 1278). Paper, \$0.15. 768

Contents: Introduction. Stations and observations points. Theodolites. Pilot balloons. The observation. Forms and reduction tables. Two-theodolite observations. The tail method. Tables. Index.

Note: This is a new and revised edition of a publication originally issued in 1928. It describes in detail the apparatus and methods used in making meteorological observations with pilot balloons.

UNITED STATES. WEATHER BUREAU

Instructions to marine meteorological observers. Circular M. Seventh edition. Washington, D.C.: Government Printing Office, 1941. 114 p. illus. 23 cm. (W. B. no. 1221) Paper, \$0.25. 769

Contents: The ocean weather service. General information for the marine observer. Instruments and instrumental observations: Mercurial barometers. Aneroid barometers. Barometer comparisons. Thermometers. Psychrometers. Bucket and intake methods of obtaining ocean surface temperatures. Instructions for taking and recording weather observations: Time and position. Wind. Weather. Barometric pressure. Visibility. Temperatures. Clouds. Sea and swell. Gale, storm, and fog reports. Supplemental data for radio messages. Miscellaneous phenomena. Clouds. Optical phenomena. Preparation of weather maps on shipboard. Glossary. A selected list of works on meteorology. Tables.

Note: This publication is primarily for the use of shipmasters and officers cooperating in supplying to the Weather Bureau by radio and by mail the data which makes possible the ocean weather service.

UNITED STATES. WEATHER BUREAU

Instructions for modulated audio frequency radiosonde observations. Circular P (Fourth edition). August, 1943. Washington, D.C.: Government Printing Office, 1943. 98 p. illus. 27 cm. Paper. \$0.75. 769a

Contents: Modulated audio frequency radiosonde. Batteries. Ground equipment. Balloons. Parachutes. Accessories. Observations. Forms. Transmission of raob and apob reports.

Note: This circular gives detailed instructions for using radiosondes for the determination of pressure, temperature, and relative humidity of the upper atmosphere.

UNITED STATES. WEATHER BUREAU

Measurement of precipitation. Instructions for the measurement and registration of precipitation by means of the standard instruments of the United States Weather Bureau. Circular E, Instrument Division. Fourth edition. Revised 1936. By Benjamin C. Kadel. Washington, D.C.: Government Printing Office, 1936. 25 p. illus. 23 cm. (W. B. no. 771) Paper, \$0.10. 770

Contents: Rain-gage exposure and installation. Standard 8-inch gage. Tipping-bucket gage. Fergusson weighing gage. Snow measurements. Snow mat. Snow in remote regions. Snow stakes. Snow samplers. Snow surveys. Index.

Note: A manual of instructions for Weather Bureau workers and other practical meteorologists outlining the use of standard Weather Bureau instruments in the measurement and regulation of rainfall and snowfall.

UNITED STATES. WEATHER BUREAU

Preparation and use of weather maps at sea. Circular R. Second edition. By Ivan R. Tannehill. Washington, D.C.: Government Printing Office, 1941. 100 p. illus. 22 cm. (W. B. no. 1151-revised) Paper, \$0.20. 770a

Contents: Introduction. The observation on the weather map. Station models. The outline chart. The isobars. Wind movement as an aid in drawing isobars. Some rules for drawing isobars. Errors in barometer readings. Discontinuities. Air masses, cyclones, and fronts. Weather phenomena associated with extra-tropical cyclones in the two hemispheres. Permanent and semi-permanent highs and lows. Winds of the earth. Tropical storms. Use of weather maps on shipboard. Appendix: International code for radio weather. Tables for decoding weather reports from ships at sea in international code.

Note: It is the object of this pamphlet to describe the preparation of a simple weather map on shipboard and to give additional information that will be helpful in making use of the map.

Meteorological Data

CLAYTON, HENRY HELM, EDITOR

World weather records (continued from volume 79). 1921-1930. Washington, D.C.: The Smithsonian Institution, 1934. 616 p. 23 cm. (Smithsonian miscellaneous collections. Vol. 90. Publication no. 3218) \$1.50. 771

Contents: Contractions and symbols. Part i. Pressure, temperature, and precipitation at selected stations, 1921-1930. Part ii. Ocean and sea-level pressures. Atmospheric pressures over the northern oceans and sea-level pressures at selected land stations, 1921-1930. Part iii. Late reports and additional data not published in volume 79. Part iv. Errata in volume 79. Appendix: Sun spots and solar radiation, 1921-1930. Alphabetical index of stations and countries. Geographical index by zones of latitude.

Note: A compilation of a homogeneous series of world observations in the form of monthly means of pressure, temperature, and rainfall, intended as a basis for the study of the general circulation of the atmosphere. The data for land stations in part i are given alphabetically, first under the grand divisions of the earth as Africa, Asia, Europe, etc., then by countries under each division, and finally by stations in each country. The units used are those of the countries in which the observations were made. The ocean and sea-level data are grouped by grand divisions from west to east, beginning with the Pacific Ocean. This volume is a continuation of Clayton's *World weather records*, Smithsonian miscellaneous collections, volume 79, Washington, 1927, which contained similar data from circa 1850 to 1920.

DAY, PRESTON CLAIRSVILLE

The daily, monthly, and annual normals of precipitation in the United States, based on the 50-year period, 1878 to 1927 inclusive. Washington, D.C.: Government Printing Office, 1930. 101 p. illus. 31 cm. (United States. Weather Bureau. Monthly weather review supplement no. 34) Paper, \$0.35. 772

Contents: Introduction. Tables.

Note: This publication gives for each of the 197 first-order Weather Bureau stations the day-by-day average precipitation quantity in inches and also gives the daily values by 14-day periods throughout the year and the annual average for each station.

GRIMMINGER, GEORGE, AND W. C. HAINES

Meteorological results of the Byrd Antarctic Expeditions 1928-30, 1933-35: tables. Washington, D.C.: Government Printing Office, 1939. 377 p. illus. 31 cm. (United States. Weather Bureau. Monthly weather review supplement no. 41. W. B. no. 1270) \$1.00. 773

Contents: Foreword. Introduction. Explanation of the tables. Tables.

Note: The bulk of this publication consists of the tables reporting the meteorological results of the Byrd Antarctic Expeditions of 1928-30 and 1933-35. The 39 tables present temperature, pressure, humidity, wind observations, and the results of pilot balloon ascents. Summaries of data were published in 1941 as *Monthly weather review supplement no. 42* (106 p., paper, \$0.35).

HAMRICK, ANDREW MARTIN, AND HOWARD H. MARTIN

Fifty years' weather in Kansas City, Mo., 1889-1938. Washington, D.C.: Government Printing Office, 1941. 53 p. illus. 30 cm. (United States. Weather Bureau. Monthly weather review. Supplement no. 44. Weather Bureau no. 1316) Paper, \$0.20. 773a

Contents: Introduction. Acknowledgments. Precipitation. Snow-fall. Hail. Temperature. Humidity. Wind, weather, and sunshine. A study of the drought period, 1929-38. Tables.

Note: Since Kansas City is situated near the center of the richer agricultural region of the United States, where moisture is of prime importance to the greatest number, this presentation of meteorological data as recorded during the fifty-year interval has significance beyond the purely local aspects and is presented for the benefit of those who wish to delve deeper into the subject. Many of the tabulations are self-explanatory, and in all cases effort has been made to include all of the essential meteorological facts. No attempt is made to explain variances in either temperature or rainfall or to compare one section with another.

KULLMER, CHARLES JULIUS

The latitude shift of the storm track in the 11-year solar period; storm frequency maps of the United States, 1883-1930. Washington, D.C.: The Smithsonian Institution, 1933. 34 p. illus. 24 cm. (Smithsonian miscellaneous collections. Vol. 89, no. 2. Publication 3188. Roebling Fund) Paper, \$0.20. 773b

Note: This publication consists of three pages of text plus 55 maps demonstrating the distribution of storms in the United States for the period 1883-1930. The text discusses the relationship of the storm tracks to sun spot cycles.

TURNAGE, WILLIAM V., AND T. D. MALLERY

An analysis of rainfall in the Sonoran desert and adjacent territory. Washington, D.C.: Carnegie Institution of Washington, 1941. 45 p. illus. 25 cm. (Carnegie Institution of Washington. Publication 529) \$0.35. 774

Contents (abridged): Rain-gauge stations. Meteorological stations. Meteorological regions. Topography. Elevation and rainfall. Influence of relief. Mexican records. Amount and variation in rainfall. Concomitant variations. Summary. Bibliography.

Note: A summary of precipitation measurements in the region indicated, with a discussion of their geographic bearing.

UNITED STATES. WEATHER BUREAU

Climatological data for the United States by sections. Vol. 30, 1943, Part v: Annual summary, 1943. Washington, D.C.: U.S. Weather Bureau, 1944. 42 parts. illus. 30 cm. (W. B. no. 1403) U.S., \$5.00 per year; foreign countries, \$7.00. 775

Note: This annual summary by sections of the weather of the United States presents the climatological data for the year. For each section is given a general summary for the year, notes of interest concerning the weather during the year, and tables showing temperatures, precipitation, cloudiness, and wind recorded month by month at each of the many stations within the state, with comparative figures for earlier years. The sections are states, except in the cases of Maryland and Delaware, which are one section, and of the six New England States, which are another section. The parts of the summary are prepared and printed at the several section centers and assembled at the Washington office.

UNITED STATES. WEATHER BUREAU

Data from aerological soundings at Fairbanks, Alaska, during the winters 1936-37 and 1937-38. Conducted by the Weather Bureau under Bankhead-Jones Special Research Fund. Prepared for publication by the Air Mass Analysis Section, Meteorological Research Division, Weather Bureau. Washington, D.C.: Government Printing Office, 1940. 36 p. 30 cm. (United States. Weather Bureau. Monthly weather review. Supplement no. 40. Weather Bureau no. 1269) Paper, \$0.10. 775a

Contents: Table I, Free-air data for significant levels obtained by means of airplane soundings, winter of 1936-37. Table II, Free-air data for significant levels obtained by means of airplane and radiosonde observations, winter of 1937-38. Table III, Free-air data for standard levels obtained by means of airplane and pilot-balloon observations, winter of 1936-37. Table IV, Free-air data for standard levels above sea level obtained by means of airplanes, radiosonde, and pilot-balloon observations, winter of 1937-38.

Note: These tables present the original data on aerological research conducted at the Tanana River station, Fairbanks, for the use of meteorologists who may wish to make further deductions from them.

UNITED STATES. WEATHER BUREAU

Maps of seasonal precipitation percentage of normal by states. Fifty-three years, 1886-1938. Tables of normals and 10 wettest and 10 driest seasons and years. Washington, D.C.: Government Printing Office, 1942. 76 p. illus. 23 cm. (W. B. no. 1353) Paper, \$0.15. 776

Contents: Maps. Tables.

Note: The 53 pages of maps which comprise the major portion of this publication show, 4 maps to a page, the percentage of the average rainfall in each of the United States for each of the four seasons for each year from 1886 to 1938 inclusive. The tables which follow the maps show the average precipitation, in inches, by states or sections, for the period 1886-1938 and the average precipitation and the percentage of normal, by states or sections, for the 10 driest winters, the 10 driest springs, the 10 driest summers, the 10 driest falls, and the 10 driest years, and also the 10 wettest seasons and years for the period 1886-1938.

UNITED STATES. WEATHER BUREAU

United States meteorological yearbook, 1940. Washington, D.C.: Government Printing Office, 1942. 145 p. illus. 29 cm. \$1.00. 777

Contents: General summary of weather conditions in the United States during the year 1940. Review of the weather conditions, by months and season, during 1940. Precipitation for the year 1940. Tornadoes, 1940. Hail, 1940. Losses from windstorms, 1940. Sunshine, 1940. Excessive rainfall, 1940. Monthly and annual evaporation, 1940. Annual meteorological summaries for 190 stations, 1940. Explanation of tables. Chart of temperature departures for the crop season of 1940. Chart showing total precipitation for the growing season, 1940. Chart of precipitation departures for the crop season of 1940. Chart showing precipitation, inches, for the year 1940.

Note: This annual summary of the weather of the United States presents the climatological data for the year as digested at the Weather Bureau in Washington, together with the detailed tables showing the monthly and annual reports of each of the 190 Weather Bureau stations throughout the country. Prior to 1935 this publication constituted the statistical sections of the Annual report of the Chief of the Weather Bureau. The discussions and statistics presented concern principally the climatological phase of meteorology.

Atmosphere

AUSTIN, JAMES MURDOCH

Cloudiness and precipitation in relation to frontal lifting and horizontal convergence. Cambridge and Woods Hole, Mass.: Massachusetts Institute of Technology and Woods Hole Oceanographic Institution, 1943. 46 p. illus. 28 cm. (Papers in physical oceanography and meteorology published by Massachusetts Institute of Technology and Woods Hole Oceanographic Institution. Vol. IX, no. 3) \$0.75. Orders for this number should be addressed to Department of Meteorology, Massachusetts Institute of Technology, Cambridge, Mass. 777a

Contents (abridged): Vertical motion in relation to frontal wind shear: Variation in pressure gradient discontinuity; synoptic examples and results; isobaric wind components. Cloudiness and precipitation at frontal surfaces: Standard methods for determining front velocity; determination from motion of cold air mass; vertical velocities at frontal surfaces; convective state of ascending air. Application to synoptic situations: Practical determination of front velocity; graphical method; estimation of cloudiness and precipitation; synoptic cases and results. Cloudiness and precipitation in relation to convergence: Divergence of the gradient wind; convergence and vertical motion, and precipitation; convergence, isobaric, frictional, in non-gradient flow. Summary. References.

Note: In this paper the possibility of predicting the change in horizontal shear at a front is investigated; a kinematical study is made of the displacement of frontal surfaces; a brief discussion is given of Gao's theory on the origin of clouds and precipitation in the vicinity of moving cyclones; and the effect of horizontal convergence is investigated and evaluated quantitatively.

BROOKS, FREDERICK AUGUSTUS

Observations of atmospheric radiation. Cambridge and Woods Hole, Mass.: Massachusetts Institute of Technology and Woods Hole Oceanographic Institution, 1941. 23 p. illus. 28 cm. (Papers in physical oceanography and meteorology. Vol. VIII, no. 2) \$0.50. Orders for this number should be addressed to Meteorological Department, Massachusetts Institute of Technology, Cambridge, Massachusetts. 778

Contents: Instrumentation for laboratory measurements of atmospheric emissivity and absorptivity. Determination of emissivities and absorptivities of laboratory air. Relation between laboratory and sky measurements of atmospheric radiation. Measurements of nocturnal atmospheric radiation made concurrently with radiosonde observations. Conclusions. Appendix: Instrumentation and interpretation of sky observations; reduction of galvanometer readings; calibration; determination of incoming radiation values; radiosonde observations; temperature distribution along sighting paths through water vapor. References.

Note: A knowledge of atmospheric radiation is essential to the proper understanding of radiation frosts, and information on this subject was needed in combatting the frost hazard to the citrus industry. Consequently in the special project on orchard heating carried on by members of the Agricultural Engineering Division of the University of California, several measurements of nocturnal radiation were made at Riverside, California, in 1938-39. These reveal a significant relation in the change of intensity with angle of sight from the zenith to near the horizon, which is not revealed in Elsasser's radiation chart. It was noticed also that the Hottle and Mangelsdorf measurement of water-vapor radiation over short paths indicated a rate of change with path length much greater than that derived from Elsasser's chart. These differences between observation and deduction invited further observational study, with a parallel-beam radiometer, of atmospheric radiation from short paths and from the sky, which are here reported.

ELSASSER, WALTER M.

Heat transfer by infrared radiation in the atmosphere. With a copy of the atmospheric radiation chart, second edition. Cambridge, Mass.: Harvard University Press, 1942. 108 p. illus. 25 cm. (Harvard meteorological studies. No. 6) Paper, \$1.25. 779

Contents: Principles of radiative transfer: Kirchhoff's law, the equation of transfer, Planck's law. Transfer of monochromatic radiation. Transfer of non-monochromatic radiation. The general transfer problem. Atmospheric radiation chart. Structure and absorption of infrared bands; Absorption of spectral lines. Absorption of a band spectrum. Pressure and temperature corrections. The water-vapor spectrum. Spectra of other atmospheric gases. Absorption of sunlight. The measurement of atmospheric emission: Instruments for atmospheric radiation measurements. Measurement of isothermal emissivities. Nocturnal radiation measurements. Notes on radiative cooling of the free atmosphere. Appendix: A mechanical computing device. Bibliography. Atmospheric radiation chart, second edition.

Note: This monograph is divided into three parts, the first dealing with the general theory of radiative heat transfer in the

atmosphere without regard to the particular structure of the far infrared spectrum. The second part analyzes this spectrum and shows the connection between its structural elements and the integral effects observed as radiative flow of heat. The last part deals with the direct measurement of radiative heat flow and the empirical relationships derived from such measurements. The bibliography contains 123 references to the world literature.

LENNAHAN, CHARLES MICHAEL

Summary of aerological observations obtained by means of kites, airplanes, and sounding balloons in the United States. Washington, D.C.: Government Printing Office, 1938. 65 p. illus. 30 cm. (United States. Weather Bureau. Monthly weather review supplement no. 38) Paper, \$0.15. 781

Contents: Introduction. Data. Procedure. Discussion. Conclusion. Original publications and other sources of data. Tables: Data for 7 midwestern stations. Data mostly from kite and airplane observations at 29 stations. Data mostly from sounding balloon observations at 16 stations. Theoretical minimum pressures.

Note: This publication is largely a compilation with maps and tables of data based on all the available free-air temperature, pressure, and humidity observations made in the United States. It was published to meet the needs of the aeronautical industry and others for data representative of average and extreme meteorological conditions in the upper troposphere and sub-stratosphere.

MONTGOMERY, RAYMOND BRAISLIN

Observations of vertical humidity distribution above the ocean surface and their relation to evaporation. Contribution no. 235 from the Woods Hole Oceanographic Institution. Cambridge and Woods Hole, Mass.: Massachusetts Institute of Technology and Woods Hole Oceanographic Institution, 1940. 30 p. illus. 28 cm. (Papers in physical oceanography and meteorology. Vol. VII, no. 4) \$0.75. Orders for this number should be addressed to Woods Hole Oceanographic Institution, Woods Hole, Massachusetts. 783

Contents: Introduction. Methods of observation. Tabulation of data. Distribution of eddy viscosity above the sea surface. Evaporation from a hydrodynamically smooth sea surface, a rough sea surface. Thickness of the turbulent boundary layer. Character of the observed vertical variation of vapor pressure. Carbon dioxide exchange between ocean and atmosphere. Magnitude of the observed vapor pressure gradients. Character of the surface and effect of spray. Effect of thermal stability on evaporation. Summary and conclusion. References.

Note: In order to obtain information on the effect of eddy viscosity and eddy diffusion at the boundary between sea and atmosphere, simultaneous measurements of humidity at two, three or four levels between 1 and 38 meters above the sea surface were made from the *Atlantis* during its cruises off the east coast of the United States during the summer of 1935. The 340 series are published in the form of averages for 115 ten-minute intervals. Because of the importance of the problem, the measurements are given in detail, and are subjected to a discussion in which measurements under conditions of thermal stability, not previously used, are included.

NAMIAS, JEROME

Subsidence within the atmosphere. Cambridge, Mass.: Harvard University Press, 1934. 61 p. illus. 24 cm. (Harvard meteorological studies. No. 2) Paper, \$0.85. 784

Contents: Introduction. General discussion of subsidence within the atmosphere: The effect of subsiding motion on the lapse rate. Factors in the development of subsidence inversions. Divergence and the subsidence dome. The conservatism of potential temperature along the surface of subsidence. Observed

variations in the specific humidity along the surface of subsidence. Illustrative synoptic material. Summary. References.

Note: A technical discussion of subsidence or sinking of a layer of air in the atmosphere. The paper is divided into two major portions, the first of these being a discussion from the general standpoint in which diagrams are presented based on the aerological material which is covered synoptically in the second section of the report. The second section gives the salient features in connection with three situations, practically all the space being taken up with a detailed analysis of the aerological material for these periods, with special emphasis upon the subsidence inversions which are observed. There are 18 references listed.

NATIONAL GEOGRAPHIC SOCIETY

The National Geographic Society-U.S. Army Air Corps stratosphere flight of 1935 in the balloon "Explorer II." Washington, D.C.: The National Geographic Society, 1936. 277 p. illus. 25 cm. (National Geographic Society. Contributed technical papers. Stratosphere series. No. 2) United States, \$1.50; other countries, \$1.75. 785

Contents (abridged): Summary of the results of the stratosphere flight of the "Explorer II," by Lyman J. Briggs. Cosmic ray observations in the stratosphere, by W. F. G. Swann and others. Neutrons and other heavy particles in cosmic radiation of the stratosphere, by L. H. Rumbaugh and G. L. Locher. Cosmic ray tracks in photographic emulsions, by T. R. Wilkins. Vertical distribution of ozone in the atmosphere, by Brian O'Brien and H. S. Stewart. Electrical conductivity in the atmosphere to an altitude of 22 kilometers, by O. H. Gish and K. L. Sherman. The composition of the atmosphere at approximately 21.5 kilometers, by Martin Shepherd. Insolation, earth and sky brightness, by Ray P. Teele. Tilt and orientation of the gondola, by W. G. Brombacher and W. C. Trent. Use of sensitized photographic materials in the gondola of the "Explorer II," by Albert W. Stevens. Wind direction and velocity derived from the travel of the balloon "Explorer II," by W. G. Brombacher. The collection of micro-organisms above 36,000 feet, by Lore A. Rogers and Fred C. Meier. Effects of conditions in the stratosphere on spores of fungi, by Fred C. Meier. Mutations observed in *Drosophila* stocks taken up into the stratosphere, by Victor Jollos.

Note: This volume presents the scientific results of the stratosphere flight made by Captain A. W. Stevens and Captain O. A. Anderson on November 11, 1935 in which a height of 72,395 feet above sea level was attained. In addition to the papers listed above, there are accounts of altitude determination, design of the balloon, design and construction of the gondola, ballast requirements, air conditioning, radio and communication system, photographic recording during the flight, and the type of aerial camera equipment used. A photographic supplement shows the lateral curvature of the earth as photographed in the stratosphere at 72,395 feet.

PETTERSSSEN, SVERRE, AND JAMES MURDOCK AUSTIN

Fronts and frontogenesis in relation to vorticity. Cambridge and Woods Hole, Mass.: Massachusetts Institute of Technology and Woods Hole Oceanographic Institution, 1940. 37 p. illus. 28 cm. (Papers in physical oceanography and meteorology. Vol. VII, no. 2) \$0.75. Orders for this number should be addressed to Meteorological Department, Massachusetts Institute of Technology, Cambridge, Massachusetts. 786

Contents: Introduction. Frontal characteristics: Front intensity; fronts in relation to pressure; inclination of frontal surfaces; fronts in relation to wind; summary. Fronts and vorticity: Vorticity expressions; conservatism of vorticity; factors influencing the horizontal shear at frontal surfaces. Synoptic aspects: Evaluation of the vorticity field; synoptic examples; front intensity and shear. References.

Note: Soon after the discovery of the polar front, it was realized that fronts were subject to processes which either increased or diminished their intensity. Thus, fronts may form in fields where the distribution of the meteorological elements is continu-

ous; and, in other cases, fronts may dissolve and develop into a field of continuous distribution of the various elements. The processes which lead to the formation of a front or the increase in intensity of an existing front are called frontogenetical processes. Present theories of frontogenesis are based mainly on kinematical considerations, and discuss the behavior of isotherms, or potential isotherms, in various types of motion. However, the dynamical theory of fronts requires not only a temperature discontinuity but also a number of other conditions which must be fulfilled at a front. One of the general characteristics is the presence of a wind discontinuity resulting in a maximum of cyclonic wind shear (or cyclonic vorticity) at the front. It is therefore of interest to investigate the factors creating and maintaining cyclonic vorticity at the fronts, and it is the aim of this paper to contribute to the solution of this problem.

ROSSBY, CARL GUSTAF, AND OTHERS

Boundary-layer problems in the atmosphere and ocean, by C.-G. Rossby, B. Haurwitz, Benjamin Holzman, Woodrow C. Jacobs, A. A. Kalinske, Phillip Light, R. B. Montgomery, and H. U. Sverdrup. 103 p. illus. 22 cm. (New York Academy of Sciences. Annals. XLIV, art. 1, May 29, 1943) Paper, \$1.25. 786a

Contents: Introduction to the conference and some applications of boundary-layer theory to the physical geography of the Middle West, by C.-G. Rossby. The influence of stability on evaporation, by Benjamin Holzman. Sources of atmospheric heat and moisture over the North Pacific and North Atlantic Oceans, by Woodrow C. Jacobs. Turbulence and the transport of sand and silt by wind, by A. A. Kalinske. Boundary-layer problems involved in snow melt, by Phillip Light. The effect of a gradual wind change on the stability of waves, by B. Haurwitz. On the ratio between heat conduction from the sea surface and heat used for evaporation, by H. U. Sverdrup. Generalization for cylinders of Prandtl's linear assumption for mixing length, by R. B. Montgomery.

Note: This series of papers is the result of a conference on boundary-layer problems in the atmosphere and ocean held by the Section of Oceanography and Meteorology of the New York Academy of Sciences, March 6 and 7, 1942. Short discussions and a bibliography are given at the end of each paper.

ROSSBY, CARL GUSTAF, AND OTHERS

Fluid mechanics applied to the study of atmospheric circulations. (Research conducted in cooperation with U.S. Department of Agriculture under Bankhead-Jones Special Research Fund.) Part I. A study of flow patterns with the aid of isentropic analysis. A. On the maintenance of the westerlies south of the polar front, by Carl-Gustaf Rossby. B. Technique and examples of isentropic analysis, by Jerome Namias. C. Isentropic analysis of a case of anticyclogenesis, by Ritchie G. Simmers. Cambridge and Woods Hole, Mass.: Massachusetts Institute of Technology and Woods Hole Oceanographic Institution, 1938. 125 p. illus. 28 cm. (Papers in physical oceanography and meteorology. Vol. VII, no. 1) \$1.50. Orders for this number should be addressed to Department of Meteorology, Massachusetts Institute of Technology, Cambridge, Mass. 786b

Contents (abridged): Introduction. A. On the maintenance of the westerlies south of the polar front. B. Technique and examples of isentropic analysis: Plotting routine, analysis. Isentropic analysis for the period June 21-30, 1937. Summary. Plates. C. Isentropic analysis of a case of anticyclogenesis: The synoptic situation. The 305 isentropic charts. Vertical structure of the flow patterns. Relationship between flow patterns and the distribution of thunderstorms. Anticyclogenesis and the transition of the anticyclone from cold to warm type. Summary. Plates. References.

Note: This paper constitutes Part I of a report on certain investigations carried out at the Massachusetts Institute of Tech-

nology which have as their ultimate purpose the development of a sound physical model of the general circulation of the atmosphere, in the hope that an improved understanding of this process eventually may furnish valuable clues as to how the time range of the daily weather forecasts may be extended and their quality improved.

STEVENS, LOYD AMEDA

Upper-air wind roses and resultant winds for the eastern section of the United States. Washington, D.C.: Government Printing Office, 1933. 68 p. illus. 31 cm. (United States. Weather Bureau. Monthly weather review supplement no. 35) Paper, \$0.15. 787

Contents: Introduction. Wind roses. Resultant winds. Figures 1-65.

Note: This supplement consists of three pages of text and 48 full-page map-charts of the eastern United States showing wind roses at 14 Weather Bureau stations for 750, 1500, 3000, and 4000 meters above sea level for each month of the year, four map-charts showing wind roses at each of the levels for the entire year, 12 map-charts showing the resultant winds at these stations for each month, and one map-chart showing the annual resultant winds. It is published for the benefit both of aviation interests and of meteorologists and students interested in studying general atmospheric circulation.

STEVENS, LOYD AMEDA

Winds in the upper troposphere and lower stratosphere over the United States. Washington, D.C.: Government Printing Office, 1937. 29 p. illus. 30 cm. (United States. Weather Bureau. Monthly weather review supplement no. 36) Paper, \$0.40. 788

Contents: Introduction. Wind roses. Resultant winds. Average velocities. Frequency of high velocities. Extreme velocities.

Note: This supplement publishes in eight tables and 21 maps the results of wind measurements made by the United States Weather Bureau at 30 stations over a period of several years for altitudes between 20,000 and 46,000 feet above sea level. Interest of aeronautical engineers, meteorologists, and others in high-altitude flying led to the publication of these results.

THORNTHWAIT, CHARLES WARREN, AND BENJAMIN HOLZMAN

Measurement of evaporation from land and water surfaces. Washington, D.C.: Government Printing Office, 1942. 143 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 817) \$0.20. 789

Contents: Introduction. The nature of evaporation. Review of previous methods of determining evaporation. The measurement of turbulence. The equation for evaporation. The determination of the quantity Z_0/Z_i . The universal turbulence constant. The measurement of atmospheric moisture. The measurement of wind-velocity. A year of evaporation at Arlington, Va. Evaporation measurements in agricultural research. Summary. Bibliography. Appendix.

Note: This bulletin discusses the nature of evaporation, the theory of turbulence as it relates to the measurement of evaporation, and the problems involved in making the necessary physical measurements of atmospheric moisture and wind velocity. The study is an attempt to satisfy the need for a method of determining water losses to the atmosphere from land surfaces possessing various types of vegetal cover as well as from free water surfaces. The appendix, which covers p. 76-143, presents three tables of hourly statistics gathered for each day of the year 1939 at Arlington Experiment Farm, Virginia, showing temperature and specific humidity at two levels and wind velocity at four levels for almost every hour of every day of the year.

UNITED STATES. WEATHER BUREAU

The circulation of the atmosphere in high latitudes during winter. Investigation conducted by the Weather Bureau under Bankhead-Jones

Special Research Fund. Washington, D.C.: Government Printing Office, 1941. 35 p. illus. 30 cm. (United States. Weather Bureau. Monthly weather review. Supplement no. 47. Weather Bureau no. 1299) Paper, \$0.15. 789a

Contents: Preface. Acknowledgments. Formation of continental Arctic air. Mean lapse rates. January upper-air pressures. North American winter weather. Examples of cross sections.

Note: An analysis and interpretation of the aerological data obtained between 1936 and 1938 by the Weather Bureau as part of the general study of the formation of cold continental air in the northern interior of Canada and Alaska and the release of cold outbreaks into the latitudes of the United States. The paper is concerned primarily with a study of the circulation and air mass interactions in the northern Canadian and Alaskan region. Part of the basic observational data has been published in the Weather Bureau's *Data from aerological soundings at Fairbanks, Alaska, during the winters 1936-37 and 1937-38*, Washington, D.C., 1940 (see Index).

UNITED STATES. WEATHER BUREAU

Observations of nocturnal radiation at Fairbanks, Alaska, and Fargo, N. Dak. Investigations conducted by Weather Bureau under Bankhead-Jones Special Research Fund. Washington, D.C.: Government Printing Office, 1941. 21 p. illus. 30 cm. (United States. Weather Bureau. Monthly weather review. Supplement no. 46. Weather Bureau no. 1309) Paper, \$0.10. 789b

Contents: Description of instruments. Observations at Fairbanks, Alaska. Observations at Fargo, N. Dak. Outgoing radiation during clear weather. Comparison of observed and computed radiation during clear weather. Relation of radiation to cloudiness. Tables of observational data. References.

Note: An analysis of the radiation measurements and some of the aerological data obtained by the Weather Bureau during the winters of 1936-37 and 1937-38 as part of an investigation of the formation and structure of polar and continental air.

Weather Forecasting

JONES, WILLIAM W., AND OTHERS

Weather map construction and forecasting in the westerlies from single-station aerological data. By William W. Jones, Lt. Col., Army Air Forces, and staff members of the Institute of Meteorology, University of Chicago. Chicago: University of Chicago Press, 1943. 89 p. illus. 27 cm. (Chicago University. Institute of Meteorology. Miscellaneous reports no. 7) Paper, \$0.75. 789c

Contents: Introduction, by C.-G. Rossby. Relation between surface frontal patterns and the circulation front, by William W. Jones. Specific evaluation of pilot-balloon data in single-station analysis, by C.-G. Rossby. The specific use of upper-air soundings for single-station analysis in the region of the westerlies, by Herbert Riehl and Vincent Oliver. Examples of weather analysis from single-station data, by Vincent Oliver, Mildred Boyden, Victor P. Starr, William W. Jones, and C.-G. Rossby.

Note: The results of investigations of a method of weather analysis and forecasting from single-station data, developed from the military necessity of giving out to Army aviators weather advice and forecasts from remote air bases where time, geographic factors, or inadequate communication facilities do not permit the organization of detailed networks of basic observation stations. The method is based essentially on empirically established relationships between the circulation at the 10,000-foot level and the frontal pattern at the ground, the circulation aloft being determined by means of pilot-balloon observations.

NAMIAS, JEROME, AND OTHERS

An introduction to the study of air mass and isentropic analysis. Fifth revised and enlarged edition, with contributions by Tor Bergeron, Bernhard Haurwitz, Graham Millar, Albert K. Showalter, Robert G. Stone, and Hurd C. Willett. Edited by Robert G. Stone. Milton, Mass.: The American Meteorological Society, 1940. 232 p. illus. 23 cm. Paper, \$1.25. 790

Contents: Introduction. Conditions of atmospheric stability; lapse rates. Conservative properties of air masses. The Rossby diagram; Plotting routine. Interpretation. Elements of frontal structure: The warm front. The cold front. Elements of cyclonic structure. The Norwegian wave-theory of cyclones, by B. Haurwitz. Frontal waves, by T. Bergeron. Sources of energy for extra-tropical cyclones, by T. Bergeron. A note on dynamic anti-cyclones and cyclones, by R. G. Stone. The role of the tropopause in the dynamics of extra-tropical disturbances, by T. Bergeron. The tephigram. Synoptic aspects of the thunderstorm. The ice-nuclei theory of rainfall, by R. G. Stone. Characteristic properties of North American air masses, by H. C. Willett. Further studies of American air mass properties, by A. K. Showalter. Isentropic analysis. A bibliography for synoptic meteorologists, by R. G. Stone. Glossary of elementary terms used.

Note: This collection of articles is designed to present a simplified account of various aspects of the system of weather analysis referred to as "air mass analysis" as developed chiefly by the Norwegian school of meteorologists. The work offers students and professional meteorologists a physical picture of the basic processes without involving advanced physics and mathematics. Additions to the bibliography in the 5th edition bring the total number of references to approximately 1,850, and there are a number of secondary annotations in the text to cover developments in technique or theory between 1938 and 1940.

PETTERSEN, SVERRE

Weather analysis and forecasting. New York: McGraw-Hill Book Company, Inc., 1940. 505 p. illus. 23 cm. \$5.00. 791

Contents: Air-mass characteristics. Stability and instability in relation to weather phenomena. Production and transformation of air masses. Kinematic analysis: wind and pressure. Kinematic analysis: frontogenesis. Frontal characteristics. Waves and cyclones. Isentropic analysis. Forecasting of displacement of pressure systems, fronts, and air masses. Deepening and filling. The technique of analysis and forecasting.

Note: This authoritative book presents a comprehensive treatment of modern methods of weather analysis and forecasting. It discusses in detail the underlying theories and their application to weather charts and upper air charts and offers numerous examples of correct analysis and forecasts. Investigations in the fields of air-mass analysis, frontal analysis, and isentropic analysis are included. The chapter on isentropic analysis is by Jerome Namias. A list of references to the literature is provided.

ROSSBY, CARL GUSTAF, EDITOR

A report on the synoptic conditions in the Mediterranean area, by staff members of the Institute of Meteorology, University of Chicago. Chicago: University of Chicago Press, 1944. 155 p. illus. (part col.) 27 cm. (Chicago University. Institute of Meteorology. Miscellaneous reports no. 14) Paper, \$1.50. 791a

Contents: Introduction, by Herbert Riehl. The air masses of the Mediterranean, by E. C. Fowler and others. Weather conditions in the Mediterranean region during periods of high index over Europe, by H. N. Smith and F. D. White. Effects of the northwest flow pattern on the Mediterranean weather, by P. W. Allen. Effect of the southwest flow pattern on the Mediterranean weather, by P. W. Allen. Special forecasting problems of northern and central Italy, by Herbert Riehl.

Note: The object of these six papers is to show the major weather sequence encountered in the Mediterranean from the viewpoint of both the general field of motion and the individual weather elements in order to aid forecasting in that region. The data used were taken from the daily publications of all the European countries. There are about 200 surface air maps and

charts for Europe and the Mediterranean area based on this material.

STARR, VICTOR P.

Basic principles of weather forecasting. New York: Harper & Brothers, 1942. 299 p. illus. 24 cm. (Harper's Geoscience series; Carey Croneis, editor) \$3.00. 792

Contents: Forecasting the field of motion in the atmosphere. Forecasting of the actual weather from the field of motion. Charts and equipment for short-period forecasting. Examples of forecasting during the spring. An example of forecasting during the summer. Examples of forecasting during the fall. Examples of forecasting during the winter. Forecasting from local indications. Extended-period forecasting. Appendix. Index.

Note: This book formulates a systematic approach to the problems involved in forecasting the weather, based upon teaching experience and research work at the University of Chicago. For the most part the treatment is concerned with short-period forecasting—about 36 hours in advance—but there is also a chapter on forecasting for a more extended period. Certain valuable new methods are presented, and a full chapter is devoted to the new technique of forecasting based upon reports from a single station instead of the usual requirement of reports from an extensive network of stations. Recommended procedures are illustrated with numerous examples of actual forecasting problems, and there are some 100 pages of illustrative weather maps and charts.

UNITED STATES. WEATHER BUREAU

Reports on critical studies of methods of long-range weather forecasting conducted by the Bureau of Agricultural Economics under Bankhead-Jones Special Research Fund. Washington, D.C.: Government Printing Office, 1940. 130 p. illus. 30 cm. (United States. Weather Bureau. Monthly weather review supplement no. 39) Paper, \$0.20. 793

Contents: Report on the work of G. T. Walker, by R. B. Montgomery. Verification of three of Walker's forecasting formulae for Indian monsoon rain, by R. B. Montgomery. Report on the work of S. K. Savur of India, by R. B. Montgomery. Polar ice as a meteorological factor, by I. I. Schell. Discussion of some theories on temperature variations in the North Atlantic Ocean and in the atmosphere, by R. B. Montgomery. Summary of the methods used at the Scripps Institution of Oceanography, by R. B. Montgomery. Baur's contribution to long-range weather forecasting, by I. I. Schell. Verification of Baur's 10-day forecasts, by Larry F. Page and Philip F. Clapp. A preliminary summary of the Multanovski school of long-range weather forecasting, by I. I. Schell. Introduction to reports on variations of the solar constant as a factor in long-range weather forecasting, by Larry F. Page. Accuracy of Smithsonian Institution solar-constant measurements, by Herbert G. MacPherson. Comparison of contemporaneous measurements of the solar constant, by Larry F. Page. Some statistical tests of solar-constant weather relationships, by Larry F. Page. Review of H. H. Clayton on long-range weather changes and methods of forecasting, by Hurd C. Willett.

Note: This is a series of papers, with tables, charts, and bibliographies, on various aspects of long-range weather forecasting.

WEIGHTMAN, RICHARD HANSON

Forecasting from synoptic weather charts. Washington, D.C.: Government Printing Office, 1940. 52 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 236) \$0.10. 793a

Contents: Introduction. Basic observational data. Charts and graphs. Matters of special consideration. Cyclones and anticyclones. Fronts. Air-mass analysis. The process of forecasting: Drawing isobars and isotherms. Locating fronts and the highs and lows. Forecasting future positions of fronts and highs and lows. Forecasting the development and changes in intensity of fronts and highs and lows. Forecasting weather conditions, etc. Mathematical forecasting of the movement of highs and lows. Longer period forecasts: Weekly outlook. Seasonal forecasts. Literature cited.

Note: This is a revised edition of a publication originally issued in 1936. It is issued primarily to serve the needs of those who have a working knowledge of meteorology and are beginning to make deductions from synoptic weather charts. While it does not pretend to be a complete treatment of the subject or to contain any new principles, it outlines the more important considerations that should be borne in mind in making weather predictions from synoptic charts.

WEIGHTMAN, RICHARD HANSON

Preliminary studies in seasonal weather forecasting. Washington, D.C.: Government Printing Office, 1941. 99 p. illus. 30 cm. (United States. Weather Bureau. Monthly weather review supplement no. 45) Paper, \$0.30. 794

Contents: Introduction. Previous investigations. Purpose and scope of present study. Data on which present study is based. Results of present study. Walker's oscillations related to United States conditions. Monsoon rainfall related to conditions in the United States. Special data regarding the opening and closing of navigation in St. Michael's Bay, Alaska. Tables. Charts.

Note: The purpose of the investigations reported in this publication was to make a preliminary survey of associations between atmospheric pressures at foreign stations and subsequent temperature and precipitation in the United States by means of simple correlation coefficients. It is published in order that others interested in investigations in seasonal weather forecasting might have the benefit of the suggestions which it contains and the data in convenient form for pursuing similar studies. The publication contains 43 tables and 290 world-map charts.

WILLETT, HURD CURTIS

American air mass properties. Cambridge, Mass.: Massachusetts Institute of Technology, 1933. 116 p. illus. 27 cm. (Papers in physical oceanography and meteorology, published by Massachusetts Institute of Technology and Woods Hole Oceanographic Institution, in continuation of Massachusetts Institute of Technology meteorological papers. Vol. II, no. 2) Paper, \$1.00. Orders for this number should be addressed to Department of Meteorology, Massachusetts Institute of Technology, Cambridge, Mass. 794a

Contents: Introduction: Preliminary remarks on air masses. Discussion of observational material. Treatment of observational material. American air mass properties: Polar continental air masses. Polar maritime air masses. Tropical continental air masses. Tropical maritime air masses. Illustrative synoptic material: Synoptic situation from January 13-18, 1930. Synoptic situation from July 25-30, 1930. References.

Note: The purpose of this paper is to give the results of an investigation of the properties of the principal winter and summer air masses of North America and to comment on some of the striking differences which appear between North American and European air masses. The work is illustrated with tables and charts.

WILLETT, HURD CURTIS

Report of the five-day forecasting procedure, verification and research as conducted between July, 1940 and August, 1941, by H. C. Willett, with contributions by R. A. Allen and J. Namias. Cambridge and Woods Hole, Mass.: Massachusetts Institute of Technology and Woods Hole Oceanographic Institution, 1941. 88 p. illus. 28 cm. (Papers in physical oceanography and meteorology. Vol. IX, no. 1) \$1.00. Orders for this number should be sent to the Meteorological Department, Massachusetts Institute of Technology, Cambridge, Mass. 795

Contents: Section i, Organization of project: Administrative set-up. Principal objects of project. Section ii, Preparation of five-day forecasts: Description of forecast service and routine. Explanation of forecasting technique. Illustration. Verification of results. Section iii, Special investigations supplementary to the five-day forecasting procedure: Statistical analysis of polar year data. Polar anticyclogenesis and the zonal index. The meridional transport of water vapor. Maps of the upper troposphere. Movement of upper level wave systems. Precipitation pattern correlated with mean maps. Ocean weather forecasts. Charts of visibility, ceiling and cloudiness. Section iv, Suggestions for additional research.

Note: The five-day forecasting unit was established as a cooperative project between the Weather Bureau, the Agricultural Marketing Service, and the Massachusetts Institute of Technology. The immediate practical purpose for which this project was set up was the semi-weekly issuance of five-day forecasts for the entire continental United States, which were to take the place of the former weekly forecasts. As a requisite to the success of the project, a program of investigation with the following objects was also inaugurated: 1. The extension of our knowledge and understanding of the factors which control the state of the general circulation of the earth's atmosphere and regulate its large scale changes. 2. The development and extension of the working tools and routine procedure by which the five-day forecasts are prepared. 3. The extension of the forecasting technique to the ocean areas adjacent to North America. 4. The development of a system of rigid statistical verification of the five-day forecasts which will express satisfactorily the success of the forecasts in terms of the forecaster's skill as measured against the statistically probable verification percentage.

Climate

BIEL, ERWIN R.

Climatology of the Mediterranean area. Chicago: University of Chicago Press, 1944. 180 p. 27 cm. (Chicago University. Institute of Meteorology. Miscellaneous reports no. 13) Paper, \$2.00. 795a

Contents (abridged): Introduction. Pressure and wind. Precipitation. Water-vapor content and relative humidity. Cloudiness and fogs. Temperature. Station list. Bibliography.

Note: A text and study guide prepared to facilitate the teaching of climatology offered to Army and Navy students in the Institute of Meteorology at the University of Chicago, which may also be adapted for use in other schools and colleges. An attempt has been made to combine a great variety of climatological, geographical, and oceanographic facts and to present them in a way calculated to appeal to meteorologists and students more than do the usual statistical climatographies. About 250 books, monographs, and journal articles are listed in the bibliography and there is a $9\frac{1}{2} \times 20"$ weather map as frontispiece. Litho-printed from typewritten copy.

BLAIR, THOMAS ARTHUR

Climatology, general and regional. New York: Prentice-Hall, Inc., 1942. 484 p. illus. 23 cm. (Prentice-Hall geography series; consulting editor, N. A. Bengtson) \$5.35. 796

Contents: Part i, General climatology: Weather and climate. Temperature as a climatic element. Pressure, wind, and moisture as climatic elements. Climatic controls. Climatic variability. Climatic influences. The classification of climate. Part ii, The climates of the world: General climatic features of North and Central America. The humid climates of Central America, southern Mexico, West Indies, southern Florida, and Hawaii. The dry climates of North America. Subtropical climates of the United States. Humid intermediate climates of North America. Polar and subpolar climates of North America. Climates of South America. Humid tropical and subtropical climates of the East Indies, the Philippines, and southern Asia. Dry climates of Eurasia. Humid climates of China, Japan, and Manchukuo. Climate of the Mediterranean region. Humid intermediate, subpolar, and polar climates of Europe and Siberia. Tropical climates of Africa. Subtropical climates of Africa. Climates of Australia and New Zealand. Appendices—Bibliography, temperature and rainfall tables. Index.

Note: This work covers the entire subject of climates, the agents which comprise them, the factors which influence them, and climatic effects and phenomena. Particular attention is given

to the significance of plants as indicators of climatic types. Conditions of life and agricultural pursuits are emphasized.

BLUMENSTOCK, GEORGE, JR.

Drought in the United States analyzed by means of the theory of probability. Washington, D.C.: Government Printing Office, 1942. 63 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 819) \$0.15. 796a

Contents: Introduction. Preliminary analysis of the problem. Theoretical distributions for monthly time intervals. Theoretical distribution of drought for seasonal time intervals. Theoretical distribution of drought for annual or general time intervals. Calculation of probability of future drought occurrence. Uses and possible extensions of the probability analysis of drought. Summary. Literature cited. Mathematical symbols.

Note: This bulletin represents an attempt to apply probability theory to a particular climatic frequency distribution. It develops a statistical method for the description of occurrence of drought and shows how drought hazard can be expressed in terms of probability or chance. Drought occurrence was tabulated and wholly or partly analyzed for 216 stations scattered in all parts of every state in the United States including all climatic areas and covering the years 1898-1937. Length of each drought was expressed in days, and frequency distributions were prepared showing the number of occurrences of droughts of various lengths. Droughts were considered terminated by 0.10 inch or more of precipitation in 48 hours or less. While the bulletin is primarily a methodologic study, its contents are of interest to any scientists concerned with the causes or effects of drought.

CLAYTON, HENRY HELM

Solar relations to weather and life. Canton, Mass.: The Clayton Weather Service, 1943. 2 v. illus. 22 cm. \$6.00. 796b

Contents: Volume i. The yearly and daily cycles. Solar variability and weather. Solar cycles and weather cycles. Forecasting the weather. Solar cycles and life cycles. The hypothesis of the planetary cause of sunspots. Index. Volume ii. Periodicity in weather. Weather waves. Relation of weather to solar changes. Relation of solar changes to electric and magnetic changes. Index.

Note: Volume i includes a brief survey of the influence of solar variations on the weather, the life of plants, animals, and man, and a discussion on the possible origin of solar variations, and is in itself a summary of the detailed researches of the author made between 1884 and 1942. Volume ii consists of a collection of the author's articles and papers published between those years and here reprinted from the original plates of the bulletins and journals in which they first appeared. The work as a whole attempts to find in solar changes the causes which determine air mass movements, or the weather, and to indicate how weather changes are closely related to changes taking place on the surface of the sun, such as sunspots, faculae, and flocculi. These are found to be related to changes in solar radiation outside our atmosphere, particularly to changes in the amount of radiant energy in the ultra-violet and blue end of the solar spectrum. There are separate indexes in each volume.

CONRAD, VICTOR

Fundamentals of physical climatology. Milton, Mass.: Harvard University, Blue Hill Meteorological Observatory, 1942. 121 p. illus. 23 cm. Paper, \$1.25. 797

Contents: Radiation balance of the atmosphere. Air temperature on the earth's surface. Lapse rate of temperature; superadiabatic gradients. Static and dynamic inversions; continental and oceanic climate (theory of exchange). Local and world-wide circulations. Meridional heat exchange. Humidity and cloud. Sunshine and fog. Rain; potential water power. Synthetic climatology. References. Index.

Note: This transcript of eight lectures delivered at Harvard University in 1940 is intended for the general public interested in natural science and is useful for the specialist as well. The attempt is made to use only a few physical principles to explain as many climatological phenomena as possible, and to show that many features are readily explainable in a nearly quantitative way. Special attention is called to the role of the turbulence of the atmosphere and of the hydrosphere in many climatic phenomena.

CONRAD, VICTOR

Methods in climatology. Cambridge, Mass.: Harvard University Press, 1944. 228 p. illus. 23 cm. \$4.00. 798

Contents (abridged): Part I, General methods: Climatological elements. General and special statistical characteristics of climatological series. Some problems of curve fitting and smoothing of numerical series. Harmonic analysis. Part II, Representation of characteristic features of different elements: Temperature. Atmospheric pressure and pressure of water vapor. Wind. Cloudiness. Precipitation. Part III, Methods of spatial comparison: Comparison of observational series of different places. Geographical distribution of climatological elements. Correlation. Graphic comparison of climatological elements. Methods of anomalies. Wind. Air mass climatology. Numerical characterization of different climatic features. Part IV, The climatology: Arrangement of a climatology. Conclusion. Appendixes. Index.

Note: A textbook for students of climatology, intended to emphasize the strictly climatological methods, rather than the geographical methods, of examining observational data in a critical and quantitative way and of arranging a climatology. A system of methods is presented which is meant primarily to facilitate the step from qualitative to quantitative methods. The first two parts of the book deal with the variations of the elements in the course of time at one fixed place. The general representation of climatological factors is followed by discussions on the special characteristics of the single elements. Much space is devoted to graphical methods of representation.

DOUGLASS, ANDREW ELLICOTT

Climatic cycles and tree growth. Volume III: A study of cycles. Washington, D.C.: The Carnegie Institution of Washington, 1936. 171 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 289, Vol. 3) Paper, \$2.50; cloth, \$3.00. 798a

Contents: Introduction. Cyclogram analysis. The discontinuous period in cyclogram analysis. Analysis of solar records. Analysis of terrestrial records. Relation between terrestrial and solar records. The cycle problem and long-range forecasting. Appendix: Studies of the cyclogram, by E. Schulman. Cycle summation curves. An automatic optical periodograph, by A. E. Douglass. Bibliography.

Note: Although part of a three-volume publication on climatic cycles and tree growth, Volume III may be used independently of the first two, which have been out of print for some time. The present work is based on an analytical method developed by the author which involves the use of a new type of optical instrument known as the cyclogram. This instrument produces photographically a rectangular chart of sunspots or tree ring records with a general time scale placed horizontally, progressing from left to right, and a differential time scale in the vertical. From the viewpoint of climatology, the investigation is a study of the geographical extension of certain climatic similarities, since by means of the cyclogram similarities not hitherto observed can be recognized. One hundred ninety-seven articles and monographs are listed in the bibliography.

HAURWITZ, BERNHARD, AND JAMES M. AUSTIN

Climatology. New York: McGraw-Hill Book Company, Inc., 1944. 410 p. illus. 23 cm. \$4.50. 798b

Contents: Preface. Introduction. Part A, General climatology: Solar radiation and terrestrial heat balance. Temperature. Wind and pressure. Hydrometeors. Air masses, fronts, cyclones, and anticyclones. Climatic zones and types. Description of climatic types. Microclimatology. Part B, Regional climatology: North and Central America. South America. Europe. Asia. Africa. Australia and New Zealand. Arctic and Antarctic. Oceanic regions. Index.

Note: This introductory text for students of meteorology is concerned with a description of climate in all parts of the world, as produced by the combined action of such variables as temperature, pressure, wind, humidity, and precipitation. Part A presents a survey of each of these elements, their distribution over the globe, and the manner in which they affect climate. Part B gives a detailed description of the climatic features of each continent and of the oceans. Seventeen maps of the world showing mean annual temperature range, mean sea level pressure ocean currents, surface temperatures, precipitation, cloudiness, etc., are contained in a pocket at the end of the volume.

LANDSBERG, HELMUT

Physical climatology. State College, Pa.: School of Mineral Industries, The Pennsylvania State College, 1941. 283 p. illus. 23 cm. \$3.50. 799 ✓

Contents: Collection and use of climatic data: Method of investigation. Installation of instruments. Usage of climatological observations. Climatological elements: The atmosphere. Atmosphere heat balance. Simple climatic elements. Complex climatic elements. Composition of climatic elements. Applied climatology: Climate and environment. Foreshadowing of climate. Literature references. Indexes.

Note: A textbook of physical climatology, presenting the physical facts underlying climatic conditions and developments. Regional climatology or the study of observational material on geographical lines is purposely omitted. Emphasis is placed on the counterplay of cause and effect, the climatic changes due to modifications in topography, and the environmental factor in relation of climate to physical or biological processes. The student is shown how to collect and analyze climatological data.

PAGE, JOHN LORENCE

Climate of Mexico. Washington, D.C.: Government Printing Office, 1930. 30 p. illus. 31 cm. (United States. Weather Bureau. Monthly weather review supplement no. 33) Paper, \$0.15. 800 ✓

Contents: Preface. Introduction. Pressure, winds, and storms. Temperature. Rainfall. Summary. Bibliography.

Note: The purpose of this supplement is to portray and interpret some of the various phases of the climatic conditions of Mexico. The data upon which the study is based are instrumental observations made throughout Mexico and published descriptions of some phases of the climate. The publication includes 41 maps and graphs, and a bibliography of 72 items.

THORNTHWAITTE, CHARLES WARREN

Atlas of climatic types in the United States 1900-1939. Washington, D.C.: Government Printing Office, 1941. 58 p. illus. 47 cm. (United States. Department of Agriculture. Miscellaneous publication no. 421) \$1.25. 800a

Contents: Introduction. The evolution of the climatic pattern. Vegetation as a climatic indicator. The determination of effective precipitation. The climates in the United States: Superhumid climate. Humid climate. Subhumid climate. Semiarid climate. Arid climate. Climatic variation. Literature cited. Selected list of references. Plates: Average annual precipitation over the earth. Climatic regions over the earth. Normal distribution of principal climates in the United States, annual. Normal distribution of principal climates in the United States, crop season. Climates of the United States for each year from 1900 to 1939 (annual climates, crop-season climates). Frequency of arid climate (annual and crop season). Frequency of semiarid and drier climates (annual and crop season). Frequency of dry-subhumid and drier climates (annual and crop season). Frequency of moist-subhumid and drier climates (annual and crop season). Frequency of humid climate (annual and crop season). Frequency of superhumid climate (annual and crop season).

Note: The maps in this atlas are restricted to a presentation of the moisture factor of climate and show the normal position of the principal climatic types, their variation in position from year to year, and the frequency of occurrence of the various individual climates. From a study of these colored maps of the United States, of which there are 96 arranged two to a page, an appreciation of the diversity of the problems of soil and water conservation in the different parts of the country may be obtained. The publication is sponsored by the Soil Conservation Service.

TREWARTHA, GLENN THOMAS

An introduction to weather and climate. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 545 p. illus. 23 cm. (McGraw-Hill series in geography, V. C. Finch, consulting editor) \$4.00. 801 1937

Contents: Part I, The elements of weather and climate: Air temperature (including insolation). Atmospheric pressure and winds. Atmospheric moisture and precipitation. Air masses and fronts. Storms and their associated weather types. Part II, Climatic types and their distribution: The tropical rainy climates. The dry climates. The humid mesothermal climates. The humid microthermal climates. Polar climates and highland climates. Appendixes: Köppen's and Thornthwaite's classifications of climates. Supplementary climatic data for selected stations. Index.

Note: An introductory college text covering the general field of weather and climate apart from the other elements of physical earth. No attempt has been made to cover the entire field of meteorology or of air physics, the emphasis being mainly upon climatic conditions and associated types of weather. Temperature, precipitation, and storms are treated individually, with special attention given to world distribution rather than to causes and origins. The second half of the book deals with regional peculiarities and climatic classification. The second edition contains new material on the origin and modification of air masses, atmospheric fronts, and the air-mass characteristics of some continents, together with a revised system of climatic classification, new climatic data, and new illustrations.

UNITED STATES. DEPARTMENT OF AGRICULTURE

Climate and man, edited by Gove Hambidge and Marion Julia Drown. Washington, D.C.: Government Printing Office, 1941. 1248 p. illus. 23 cm. (United States. Department of Agriculture. Yearbook of agriculture 1941) \$1.75. 802

Contents: 1941 yearbook committee. Foreword, by Claude R. Wickard. Climate and man—a summary, by Gove Hambidge. Part 1, Climate as a world influence: Climatic change through the ages. Climate and the world pattern. The how and why of weather knowledge. Part 2, Climate and agricultural settlement: The settlement of the humid East. Climate and settlement of the subhumid lands. Climate and settlement in the great plains. Climate and settlement of the arid region. Settlement and cultivation in the summer-dry climates. The colonization of northern lands. Climate and settlement in Puerto Rico and the Hawaiian Islands. Climate and future settlement. Comfort and disease in relation to climate. Health in tropical climates. Part 3, Climate and the

farmer: Climate and soil. Effects of climatic factors on growing plants. Influence of climate and weather on growth of corn. Climate and small grains. Climate and sorghum. Climate and cotton. Climate and tobacco. Climate and vegetable crops. Climatic adaptation of fruit and nut crops. Climatic relations of sugarcane and sugar beet. Climate and forage crops. Climate and grazing. Climate and the nation's forests. Climate and plant diseases. Insects and the weather. Climate and livestock production. Climate in relation to worm parasites of livestock. Part 4, The scientific approach to weather and climate: Flood hazards and flood control. How the daily forecast is made. The scientific basis of modern meteorology. Amateur forecasting from cloud formations. Part 5, Climatic data, with special reference to agriculture in the United States: World extremes of weather. The climates of the world. Climate and weather data for the United States. Climates of the United States (46 maps). Climates of the states (including for each state: climatic summary tables, precipitation and temperature tables, special frost tables, 7 maps, and supplementary climatic notes). Climates of the territories and the West Indian islands. Index.

Note: This volume about weather and climate treats these two subjects comprehensively, with special reference to their influence upon agriculture in the United States. The articles are written by scientists in the United States Department of Agriculture and others. Pages 685-1228 present climate and weather data for the United States with tables and maps for each state and for Alaska, the Hawaiian Islands, and the West Indian islands and Puerto Rico. Most of the chapters list literature cited.

UNITED STATES. WEATHER BUREAU

Normal weather for the United States, by J. B. Kincer. Washington, D.C.: Government Printing Office, 1943. 36 p. illus. 23 cm. Paper, \$0.10. 803

Contents: Preface. January. February. March. April. May. June. July. August. September. October. November. December.

Note: This publication shows the normals, variations, and extremes of temperature and precipitation for the 48 United States by months. For each month there are explanatory notes, a table, and four maps which show by states the normal and extreme temperatures and the average precipitation.

CHEMISTRY

Bibliography

MELLON, MELVIN GUY

Chemical publications, their nature and use. Second edition. New York: McGraw-Hill Book Company, Inc., 1940. 184 p. illus. 21 cm. (International chemical series) \$2.75. 804

Contents: Introduction and general outline. Original sources—periodicals. Original sources—institutional publications. Original sources—literature on patents. Original sources—miscellaneous contributions. Secondary sources—periodicals and serials. Secondary sources—bibliographies. Secondary sources—general works of reference and textbooks. Secondary sources—miscellaneous publications. Making searches in the chemical literature. Library problems.

Note: Like the earlier edition of this reference book on the literature of chemistry, the present revision gives a comprehensive survey of all types of chemical information available and tells where they may be found, how to locate them, and how to use them. New lists of periodicals and books have been added, the library problem forms have been revised, and 1800 new assignments for these problems have been included.

SOULE, BYRON AVERY

Library guide for the chemist. New York: McGraw-Hill Book Company, Inc., 1938. 302 p. 21 cm. (International chemical series, J. F. Norris, consulting editor) \$2.75. 805

Contents: Preface. General references. Arrangement of a library. The card catalog. Biography. Periodicals. Abstract journals. Review and monograph series. Chemical dictionaries and encyclopedias. Inorganic chemistry. Organic chemistry. Analytical chemistry. Physical chemistry and physical constants. Patents. Patent literature. Government publications. Literature reports. Index.

Note: A guide to the literature of chemistry for all people specializing in the field, showing also how to use journals and reference books to find specific information. Several bibliographies are also included.

WEST, CLARENCE JAY, AND D. D. BEROLZHEIMER

Bibliography of bibliographies on chemistry and chemical technology. Second supplement, 1929–1931. Washington, D.C.: The National Research Council of the National Academy of Sciences, 1932. 150 p. 25 cm. (Bulletin of the National Research Council. No. 86, March, 1932) Paper, \$1.50. 806

Note: This bulletin is the second supplement to the *Bibliography of bibliographies on chemistry and chemical technology*, Washington, D.C., 1925, the first supplement having been published in 1929. Users of the present work are advised to consult these earlier publications, which have been issued as Bulletins no. 50 and 71, respectively, of the National Research Council. References in the present volume are listed under subject headings by author. There is a short list of personal bibliographies also. The bibliographies listed are mainly those accompanying technical papers published in American and foreign journals between 1929 and 1931. Total number of references included in each article is given. Textbooks, monographs, and other publications are also listed.

Dictionaries and Handbooks

GREGORY, THOMAS C., EDITOR

The condensed chemical dictionary; a reference volume for all requiring quick access to a large amount of essential data regarding chemicals, and other substances used in manufacturing and laboratory work, compiled and edited by the editorial staff of the Chemical Engineering Catalog, Francis M. Turner, editorial director. Third edition, completely revised and enlarged. New York: Reinhold Publishing Corporation, 1942. 756 p. illus. 23 cm. \$12.00. 807

Note: In the third edition of this dictionary about eighteen thousand chemicals are listed. The information given includes synonyms, properties, colors, constants, specific gravities, boiling points, melting points, solubilities, grades, uses, and kinds of containers in which they are customarily shipped in the United States. Although the volume is of considerable value to chemists, the treatise is designed primarily for exporters and importers, purchasing agents, and others outside the chemical profession who buy and sell or handle chemicals in commerce. The third edition includes new chemicals, including drugs, insecticides, petroleum products, and new manufacturers specifications.

HACKH, INGO WALDEMAR DACOBERT

Hackh's Chemical dictionary (American and British usage) containing the words generally used in chemistry, and many of the terms used in the related sciences of physics, astrophysics, mineralogy, pharmacy, agriculture, biology, medicine, engineering, etc.; based on recent chemical literature. Third edition, completely revised and edited by Julius Grant. Philadelphia: The Blakiston Company, 1944. 925 p. illus. 25 cm. \$12.00. 808

Note: This work contains in one alphabetical sequence definitions and descriptions of the various terms, processes, and methods of chemistry. Also included are descriptions of chemical apparatus and equipment, as well as brief biographies of important scientists. Graphical formulas for the hydrocarbons are given, together with many tables of other formula and analytical data. In this edition pronunciation has been omitted, but otherwise the work has been thoroughly revised and the number of terms expanded to over 57,000.

HANDBOOK OF CHEMISTRY AND PHYSICS; a ready reference book of chemical and physical data. Charles D. Hodgman, editor in chief. Twenty-seventh edition. Cleveland, O.: Chemical Rubber Publishing Company, 1944. 2589 p. 18 cm. \$4.00; foreign countries, \$4.50. 809

Contents (abridged): Mathematical tables. Properties and physical constants. General chemical tables. Specific gravity and properties of matter. Heat. Hygrometric and barometric tables. Sound. Electricity and magnetism. Light. Quantities and units. Miscellaneous. Index.

Note: An invaluable reference work for chemists, physicists, and librarians which gives the constants and formulae of chemistry and physics, plus mathematical and conversion tables needed for accurate computation. In this edition the sections on chemical elements and surface tension have been revised, while a list of fluorescent substances and a table of wave lengths for ultra-violet light have been added to the section on light.

LANGE, NORBERT ADOLPH, AND GORDON M. FORKER, COMPILERS

Handbook of chemistry, a reference volume for all requiring ready access to chemical and physical data used in laboratory work and manufacturing, compiled and edited by Norbert Adolph Lange, assisted by Gordon M. Forker with an appendix of mathematical tables and formulas by Richard Stevens Burington. Fifth edition revised and enlarged. Sandusky, O.: Handbook Publishers, Inc., 1944. 2112 p. illus. 20 cm. \$6.00. 810

Contents (abridged): A table of common hazardous chemicals. Physical constants of the elements. Properties of minerals. Physical constants of inorganic compounds. Physical constants of organic compounds. Composition and physical properties of alloys. Mechanical, physical and electrical properties of various plastics. Refractive index. X-ray tables. Density of aqueous solutions. Vapor pressures. Specific heat of elements, compounds and various substances. Heat of formation of compounds. A table of conversion factors. Mathematical appendix. Index.

Note: A valuable ready reference tool for chemists, physicists, and students. Numerical data on all phases of chemistry and closely allied topics are presented in tables. Six new tables have been added to this edition and thirteen more extended or rewritten. The most important change is the revision of the table of physical constants of organic compounds. There is a detailed index.

PATTERSON, AUSTIN McDOWELL

A German-English dictionary for chemists. Second edition. New York: John Wiley & Sons, Inc., 1935. 411 p. 18 cm. \$3.00. 811

Note: In this second edition the vocabulary has grown to 42,000 entries, besides the numerous additional meanings of old words. In order to save space the paragraph style has been adopted for entries beginning with the same word element, but the alphabetic order has not been disturbed. As in the first edition, words which have the same or practically the same spelling in both languages have been omitted unless for a special reason. Although a book of words employed primarily in chemistry, the book also contains a large number of words in the allied fields of physics, biology, geology, etc. Particularly has there been an increase in words dealing with atoms, electronics, coal, cellulose derivatives, and biochemical terms.

History

CHILD, ERNEST

The tools of the chemist; their ancestry and American evolution. New York: Reinhold Publishing Corporation, 1940. 220 p. illus. (part col.) 22 cm. \$3.50. 812

Contents: Part I: People and events in American chemistry. Part II: Ancestry and development of American chemical laboratory apparatus: Balances. Glassware. Porcelain ware. Silica ware. Filter paper. Heating apparatus. Metal laboratory ware. Platinum. Alundum. Rubber ware. Optical apparatus. Part III: Distributors of laboratory apparatus. Index.

Note: A brief study of the development of chemical apparatus in the United States, including a survey of the European environment from which it stemmed and references to those scientists who originated, designed, and made the apparatus. Written in non-technical style for the general reader, the book does not attempt to describe specialized equipment, nor does it discuss manufacturing methods in detail.

MOORE, FORRIS JEWETT

A history of chemistry. Revision prepared by William T. Hall. Third edition. New York: McGraw-Hill Book Company, Inc., 1939. 447 p. illus. 21 cm. (International chemical series; J. F. Norris, consulting editor) \$3.00. 813

Contents: Chemistry among the ancients. Chemistry in the Middle Ages. Alchemy. Chemistry in the Renaissance. Boyle and his contemporaries. The phlogiston theory. The later phlogistonists. The discovery of oxygen. Lavoisier. Law of definite proportions. Dalton and the atomic theory. The early history of galvanic electricity. Humphry Davy. Berzelius. The organizer of the science. The beginning of organic chemistry. The reaction against Berzelius. Gerhardt and the chemical reformation. Williamson. The transition from the type theory to the valence theory. The periodic law. Bunsen, Berthelot, Pasteur, and contemporaries. Organic chemistry since 1860. Index.

Note: A history of chemistry intended for the more mature student who is familiar with the important facts and principles of the science. The aim has been to emphasize only those facts and influences which have contributed to make the science what it is today, hence the chemical achievements of the ancients and the history of alchemy have been purposely compressed. Included in the text are biographical sketches of individual contributors, such as Paracelsus, Van Helmont, Cavendish, Dalton, and others. The third edition covers the advances from 1918 to 1939, with a discussion of the work of living chemists and a reappraisal of earlier achievements. New bibliographic material has also been added.

WEEKS, MARY ELVIRA

Discovery of the elements. Fourth edition enlarged and revised. Easton, Pa.: The Journal of Chemical Education, 1939. 470 p. illus. 24 cm. \$3.50. 813a

Contents (abridged): Elements known to the ancient world. Elements known to the alchemists. Some eighteenth-century metals. Three important gases. Chromium, molybdenum, tungsten, and uranium. Tellurium and selenium. Columbium, tantalum, and vanadium. The platinum metals. Three alkali metals: potassium, sodium, and lithium. The alkaline earth metals and magnesium and cadmium. Elements isolated with the aid of potassium and sodium. Some spectroscopic discoveries. The periodic system of the elements. Some elements predicted by Mendeléeff. The rare earth elements. The halogen family. The inert gases. The natural radioactive elements. Recently discovered elements. Chronology. Appendix. Index.

Note: The story of the discovery of the chemical elements told as a connected narrative in chronological order, based on a study of old chemical journals, biographical dictionaries, the personal letters of certain scientists, and original monographs. The material was first published as a series of articles in the *Journal of chemical education*. The style is non-technical throughout and the large number of photographs and drawings makes the book interesting to the lay reader as well as the student and chemist. The extensive literature cited at the end of each chapter has been brought up to date in the fourth edition, and 100 pages of new material has been added covering advances made in this field of study between 1935 and 1939.

Mathematics for Chemists

ARENSEN, SAUL BRYAN

Chemical arithmetic. Second edition. New York: John Wiley & Sons, Inc., 1941. 130 p. illus. 22 cm. \$1.50. 814

Contents: Introduction. Units and their conversion factors. Atomic and molecular weights. Gas laws. Weight and volume relationship. Normal solution. Balancing equations. Graphical representation. Logarithm tables. Index.

Note: The aim of the book is to provide a clear explanation of all the common types of calculations of general chemistry and much of the field of quantitative analysis. An excellent treatment of the methods of graphical representation is given. Over 450 carefully selected problems afford intensive drill work in the ap-

plication of principles. Stress is laid upon the application of common sense in the solution of problems rather than on the use of formulas. Answers are included to all problems; however, only the first three digits are given and the decimal point must be supplied. This edition has been extensively revised and the number of problems increased.

BABOR, JOSEPH ALBERT, AND CHESTER B. KREMER

How to solve problems in general chemistry. New York: Thomas Y. Crowell Company, 1941. 88 p. 21 cm. \$0.75. 815

Contents: Introduction. Primary units and scales; logarithms; and significant figures. Behavior of gases. Atomic and molecular weights. Formulas; and percentage composition. Chemical equations. Thermochemistry. Solutions. Oxidation-reduction. Electrochemistry. Appendices: Vapor pressure of water; table of logarithms; freezing mixtures. Answers to special exercises. Index.

Note: This text is designed for use in self-instruction by those who find difficulty with mathematical problems in general chemistry. For each type of calculation likely to be met, the authors first seek to help the student visualize the problem and then plan his approach to its solution. To this end, after a preliminary discussion in each case, typical problems are presented and their solutions outlined in detail, with the reasons for each step. Repetition, remedial drill, and review are employed throughout as pedagogical aids.

BABOR, JOSEPH ALBERT, AND GARRETT W. THIESSEN

How to solve problems in physical chemistry. New York: Thomas Y. Crowell Company, 1944. 215 p. 21 cm. (Crowell's "How to solve" series) \$1.25. 816

Contents: Gases. Pure liquids. The solid state. Properties of analytical value (optical). Additive and constitutive properties. Solutions. Solutions of electrolytes. Colloids. Thermochemistry. Homogeneous equilibrium. Heterogeneous equilibrium. Chemical kinetics. Thermodynamics. Electrochemistry. International atomic weights (1941). Logarithms. Antilogarithms.

Note: This text is designed for use in self-instruction by those who find difficulty with mathematical problems in physical chemistry. For each type of calculation likely to be met, the authors seek to help the student first to visualize the problem and then to plan his approach to its solution. To this end, after a preliminary discussion in each case, typical illustrative problems are presented and their solutions outlined in detail together with the reasons for each step. Because the proper selection of the equivalents of factors (for example, the gas constant or the pressure) in the correct units usually helps the student to visualize the problem, the dimensional method is constantly stressed to stimulate logical thinking rather than blind substitution in a derived equation.

CRUMPLER, THOMAS BIGELOW, AND JOHN H. YOE

Chemical computation and errors. New York: John Wiley & Sons, Inc., 1940. 247 p. illus. 23 cm. \$3.00. 817

Contents: Computation methods. Significant figures. Algebraic solution of numerical equations. Approximate methods of solving equations. Interpolation and extrapolation. Theory of measurements. Classification of errors. Statistical methods. Theory of errors. Statistical interpretation of measurements. Curve fitting. Appendix. Index.

Note: For chemists and other scientists who must deal with large masses of data, this book is an aid in the employment of mathematical formulations and the performance of numerical operations. The level of the book lies between the more advanced and the extremely elementary works. Many illustrative examples, based on chemical data and chemical principles, are worked out in detail. The descriptive sections have been made as full as possible, consistent with a book of this scope. A selected and classified bibliography is included in the appendix.

HITCHCOCK, FRANK LAUREN, AND CLARK SHOVE ROBINSON

Differential equations in applied chemistry.

Second edition. New York: John Wiley & Sons, Inc., 1936. 120 p. illus. 19 cm. \$1.50. 817a

Contents: Introduction. Processes of the first order. Processes of the second order. Simultaneous processes. Equations of flow. The numerical solution of differential equations. Miscellaneous problems. Index.

Note: The primary object of this pocket-size manual is to help students in chemistry and chemical engineering think more readily in terms of calculus as a professional tool. It assumes a good general knowledge of differential and integral calculus on the part of the student and does not attempt to review in any way his previous mathematical studies, but rather to lead him into new fields of application in differential equations. The problem lists have been revised and expanded in the second edition, with added emphasis on the study of actual experiments.

General and Inorganic Chemistry

ARTHUR, PAUL

Lecture demonstrations in general chemistry. New York: McGraw-Hill Book Company, Inc., 1939. 455 p. illus. 21 cm. (International chemical series; J. F. Norris, consulting editor) \$4.00. 818

Contents: A word to the lecturer. Lecture-room equipment. Chemical change; atomic and molecular theory. Gas laws; states of matter. Oxygen; ozone; hydrogen; water; and hydrogen peroxide. Solutions; colloids. Energy and chemical change; equilibria. Halogen family. Sulfur family. Atmosphere and its components. Atomic structure. Nitrogen family. Acids, bases, and salts; ionic theory. Carbon and its oxides; fire extinguishers. Silicon and boron. Metals and nonmetals. Electrochemistry. Alkali family. Alkaline earth family. Magnesium family. Copper and mercury. Aluminum. Noble metals. Manganese and chromium. Iron family. Tin and lead. Combustion; flames. Organic chemistry. Special apparatus.

Note: A laboratory manual for the lecture demonstrator that covers every phase of work normally shown in general chemistry. Full instructions are given for more than 1000 experiments, grouped under 175 topical headings. The instructions include quantities of reagents, size and type of apparatus, and method of handling the experiment in class to make it most readily visible to large groups.

BABOR, JOSEPH ALBERT, AND ALEXANDER LEHRMAN

General college chemistry. Second edition. New York: Thomas Y. Crowell Company, 1940. 659 p. illus. (part col.) 23 cm. \$3.75. 819

Contents (abridged): Introduction. The gaseous state. The atomic-molecular hypothesis. Atomic and molecular weights. Calculations. Energy changes in chemical reactions. Chemical equilibrium. Valence. The periodic law. Radium and radio-activity. Atomic structure. Hydrogen. Oxygen. Water and hydrogen peroxide. The solid state. Solutions and their properties. The atmosphere. The Arrhenius theory. Ionization. Acids and bases. The halogens and their compounds. Oxidation-reduction. The sulfur family. Compounds of nitrogen. Other elements of the nitrogen family. Carbon and oxides of carbon. Silicon. Colloidal chemistry. Metals and metallurgy. Iron, cobalt, nickel, and the platinum metals. Copper, silver, and gold. Metals in group II B. Boron and aluminum. The electro-chemical cell. Tin and lead. Metals of groups V, VI, and VII. Organic chemistry. Food and nutrition. Appendices: The metric system; temperatures centigrade and fahrenheit; vapor pressure of water; solubility products at 25°C.; freezing mixtures; bead tests; alloys; solubilities of some inorganic compounds in water at 18°C.; table of isotopes; logarithms. Index.

Note: This college textbook is intended primarily for students who have had a course in high school chemistry or physical science. This edition has been rewritten and improved on the basis of ten years' use of the original edition. The authors have carefully considered developments in the field of chemistry during this same period. The treatment stresses the experimental aspect of chemistry. The same authors have prepared *Laboratory manual for general college chemistry*, revised edition, New York: Thomas Y. Crowell Company, 1940, 289 p., \$1.75. For students who

have not necessarily studied high school chemistry they have written a text, *Introductory college chemistry*, New York: Thomas Y. Crowell Company, 1941, 662 p., \$3.50. For use with the latter text they have written *Laboratory manual for introductory college chemistry*, New York: Thomas Y. Crowell Company, 1941, 284 p., \$1.75. The authors have also prepared *Selected experiments from Laboratory manual for introductory college chemistry*, New York: Thomas Y. Crowell Company, 1944, 290 p., \$1.00, for use in accelerated courses. The same company publishes *Experimental general chemistry* by J. W. Neckers and others, 1942, 278 p., \$1.75, which may also be used with *General college chemistry* and with *Introductory college chemistry*.

BELCHER, JAMES ELMER, AND J. C. COLBERT

Properties and numerical relationships of the common elements and compounds. Third edition. New York: D. Appleton-Century Company, Incorporated, 1940. 350 p. illus. 27 cm. (The Century chemistry series; James Kendall, editor) Paper, \$2.40. 820

Contents (abridged): Part I, Experiments and problems for college chemistry. Part II, Outline of work covered in Chemistry I. Part III, Chemical arithmetic. Part IV, Properties of the common elements and related compounds. Part V, Elementary qualitative analysis. Appendix: Tables.

Note: A loose-leaf, perforated-page laboratory manual, based upon the following three college textbooks by Alexander Smith and James Kendall: *Smith's college chemistry*, New York, 1935 (see Index); *Smith's introductory college chemistry*, New York, 1938 (see Index); and *General chemistry*, revised edition, New York: D. Appleton-Century Company, 1936 (see Index). A feature of the manual is the section on chemical arithmetic which gives typical solutions of all the problems encountered in first-year chemistry. Intended for the beginning student in introductory college courses. There are 69 experiments presented in the third edition.

BOGERT, LOTTA JEAN

Fundamentals of chemistry. Fifth edition, thoroughly revised. Philadelphia: W. B. Saunders Company, 1941. 528 p. illus. 20 cm. \$3.00. 821

Contents: Fundamental facts regarding science, energy and matter. Chemical elements and the atomic theory. Chemical compounds and the law of definite proportions. Valence and chemical formulas. Chemical equations. Classification of compounds and some discussion of acids, bases, and salts. System of naming compounds. Chemical changes. Energy changes. Inorganic chemistry: Oxygen and hydrogen: combustion, oxidation and reduction. Nitrogen, air, and water. Solutions. Ionization: further discussion of acids, bases and salts. Halogens and other nonmetals. Uses of inorganic salts in the body. Organic chemistry: Introduction. Hydrocarbons and halogen derivatives. Ethers, alcohols, aldehydes, and ketones. Organic acids and salts, esters, amines, and amino acids. Cyclic compounds. Physiological chemistry: Carbohydrates. Fats and related substances. Proteins and amino acids. Vitamins. Digestion and digestive fluids. Transportation: blood and lymph. Metabolism: endocrine glands and their hormones. Urine and feces. Appendix. Index.

Note: This text was designed to meet the needs of vocational schools, junior colleges and professional schools such as those of home economics, nursing, and medicine. It constitutes a "survey course"—one that covers the chemical principles fundamental to all substances, together with a study of the simpler and more common compounds in the fields of inorganic, organic and physiological chemistry. The emphasis is divided approximately as follows: Introductory and general material, 22 per cent; Inorganic, 26 per cent; Organic, 17 per cent; Physiological, 35 per cent. In the fifth edition, the treatment of organic compounds has been expanded from one to five chapters. Chapters have been added on hydrocarbons and halogen derivatives; aldehydes, ketones, and ethers; organic acids and salts, esters; and cyclic compounds. The chapter on vitamins has been entirely rewritten.

BRINKLEY, STUART ROBERT

Introductory general chemistry. Revised edition. New York: The Macmillan Company, 1938. 731 p. illus. (part col.) 22 cm. \$3.50. 822

Contents (abridged): Substances and changes which they undergo. State of matter, the kinetic theory. The atomic theory, symbols, formulas. Types of common substances. Solutions. The halogens, a family of active non-metals. The alkali metals, a group of active metals. The periodic system. Atomic structure. Electrolysis—the displacement of ions. Conditions affecting equilibrium, nitrogen fixation. Ammonia. Oxidation-reduction, the oxy-acids of the halogens, hydrogen peroxide. Sulfur, sulfuric acid. Carbon, silicon, boron. The colloidal state of dispersion. Basic substances, amphoterism. Salts, properties and general reactions. Analytical separation of the metal ions. The alkaline earth metals. Aluminum. Iron, cobalt, nickel. Electrical energy from chemical reactions. Fuels. Hydrocarbons. Some derivatives of the hydrocarbons. Problems. Appendix. Index.

Note: A short textbook for college students who are beginning the study of the subject. New material added in this substantially enlarged edition includes matter on ionization, acids and bases, solubility product principle, the common ion effect, and complex ion formation. A laboratory manual by H. G. Dietrich and E. B. Kelsey, *Laboratory manual to accompany Introductory general chemistry*, revised edition, New York: The Macmillan Company, 1938, 118 p., \$1.90, is designed for use with this text.

BRINKLEY, STUART ROBERT

Principles of general chemistry. Third edition. New York: The Macmillan Company, 1941. 703 p. illus. (part col.) 24 cm. \$4.00. 823

Contents (abridged): Varieties of matter. The atomic theory. The kinetic theory. Oxygen. Hydrogen. Equations. Calculations. Classification of the elements. Atomic structures. The alkali metals and the halogens. Chemical equilibrium. Solutions. The colloidal state. Ionization. Acids. Bases. Hydrolysis. The hydroacids. Oxidation-reduction. The oxyacids and oxides of nitrogen. The oxyacids and oxides of sulfur. Selenium and tellurium. The phosphorus family. Boron and aluminum. The alkaline earth metals. Production of the metals from ores. Iron and steel. The transition elements. The nitrates. The halides, cyanides and sulfides. The sulfates, phosphates, arsenites and arsenates. The carbonates, silicates and borates. Compounds of chromium and manganese. Electric cells. The nucleus of the atom. The hydrocarbons. Appendix. Index.

Note: A general text for college students who have had a high-school course in chemistry and are interested in the subject. In this edition the material in the first part of the volume has been rearranged, and the theoretical topics have been brought up to date. Exercises and supplementary readings are given at the end of each chapter, while the problems have been brought together at the end of the book. A laboratory manual written by E. B. Kelsey and H. G. Dietrich, *Laboratory manual to accompany Principles of general chemistry*, revised, New York: The Macmillan Company, 1933, 206 p., \$1.75, is designed for use with this text.

BRISCOE, HERMAN THOMPSON

General chemistry for colleges. Third edition. Boston: Houghton Mifflin Company, 1943. 936 p. illus. 24 cm. \$4.25. 824

Contents (abridged): Matter and energy. The laws of chemical change. The atomic theory of today. Oxidation and combustion. The gas laws and the kinetic molecular theory. Molecules and molecular weights. Atomic weights and combining capacity. Symbols, formulas, and equations. General classification of compounds. Classification of the elements. Radioactivity. The structure of the atom. The electron theory of valence. Covalence: oxidation and reduction. The oxides and other simple compounds of carbon. The atmosphere. Solutions. The halogens. The alkali metals. Ionization. Chemical equilibrium. Nitrogen and ammonia. The sulfur family. Silicon and related elements. The colloidal state. Organic chemistry—the hydrocarbons. Carbohydrates and proteins. Energy in chemical change. The metals. Appendix: Vapor pressure of water at different temperatures. Solubility. Four-place logarithms of numbers. Index.

Note: A comprehensive introductory text for college use. Equations are written in ionic form. The modern theories of acids, bases, and salts are included. New industrial developments in plastics, textiles, synthetic rubber, and new drugs are described. In this third edition, the subject matter is brought up to date, and new exercises, illustrations, and references for further reading have been added. The author and others have written for use with this text *A laboratory manual of general chemistry*, Boston: Houghton Mifflin Company, 1936, 268 p., \$1.90.

BRISCOE, HERMAN THOMPSON

The structure and properties of matter. New

York: McGraw-Hill Book Co., Inc., 1935. 420 p. illus. 21 cm. (International chemical series, J. F. Norris, consulting editor) \$3.75. 825

Contents: The early history of the atomic concept. The atomic-molecular hypothesis of the nineteenth century. The periodic classification of the elements. Radioactivity and the radioactive elements. The electron. Protons and other positive particles. The atomic nucleus and the determination of nuclear charge. The structure of crystals. The structure of the atom; the octet theory. Radiation. The structure of the atom; the Bohr theory and the origin of spectral lines. The distribution of electrons about the nucleus. Valence. The new quantum mechanics.

Note: An introduction to modern physics presenting the subject from the point of view of chemistry and for chemists. The book uses the discoveries and theories concerning the structure of matter in explaining the properties and chemical behavior of matter in its different forms. There are chapter bibliographies.

CARTLEDGE, GROVES HOWARD

Introduction to inorganic chemistry. Boston: Ginn and Company, 1935. 609 p. illus. 21 cm. \$3.60. 826

Contents: The science of chemistry. Chemical composition. Atoms and elements. Atomic structure and chemical changes. Mass relations in chemical change. Sodium and chlorine. Solutions. Magnesium and aluminum. Silicon. Phosphorus. Sulfur. The oxidized states of chlorine. Chemical equilibrium. The periodic system. The nitrogen family. Hydrogen and its compounds. Oxygen and related substances. The halogen family. Carbon and boron. Elements of the alkalis and alkaline earths. The transition elements. The metals of the *b* families. Metals and metallurgical processes. The sulfuric acid and alkali industries. Appendix (tables and answers). Subject index. Table of the chemical elements.

Note: A beginning course for college classes. It introduces early an intensive study of the elements from sodium to chlorine in the third period of the periodic system, and continues with a study of the remaining elements in the third period in the order of increasing complexities.

CHAPIN, WILLIAM HENRY

Second year college chemistry. Fifth edition, revised by Luke E. Steiner. New York: John Wiley & Sons, Inc., 1943. 575 p. illus. 22 cm. \$3.75. 826a

Contents: The structure of matter. The gas laws. Liquids and their relation with gases. Solids and their relations with gases and liquids. The quantitative laws of chemical combination. Atoms and molecules and their weights. Formulas and equations and chemical calculations. Valence and the chemical bond. The periodic system. Rays from vacuum tubes. Radioactivity. Atomic structure and valence. Atomic transmutations. Solutions and solubility. Laws of solutions. Solvent properties. Acids, bases, and salts. Homogeneous equilibrium. Neutralization indicators and acid-alkali titrations. Heterogeneous equilibrium. Colloids. Electrochemistry. Appendix. Index.

Note: A basic textbook for a second-year inorganic chemistry course. It serves as a guide for a review of, and an expansion of, general principles. Liquids and solutions are discussed more fully and exactly in the fifth edition, and there is a new chapter on crystalline solids which serves as an introduction to structural chemistry.

DEMING, HORACE GROVE

General chemistry; an elementary survey emphasizing industrial applications of fundamental principles. Fifth edition, rewritten and revised. New York: John Wiley & Sons, Inc., 1944. 706 p. illus. 21 cm. \$3.75. 827

Contents (abridged): What chemistry is about. Some general characteristics of matter. The laws of chemical change. Symbols, formulas, and equations. Oxygen. A study of combustion; flame welding. General properties of gases. The atmosphere. Water. General properties of liquids. The elements. Electrons and radiant energy. Within the atom. Radioactivity; nuclear transformations. Hydrogen. Acids. Bases and salts. Titration, equivalents, normal solutions. Hydrogen ion concentration. Chlorine and its compounds. Oxidation and reduction. The halogens. Sulfur and hydrogen sulfide. Oxides of sulfur; sulfuric acid. Industries based

on sulfur and salt. Nitrogen, ammonia, and ammonium salts. Oxides of nitrogen; nitric acid. The nitrogen family. Reaction rate. Chemical equilibrium. More about solutions. Precipitation. Water softening and conditioning. The colloidal state of matter. Solids. Carbon, fuels, simplest compounds of carbon. The hydrocarbons. Alcohols, esters, carbohydrates. Explosives, cellulose products, plastics. Elastomers, dye-stuffs, medicinals. Industries based on magnesite, gypsum and limestone. Cement and concrete. The ceramic industries. The silicate industries. Light metals and their alloys.

Note: An elementary survey of the subject, somewhat briefer but giving more attention to the applications of chemistry to modern industry than the author's *Fundamental chemistry* (New York: John Wiley & Sons, Inc., 1940). A discussion of the principles of electrochemistry is an important feature. The book affords a clear presentation of chemical principles as well as a summary of the chief chemical industries and the outstanding industrial materials, such as fuels, plastics, portland cement, light metal alloys, and electrochemical products. In addition to the chapters shown in the foregoing abridged table of contents, there are chapters on iron and steel, including material on corrosion, transition metals, post-transition metals, and the chapter already mentioned on electrochemistry. The author and S. B. Aronson have written for use with this textbook *Exercises in general chemistry and qualitative analysis*, fourth edition, New York: John Wiley & Sons, Inc., 1935, 326 p., \$1.80.

DORSEY, NOAH ERNEST

Properties of ordinary water-substance in all its phases: water-vapor, water, and all the ices. New York: Reinhold Publishing Corporation, 1940. 673 p. illus. 23 cm. (American Chemical Society monograph series. No. 81) \$15.00. 828

Contents (abridged): Introduction. Synthesis and dissociation. Single-phase systems: Water-vapor. Water. Ice. Multiple-phase systems. Phase transition. Miscellanea. Index.

Note: A compilation of thermodynamic, physical, and descriptive data concerning water-substance. The available information on the subject is collected and critically evaluated, with special emphasis on the data published in the International Critical Tables. Copious tables of data, gathered by many observers, accompany the discussions.

DYER, WALTER SHERMAN

A practical survey of chemistry. New York: Henry Holt and Company, Inc., 1941. 480 p. illus. 22 cm. (American general education series, edited by M. S. MacLean) \$2.80. 829

Contents: Introduction. The background of chemistry. The atmosphere: physical properties. The atmosphere: its components. Water: its composition, atomic theory, units of measure. Water: liquids and solids. Water: the universal solvent. Water: solutions of electrolytes, ionization. Water purification. Salt—classification of the elements. Classification of the elements (continued); modern atomic theory; radioactivity. Salt: products of electrolysis. Sand, ceramics, cement. Sulfur. Explosives, fertilizers, nitric acid, ammonia. Metals. Fuels: products of combustion. Fuels: their utilization. The hydrocarbons. Derivatives of the hydrocarbons. Fats; soap; synthetic resins. Carbohydrates; proteins; digestion. Vitamins; hormones; drugs. Research—mother of progress. Index.

Note: A survey of chemistry for "non-professional" students who do not plan to specialize in the subject. This book skillfully spans the breach between theory and practical applications and provides a sound, straight-forward presentation of the principles of chemistry for the cultural course. Written simply and in an interesting style, it furnishes the chemical knowledge needed by the average citizen.

ELDER, ALBERT LAWRENCE

Textbook of chemistry. New York: Harper & Brothers, 1941. 751 p. illus. (part col.) 24 cm. \$4.00. 831

Contents: States of matter. The composition of matter. Methods used in the discovery of the elements. Composition of crystals, molecules, and atoms. Arrangement of the fundamental units of matter in the atom. The nucleus of the atom. Crystal structure and the arrangement of atoms in molecules. Types of chemical reactions. Naming of compounds; nomenclature. Properties of gases. Properties of liquids and solids. Oxygen. Properties of peroxides. Hydrogen. Solutions. Electricity as a tool of the chemist. Properties of ions. Chemical equilibrium. The atmos-

phere. Water—its purification and uses. Colloids. Alkali metals and halogens and their compounds. Products of the salt industry. Sulfur, selenium, and tellurium. Nitrogen and its compounds. Phosphorus and its compounds. Arsenic, antimony, and bismuth. Silicon and its compounds. Boron and its compounds. Characteristics of the metals. The alkaline earth metals; aluminum. Zinc, cadmium, mercury, tin, and lead. Copper. Silver and gold. The platinum metals. Iron. Metals used in the steel industry. The less familiar metals. The radioactive metals. Carbon and its compounds. Appendix. Index.

Note: A comprehensive presentation of the subject matter of general chemistry. The order of development of topics has been planned to insure a sound grasp of the subject. For example, the first 18 chapters develop the concepts of physical chemistry, and the treatment of new compounds is delayed until the student is ready for them. Types of compounds and their naming are considered fully. Properties of gases are treated in detail. The peroxides are treated with unusual fullness. Electricity as a tool of the chemist is approached from a new angle. Problems are provided at the ends of chapters.

FOSTER, WILLIAM, AND HUBERT N. ALYEA

An introduction to general chemistry. Second edition. New York: D. Van Nostrand Company, Inc., 1941. 790 p. illus. (part col.) 22 cm. \$3.75. 882

Contents (abridged): Part I, Introduction: Historical introduction. Atoms and molecules. Symbols and formulas. Changes in matter. Writing of equations. Practice in chemical shorthand. Part II, Introduction to physical chemistry: Fundamental chemical laws. Chemical arithmetic. Determination of atomic and molecular weights. Metals and non-metals. Common table salt. Hydroxides. Acids. Salts. Solutions. Ionization. Energy and chemical change, equilibrium. Oxidation and reduction. Acids and bases. Atomic structure: Phenomena connected with the nucleus. Phenomena connected with the planetary electrons. Part III, Inorganic chemistry: Classification of the elements. The alkali metals. The copper group. The alkaline earth metals. The zinc group. The rare earths, the aluminum family. Chromium and manganese. Iron and steel. The iron group. The platinum metals. Boron and silicon. Carbon and its oxides. Carbides. Cyanides. Nitrogen and ammonia. Oxides and acids of nitrogen. The nitrogen family. The sulfur family. Hydrogen sulfide. Oxides and oxy-acids of sulfur. The halogen family. Appendix. Index.

Note: This text is designed for full-year courses in general chemistry. It covers the science of chemistry from its historical beginnings, and the elementary principles up to many of the more recent discoveries. These relatively advanced topics include the role of energy in chemical reactions, the Pauli exclusion principle, the proton transfer concept, and others.

FRANKLIN, EDWARD CURTIS

The nitrogen system of compounds. New York: Reinhold Publishing Corporation, 1935. 339 p. illus. 23 cm. (American Chemical Society monograph series. No. 68) \$7.50. 834

Contents (abridged): Liquid ammonia. The nitrogen system of bases, acids and salts. Nomenclature. Ammono bases and basic nitrides. Alkali metal salts of amphoteric amides and imides. Ammonobasic salts. Mercury nitrogen compounds. Ammono carbonic acids. Ammono carbonous acid. Nitrogen compounds of silicon, titanium, germanium, zirconium, tin and thorium. Hydrazoic acid. Aquo-ammono nitric acid. Ammono and aquo-ammono phosphoric and phosphorous acids. Aquo-ammono sulfuric acids. Ammono sulfurous acid, aquo-ammono sulfurous acid, ammonothio sulfuric acid and sulfazylic acid. Ammono hypochlorous acids. Acid anammonides. Acid anhydride-anammonides. Acid chlorides. Hydrogen peroxide, hydrazine and hydroxylamine. Ammono alcohols. Ammono aldehyde-alcohols, ammono aldehyde-ethers, ammono aldehyde-acetals and ammono aldehyde-esters. Ammono ketone-alcohols and ammono ketone-ethers. Carbazylic acids. Carboxazylic acids. Hydrocyanic acid and the nitriles. Ammono nitrous acid and aquo-ammono nitrous acid. Nitrous acid hydrazides and oximes. Aquo-ammono sulfonic acids. Appendix. Author index. Subject index.

Note: A specialized survey for chemists of nitrogen compounds considered as a system analogous to the system of oxygen compounds. The behavior and properties of the various types of nitrogen and ammonium compounds are described briefly and frequent comparisons are made to the behavior and properties of oxygen compounds. There are numerous bibliographical footnotes to the literature.

HATCHER, WILLIAM HOOKER

An introduction to chemical science. New York: John Wiley & Sons, Inc., 1940. 423 p. illus. 22 cm. \$3.00. 834a

Contents (abridged): Inorganic chemistry: In the beginning. The chemist's stock in trade. The composition of water. The atmosphere we breathe. Carbon. Chemical longhand and shorthand. Gases. Halogens. Some common oxidizing agents. Sulfur and its compounds. Metals and nonmetals. Liquids and solutions. Nitrogen and phosphorus. An atom—what is it? The periodic classification of the elements. What is a chemical reaction? Colloids. Carbon—oxygen—life. The chemistry of living things. Organic chemistry: The first steps. Pictures from the paraffins. Common aliphatic compounds. Cyclic and aromatic compounds. Organic nitrogen. The carbohydrates. Fats and oils—soap—paint. Explosives—antiseptics—dyes. Food chemistry: Foods and their values. Digestion and assimilation. Industrial chemistry: Raw materials and their sources. Reduction, double decomposition, addition, ceramics. Catalysis, electrolysis, organic processes. The cellulose industries. Power. Index.

Note: A survey stressing economic features and applications to modern life, this book is intended for use in a nonspecialist course for liberal art students.

HILDEBRAND, JOEL HENRY

Principles of chemistry. Fourth edition. New York: The Macmillan Company, 1940. 359 p. illus. 22 cm. \$2.50. 885 1932

Contents: Kinds of matter. Weight relations in chemical reactions—atoms and molecules. The kinetic theory. Molecular weights. The relation of chemical and physical behavior to atomic structure. Concentration, acidimetry and alkalimetry. Thermochemistry. Electrolytic dissociation. Combining proportions. Chemical nomenclature. The speed of chemical reactions. Chemical equilibrium—the effect of concentration. Types of equilibria. The effect of pressure and temperature upon equilibrium. Oxidation and reduction. The constitution of the atom. The periodic system of elements. Molecular structure. Dispersed systems. Solubility. Index.

Note: A rigorous textbook for college students of general or inorganic chemistry. This edition contains new chapters on the constitution of the atom and the relation of chemical and physical behavior to atomic structure, a new chapter on solubility and new sections on other systems of acids and bases, and the role of activation in determining reaction velocities. The terms "oxidation number" and "coordination number" have been substituted throughout for "valence". Companion volumes are W. C. Bray and W. M. Latimer, *A course in general chemistry*, third edition, New York: The Macmillan Company, 1940, 206 p., \$1.75; and W. M. Latimer and J. H. Hildebrand, *Reference book of inorganic chemistry*, revised edition, New York, 1940 (see Index).

HILL, DOUGLAS GREENWOOD, AND OTHERS

Elementary chemistry, by Douglas G. Hill, John H. Saylor, Warren C. Vosburgh and Robert N. Wilson. New York: Henry Holt and Company, 1937. 473 p. illus. 22 cm. \$2.80. 836

Contents: International atomic weights. Chemical and physical change; classification of materials. Air and water. The kinetic theory and the gas laws. Molecules and atoms; molecular and atomic weights. Hydrogen; valence. Oxygen; chemical equations. Chlorine and the halogen family; the structure of atoms and molecules. Salts; the halogen acids. The metals. The periodic table and atomic structure. Nitrogen and ammonia; chemical equilibrium. The oxides and acids of nitrogen; the nitrogen family; phosphorus. Sulfur and some of its compounds. Solutions. Inorganic carbon compounds. Organic chemistry: hydrocarbons and alcohols; fuels and the chemistry of flames; petroleum. Organic chemistry: aldehydes, ketones, acids, esters, ethers, and amines. Organic chemistry: benzene and its derivatives. Organic chemistry: carbohydrates, plastics, and food materials. Solutions of electrolytes. Copper, silver, and gold. The law of mass action and chemical equilibrium; weak electrolytes. The alkali and alkaline earth metals. Zinc, cadmium, mercury, beryllium and magnesium. Reactions of electrolytes. Boron, aluminum, silicon, tin, lead. Electrochemistry. Arsenic, antimony, bismuth, chromium, and manganese. The colloidal state. Iron, cobalt, and nickel. Glossary. Index. Periodic table (Mendeleeff).

Note: A relatively brief college text. Consistent with advancing thought in physical chemistry, the book presents the modern electrolyte theory in simple terms and makes use of the modern

theory of atomic structure. Where modern terminology is used, the authors are careful to explain the classical definitions.

HOLMES, HARRY NICHOLLS

General chemistry. Fourth edition. New York: The Macmillan Company, 1941. 720 p. illus. (part col.) 24 cm. \$3.75. 837

Contents (abridged): The atomic theory. Symbols, formulas and equations. Oxygen and ozone. Gases, liquids, and solids. Hydrogen. Valence. Water and hydrogen peroxide. Carbon and its oxides. Molecular and atomic weights. Solutions. Chlorine, bromine, iodine, and fluorine. The simple halogen acids. Ions and electrolysis. Ionic reactions. Acids, bases, and salts. Equilibrium. Sulfur and hydrogen sulfide. Sulfuric acid. The periodic system. Atomic numbers. Structure of the atom. Radioactivity. Nuclear chemistry. The argon family. Nitrogen and ammonia. Nitrogen fixation and plant food. Phosphorus, arsenic, antimony and bismuth. The aliphatic hydrocarbons. Rubber. The aromatic hydrocarbons. Fuels. Alcohols, acids, fats, and soaps. The carbohydrates. Cellulose and its esters. Dyeing. Plastics. Foods and nutrition. Silicon and boron. Glass. Colloid chemistry. Preparation of the metals. Properties and uses of the metals. Alloys. Improvements on the metals. Electrochemistry. Compounds of the metals. Strategic raw materials. Radiatron chemistry. Appendix. Index.

Note: An elementary chemistry textbook for beginning college students. The basic topics in inorganic and organic chemistry are treated. References are given at the end of most chapters. The author has also written *Laboratory manual of general chemistry*, New York: Macmillan and Co., 1930, 156 p., \$1.75, which is intended to be used with this textbook; and *Introductory college chemistry*, third edition, New York: The Macmillan Company, 1939, 619 p., \$3.50, which is a somewhat shorter and less difficult textbook.

HOPKINS, B. SMITH

General chemistry for colleges. Third edition. Boston: D. C. Heath and Company, 1942. 758 p. illus. 23 cm. \$3.80. 838

Contents: Fundamental concepts. Structure of atoms. The periodic system. Oxygen; ozone. Measurements; gas laws; kinetic theory. Hydrogen. Valence; nomenclature. Water; hydrogen peroxide. Solutions. Colloids. Gas volumes; atomic weights. Chlorine. Hydrogen chloride; hydrochloric acid. Oxygen compounds of chlorine. Electrochemistry. Sodium; acids, bases, salts; ionization. Bromine, iodine, fluorine. Nitrogen and the atmosphere. Compounds of nitrogen. Sulfur; hydrogen sulfide. Oxygen compounds of sulfur. Phosphorus and its compounds. Arsenic, antimony, bismuth. Silicon and boron. Carbon; its oxides, sulfide and chloride. Compounds of carbon and hydrogen; fuels and flame. Derivatives of the hydrocarbons. The metallic elements. The alkali metals. Copper, silver, gold. The alkaline earth metals. Beryllium, magnesium, zinc, cadmium, mercury. The aluminum family. Tin and lead. Chromium and related elements. Manganese. Iron, cobalt, nickel. The platinum metals. Appendix. Index.

Note: This text for a first college course assumes a desire on the part of the student to do as much as he can for himself in arriving at a thorough understanding of chemical principles. Frequent cross references aid in developing power to reason from a known fact to an analogous setting and numerous exercises enable the student to test and prove his comprehension. References for additional reading at the end of each chapter cite books and magazine articles with a bearing on the application of chemistry in our complex modern life. This edition differs from the preceding edition in: improved sequence, a broader view of the application of chemistry, incorporation of latest available production data, including those for metals important in national defense, and new illustrations. A companion laboratory manual for this edition written by the same author and others is *Laboratory exercises and problems in general chemistry*, Boston: D. C. Heath and Company, 1942, 208 p., \$1.60.

KENDALL, JAMES

General chemistry; a cultural course based upon the texts of the late Alexander Smith. Revised edition. New York: D. Appleton-Century Company, Incorporated, 1936. 691 p. illus. 21 cm. \$3.75. 839

Note: This textbook is designed to teach the important basic theories of chemistry and to present their significance in daily life. It is especially suitable for students who intend to take only

one course in the subject. On the theory that the cultural aspect of chemistry is important to all, Professor Kendall suggests its use in first courses even for students who plan to specialize in chemistry. The treatment places emphasis upon such matters as the atomic theory, crystal structure, valence and atomic structure, chemical equilibrium and ionization, and avoids more technical topics such as the balancing of complex equations. A laboratory manual by W. F. Ehret entitled *Laboratory studies in general chemistry*, New York: D. Appleton-Century Company, 1933 (The Century chemistry series, J. Kendall, editor), \$1.80, follows the general outline of this textbook.

KHARASCH, NORMAN, AND HELEN S. MACKENZIE

Essentials of college chemistry. New York: D. Van Nostrand Company, Inc., 1942. 513 p. illus. 23 cm. \$3.50. 840

Contents: Introduction. The states of matter (gases—liquids—solids—solution). Atoms—molecules—chemical changes. Oxygen and combustion—hydrogen and reduction. The velocity of chemical reactions. The inert gas group. The periodic classification of the elements. The structure of atoms and molecules. The theory of ionization. The halogen family. Sulfur and sulfur compounds. The atmosphere. Nitrogen and the fifth main group of elements. Electrochemistry. The colloidal condition. The metallic condition. Outline of the metallic elements. Carbon and the oxides of carbon. Introduction to organic chemistry. The ceramic industries. Appendix. Index.

Note: This elementary college textbook has been prepared for short courses, taken by students who have not studied chemistry before. The experimental approach is emphasized—that is, the key facts are presented first, followed by the principles which have been derived from them, and then by applications of the principles and laws.

LATIMER, WENDELL MITCHELL, AND JOEL H. HILDEBRAND

Reference book of inorganic chemistry. Revised edition. New York: The Macmillan Company, 1940. 563 p. illus. 22 cm. \$4.00. 841

Contents: Hydrogen. Inert gases—helium, neon, argon, krypton, xenon, radon. Oxygen. Alkali metals. Alkaline earth metals. Boron, aluminum. Copper, silver, and gold. Zinc, cadmium, and mercury. Gallium, indium, and thallium. The halogens—fluorine, chlorine, bromine, iodine. N, P, As, Sb, Bi. Sulfur, selenium, and tellurium, carbon, silicon. Titanium, zirconium, hafnium, thorium, and germanium, tin, lead. Vanadium, columbium, tantalum. Chromium, molybdenum, tungsten, uranium. Manganese and rhodium iron, cobalt, and nickel. Platinum and palladium metals. Scandium, yttrium, and the rare earth elements. The radioactive elements. Glossary. Appendixes. Index. Periodic table. Atomic weights.

Note: This work gives for each element or family of elements such information as electron structure, properties, natural occurrence, preparation, uses, and important compounds. The appendixes contain useful tables. The book is intended as a supplementary volume to J. H. Hildebrand, *Principles of chemistry*, fourth edition, New York, 1940 (see Index) and as a reference tool in inorganic chemistry.

LONG, JAMES SCOTT, AND H. V. ANDERSON

Chemical calculations. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1940. 266 p. illus. 21 cm. (International chemical series, J. F. Norris and L. P. Hammett, consulting editors) \$1.75. 842

Contents (abridged): Measures and weights. Conversion of temperature. Absolute zero. Absolute temperature density. Specific gravity. Interrelation of temperature, pressure and volume of gases. Vapor pressure of water. Correction for difference in levels. The law of definite proportions. Dalton's atomic theory. Modern theory of atomic structures. The law of multiple proportions. Guy-Lussac's law of volumes. Law of Avogadro. Gram-molecular volume. Molecular-weight determinations. Boiling-point and freezing-point methods. Derivation of empirical and molecular formulas. Chemical equations of reactions. Oxidation-reduction. Oxidizers. Reducers. Method of balancing oxidation-reduction equations. Combining weights. Chemical equivalents of acids, bases, salts, oxidizers. Molar and normal solutions. Volumetric analysis. Gas analysis. Calorific power. Electrolysis. Chemi-

cal equilibrium. Law of mass action. Common ion effect. Significance of pH. Solubility. Hydrolysis.

Note: A textbook designed for use in freshman college courses. It outlines the methods of chemical calculations by means of numerous problems and exercises, as well as by illustrative examples throughout the text. Emphasis is upon the physical concepts rather than the mathematical formula. The fourth edition consists of a rearrangement of subject matter and additional material covering advances in chemical knowledge between the years 1924 and 1940.

MCCUTCHEON, THOMAS POTTER, AND OTHERS

General chemistry, theoretical and descriptive, by Thomas P. McCutcheon, Harry Seltz, and J. C. Warner. Third edition. New York: D. Van Nostrand Company, Inc., 1939. 685 p. illus. 22 cm. \$3.75. 844

Contents: Part I, Chemical principles and theories: Introduction. Classification and structure of matter. The gaseous, liquid and solid states. Atomic and molecular weights. Weight and volume relations in chemical reactions. Valence, equations, nomenclature. Energy relations in physical and chemical changes. The modern atomic theory. Solutions. Solutions of electrolytes. Reaction velocity—equilibrium—law of mass action. Application of the mass action law to the dissociation of electrolytes. Dissociation of water—hydrolysis. Standard solutions—volumetric analysis. Precipitates—solubility product. Electrochemistry, primary cells, storage cells, electrolysis. Disperse systems—colloidal solutions—suspensions and emulsions. Part II, Acids, bases. Salts. Oxygen. Hydrogen. Water. Ozone and hydrogen peroxide. The halogens and compounds. Sulphur and compounds—selenium, tellurium. Valence, equations, nomenclature. Nitrogen and compounds. Phosphorus and compounds. The zero group of elements. Preparation of metals and metallic compounds.

Note: This textbook is designed for very thorough college courses in general chemistry. It is arranged in two parts. The basic principles of the science are taught first, in a logical development which includes considerable physical chemistry. Then the second part of the book presents the descriptive portion of chemistry, that deals with the properties and reactions of the various elements, and the industrial and scientific applications of this knowledge.

MCPHERSON, WILLIAM, AND OTHERS

Chemistry, a textbook for colleges, by William McPherson, William Edwards Henderson, W. Conard Ferneliuss, and Edward Mack, Jr. Boston: Ginn and Company, 1940. 762 p. illus. (part col.) 24 cm. \$4.00. 845

Contents (abridged): The adventure of modern science. Chapters on matter, energy, atomic weights and gram-molecular weights, gases. A treatment of oxygen and hydrogen. The states of matter and their transitions. The atmosphere. Water, oxides and the earth's crust. Laws of chemical combination; atomic weights; equations. Atomic number; the periodic law; isotopes; radioactivity. The structure of the atom. Solutions and ionization in solutions. The chemistry of common salt. Chapters on chlorine, sulfur, nitrogen, silicon, carbon, hydrocarbons, carbohydrates, organic acids, metals and their compounds. Electrochemistry. The very active metals, some less active metals. The ceramic industry. The iron family. Tin, lead, and related metals. Chemistry in agriculture. Metallo-acid elements. Gold and platinum. Appendix—chemical library, tables. Index. Periodic table. Table of elements.

Note: In this introductory college course the study of chemistry is introduced through a discussion of the particle nature of matter. This provides an easy approach to the concepts of atoms, molecules, ions, and electrons; a logical introduction to atomic weights and chemical symbols; and a simplification of chemical arithmetic. An early chapter on oxides makes it easy to refer to acids, bases, and salts without developing their theoretical character at the very outset. Later these subjects are fully developed around the chemistry of common salt (sodium chloride) and the acids and bases derived from it. A group treatment of metals is used. The companion laboratory manual is A. B. Garrett and others, *Introductory chemistry for the laboratory*, revised edition, Boston: Ginn and Company, 1944, 240 p., \$1.60.

MCPHERSON, WILLIAM, AND OTHERS

Introduction to college chemistry, by William McPherson, William Edwards Henderson, W.

Conard Ferneliuss and Laurence Larkin Quill. Boston: Ginn and Company, 1942. 608 p. illus. 23 cm. \$3.50. 846

Contents (abridged): An approach to chemistry. Chapters on matter, energy, oxygen, hydrogen, the gas laws, water. Molecular weights; atomic weights. Formulas. Atomic structure. The states of matter. The atmosphere. The earth's crust. Solutions. Ionization in solutions. Salt. Classification of elements; transmutation of elements. Chapters on chlorine, sulfur, nitrogen, phosphorus, silicon, carbon, hydrocarbons, fuels, carbohydrates, organic acids, and the metals. Electrochemistry. Some very active metals and less active metals. Soils. Iron; cobalt; nickel. Tin; lead; paints and varnishes. Three inactive metals. Some metallo-acid elements. Gold; the platinum metals. Appendix: chemical library, tables. Index. Periodic table. Table of elements.

Note: This introductory college course in chemistry presupposes no high-school chemistry. It approaches chemistry without going into the more mathematical and more difficult aspects. Tentative partial descriptive definitions are given first; then, after the proper foundations have been laid, the more exact definitions are given. This procedure is followed in the case of equations, atomic structure, and neutralization. Both molecular and ionic equations are used. Metals of similar character, metallurgy, and uses are treated as a group. The companion laboratory manual by A. B. Garrett and others is *Introductory chemistry for the laboratory*, revised edition, Boston: Ginn and Company, 1944, 239 p., paper, \$1.60.

MELDRUM, WILLIAM BUELL, AND FRANK THOMSON GUCKER

Introduction to theoretical chemistry. New York: American Book Company, 1936. 628 p. illus. 22 cm. \$3.75. 847

Contents: The elements and their classification. Chemical combination and the atomic theory. The gas laws and the kinetic theory. Solutions. Fundamental chemical theory. Thermochemistry. Reaction velocity and equilibrium. Arrhenius' theory of ionization. Reactions according to the ionic theory. Quantitative applications of the ionization theory. Neutralization indicators. Electrical conductance. Electrode effects. Electromotive force. Applications of electrode potentials. Modern theories of electrolytes. Radiations and spectra. Radioactivity. Isotopes. Atomic structure. The nucleus. Transmutation of the elements. Arrangement of external electrons. The electronic theory of valence. Index.

Note: This book for second-year courses in colleges bridges the gap between beginning chemistry and the later specialized courses in analytical, physical, and organic chemistry. It reflects the recent developments in the field while presenting basic principles. The two main subjects of the book are the development of the ionization theory and its applications to explain solution and electrolytic phenomena, and the development of the theory of atomic structure and its application to explain the behavior of atoms and the mechanism of chemical reactions. There is a bibliography at the end of each chapter.

NAYLOR, NELLIE MAY, AND AMY LE VESCONTE

Introductory chemistry with household applications. Revised edition. New York: D. Appleton-Century Company, Incorporated, 1941. 476 p. illus. 21 cm. (The Century chemistry series; J. Kendall, editor) \$3.50. 848

Note: This textbook is intended for use in the general chemistry course in women's colleges and in the course for home economics students in coeducational colleges. As compared with the earlier edition, the revised edition devotes more attention to fundamentals as is indicated by the new material in the chapters on the quantitative reactions of acids and bases, the concepts of electrovalence, covalence, and coordinate valence, and the complete revision of the chapters on atomic structure and radio-activity. Recent theory that has become firmly established through research has been incorporated in the text, as for example, the Debye-Hückel theory as applied to solutions of salts, and strong acids and bases. Equations are introduced earlier; a new chapter has been added to cover recent industrial applications of chemistry of interest in the field of home economics—synthetic textile fibers, glass fibers, synthetic plastics, and new alloys. A list of suggested readings is now included at the end of each chapter in addition to new questions similar to those in the first edition.

NORRIS, JAMES FLACK, AND RALPH C. YOUNG

A textbook of inorganic chemistry for colleges. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 803 p. illus. 21 cm. (International chemical series; J. F. Norris, consulting editor) \$3.75. 849

Contents (abridged): Matter and energy in chemical changes. Physical properties of gases, liquids and solids. Chemical calculations. Chemical equilibrium. Acids, bases, salts. The determination of atomic and molecular weights. The chemistry of carbon compounds. Physical properties of metals. The chemical properties of metals. Electrochemistry. Index.

Note: A presentation of the material commonly treated in elementary books on chemistry in a form which can be reasonably well followed by the student through private study and with the smallest amount of explanation on the part of the teacher. The subject is developed slowly—consideration of the more abstruse material being deferred until the student has gained some familiarity with chemical phenomena and with the language of the science. In this edition, the first part of the book has been rewritten in order to incorporate new knowledge of atomic structure, isotopes, radioactivity, etc.

OFFNER, MONROE M.

Fundamentals of chemistry and their applications in modern life. Philadelphia: The Blakiston Company, 1944. 408 p. illus. 21 cm. (The New home library) \$0.69. 849a

Contents (abridged): Part I, Fundamentals of chemistry: Section I, General principles. Section II, The non-metals. Section III, The metals. Part II, Chemistry in modern life: Foods. Textiles. Dyeing and cleaning fabrics. Fires and explosions. Coal, wood, and other solid fuels. Petroleum, gasoline, and other liquid fuels. Gaseous fuels. Agriculture. Medicine. Paints. Plastics. Photography. Concrete and cement. Ceramics. Glass. Cast iron and steel. Alloys. Abrasives. Electroplating. Dry cells. Storage batteries. Rubber. Appendix. Index.

Note: The basic concepts of chemistry, written for the general reader who has not had a formal introduction to the subject. The greater part of the volume deals with the general principles of chemistry, its laws and theories, terms, symbols, and equations. The first section also describes the properties, compounds, and relationships of the chemical elements. The textual material is designed to be used without laboratory experiments, although simple experiments which can be performed at home are described. Part two briefly discusses the practical applications of chemistry in everyday life.

RICHARDSON, LEON BURR, AND ANDREW J. SCARLETT

Brief college chemistry. New York: Henry Holt and Company, 1942. 385 p. illus. 24 cm. \$3.50. 849b

Contents (abridged): Fundamental conceptions. Quantitative relations in chemical change. The atomic theory. Valence. Periodic system. Structure of atoms. Oxygen. Gases. Hydrogen. Liquid and solid states. Molecular and atomic weights. Determination of valence. Solutions. Ionization. Acids and bases. The halogen family. Oxidation and reduction. Sulfur and its compounds. Nitrogen and the atmosphere. Compounds of nitrogen. Phosphorus, arsenic, antimony, bismuth. The colloidal state. Carbon. Silicon. The alkali and alkaline earth metals. Boron and aluminum. Electrochemistry. Iron, cobalt, and nickel. Copper, silver, and gold. Zinc, cadmium, and mercury. The metals of Group IV. Other metallic elements. Hydrocarbons and their derivatives. Organic compounds. Appendix. Index.

Note: Designed as a text for introductory college courses in general chemistry in which there is a restrictive limitation on the time assigned to the work. The book presents a unified discussion of the essential principles in compact form for the student who has had no previous chemical training. No theory is introduced which is not capable of extensive application in the explanation of the reactions which make up the main body of the text. The authors have also written *Laboratory manual of brief college chemistry*, New York: Henry Holt and Company, 1942, 229 p., paper, \$1.30, for use with the present text.

RICHARDSON, LEON BURR, AND ANDREW J. SCARLETT

General college chemistry. New York: Henry Holt and Company, 1940. 683 p. illus. 24 cm. \$3.85. 850 1932

Contents (abridged): Laws of chemical combination; atomic theory; chemical notation. Molecular weights. Atomic weights. Valence: nomenclature; calculations. Solutions. Sulfur and hydrogen sulfide. The energy factor in chemical change. Chemical equilibrium. The periodic system. Radium and radioactivity. The structure of atoms. Ionization in solution. The general nature of the halogens; chlorine and hydrochloric acid. Oxidation and reduction; oxides and oxy-acids of chlorine; ozone and hydrogen peroxide. The other halogen elements—fluorine, bromine, iodine. Nitrogen and the atmosphere. Phosphorus and its compounds. Carbon. Certain compounds of carbon. The hydrocarbons and their derivatives; fuel and gases; flame. Silicon and its compounds; boron. Colloids; osmotic action. The metallic elements. The alkali metals. Iron, cobalt and nickel. The alkaline earths. Copper; solubility product. Silver and gold. Beryllium, magnesium, zinc, cadmium, mercury. Aluminum and the other members of group III. Elements of group IV; lead and tin. Electromotive chemistry. Arsenic, antimony, bismuth. Chromium, molybdenum, tungsten, uranium, manganese. The platinum group. The carbohydrates and their derivatives. Animal nutrition and animal products. Synthetic organic compounds. Appendix. Index.

Note: The present edition of this standard text represents the second revision. In it the discussion of acids, bases, and salts, as well as that of the process of ionization, has been entirely modernized, according to the Brönsted method, and the whole work has been reorganized for greater integration of materials. Many new illustrations have been included and the typography and design of the book have been made as attractive as possible. The authors have written *Laboratory manual of general college chemistry*, New York, H. Holt and Company, 1940, 265 p., paper, \$1.60, for use in conjunction with this text.

SCHLESINGER, HERMANN IRVING

General chemistry. Third edition. New York: Longmans, Green and Company, 1937. 857 p. illus. 22 cm. \$3.50. 850a

Contents (abridged): The kinetic molecular theory and the gas law. Liquefaction of air. Avogadro's law. The atomic theory. Symbols, formulae and equations. Combustion. Extraction of the metals from their ores. Velocity of reactions. Theory of ionization. The periodic system. Atomic structure and chemical behavior. The halogens. Sulfur. The oxides and oxygen acids of sulfur. The sixth main group of the periodic system. Oxides and oxygen acids of nitrogen. Carbon and carbon compounds. The colloidal condition. Silver and boron. The metallic elements. Alloys. The alkali metals. The alkaline earth metals. The copper group. The zinc group. Aluminum and other elements of the third group. Electrochemistry. Chromium. Manganese. The eighth group of the periodic system. Alphabetical list of books referred to in the text. Appendix. Index.

Note: Primarily for the student who has had high school chemistry, this college text presents analytical and exact rather than descriptive and qualitative material. Reduction of ores to the metals by hydrogen, carbon monoxide, or electrochemical procedures is presented early in the course, and the study of many chemical reactions is unified in terms of energy released. The third edition contains a more detailed description of the factors influencing reaction velocity, particularly activation of molecules, and an analysis of catalytic phenomena. The author and A. D. Link have written *Laboratory manual of general chemistry*, 3rd edition, New York: Longmans, Green and Company, 1937, 99 p., cloth, \$1.50, for use with the present text.

SCHOCH, EUGENE PAUL, AND WILLIAM A. FELSING

General chemistry; an introductory course of lessons and exercises in chemistry. New York: McGraw-Hill Book Company, Inc., 1938. 524 p. illus. 21 cm. (International chemical series; J. F. Norris, consulting editor) \$3.25. 851

Contents (abridged): Fundamental facts. Energy changes in chemical reactions. Gas laws. Simple reactions between metals and acids. Some properties of solutions. Reversible chemical reactions. Acids, bases, and salts. Metathetical reactions. The periodic classification of the elements and the structure of atoms. The ionization of acids, bases, and salts. Metathetical reactions. A study of some of the properties of the elementary and com-

pound forms of carbon and silica. The properties of sulfur and of some sulfur compounds. Properties of nitrogen, phosphorus, and the halogens. The colloidal state. The actions and uses of general reagents for solutions of salts. A system of qualitative analysis for the common metal and acid radicals. Electrolysis. Battery action. Electronic change or oxidation-reduction reactions. The preparation and properties of a few common, metallic elements. The fundamental principles of organic chemistry and the chief types of organic compounds.

Note: This book shows the beginning college student how a chemist performs the various operations or solves the various chemical problems which come to his attention. The operations and problems are arranged in a progressive manner. Laboratory directions are interspersed with the main portions of the text.

SELWOOD, PIERCE WILSON

Magnetochemistry. New York: Interscience Publishers, Inc., 1943. 287 p. illus. 23 cm. \$5.00.

852

Contents: Measurement of magnetic susceptibility: Methods. Measurements. Atomic diamagnetism; Diamagnetic ionic crystals. Atomic crystals. Molecular diamagnetism: Molecular hydrogen. Polynuclear molecules. Molecular and liquid crystals. Atomic paramagnetism: Monatomic paramagnetic gases. "Molecular field." Paramagnetic anisotropy of rare earth compounds. Nontrivalent rare earths. Nuclear magnetism. Molecular paramagnetism: "Odd" molecules. Oxygen and ozone. Sulfur. Oxides of nitrogen; of chlorine. Alkali metal polyoxides. Hexaarylethanes. Organometallic free radicals. Hydrazyls. Semiquinones. Metal ketyls. Complex compounds: Chromium and related elements. Manganese and rhenium. Iron. Cobalt. Nickel. Copper and related elements. Palladium and platinum groups. Metallic diamagnetism, Ferromagnetism: Iron. Ferrous alloys. Nickel and cobalt and their alloys. Oxides and hydroxides of iron. Non-ferrous ferromagnetic substances. Applied magnetometric analysis: Rare earths. Detection of ferromagnetic impurities. Instruments for metallurgical and mineralogical control. Structure of alloys. Phase ratios and stoichiometry. Magnetism and catalysis. Magnetism and adsorption.

Note: The author defines magnetochemistry as "the application of magnetic susceptibilities and of closely related quantities to the solution of chemical problems." The measurement of magnetic susceptibility and applied magnetometric analysis are discussed, and separate chapters are devoted to atomic and molecular diamagnetism, atomic and molecular paramagnetism, metallic dia- and paramagnetism, ferromagnetism, and complex compounds. A great many literature references are included as footnotes.

SMITH, ALEXANDER

Smith's college chemistry. Third edition, revised. By James Kendall. New York: D. Appleton-Century Company, Incorporated, 1935. 753 p. illus. 22 cm. \$4.00.

853

Contents (abridged): The chemical view of matter. Chemical change and the methods of studying it. Combining proportions by weight. The atomic theory. The measurement of gases. Molecular weights and their application. Solution. Energy and chemical change. Chemical equilibrium. The ionization theory of Arrhenius. The atmosphere and its inert components. Atomic numbers and isotopes. Atomic structure and valence. Carbon and the oxides of carbon. Plant life, plant growth and plant products. Animal life and animal products. Practical review of the non-metallic elements. The metallic elements. The alkaline earth metals. Electromotive chemistry. Practical review of the metallic elements. Appendix. Index.

Note: The various editions of this book have been widely used in colleges in the United States for over thirty years. In this edition, new chapters have been added on ionization and on the new knowledge of the atom. The companion laboratory book is the author's *Laboratory outline of Smith's college chemistry*, third revised edition, New York: D. Appleton-Century Company, Incorporated, 1935, 198 p., \$1.65. The author's *Smith's Introductory college chemistry*, revised edition by James Kendall, New York: D. Appleton-Century Company, Incorporated, 1938, 570 p., \$3.50, is a shorter book intended for courses where there is not time to study the fuller text.

SMITH, ALEXANDER

Smith's inorganic chemistry. Second revised edition. By James Kendall. New York: D. Appleton-Century Company, Incorporated, 1937. 954 p. illus. 22 cm. \$4.50.

854

Contents (abridged): The chemical view of matter. Chemical changes and the methods of studying it. The atomic theory. The kinetic molecular hypothesis. Valence. Molecular weights and their applications. Energy and chemical change. Chemical equilibrium. The ionization theory of Arrhenius. Oxidizing substances. The atmosphere and its inert components. Radioactivity. Atomic structure and valence. The hydrocarbons and their derivatives. Plant life, growth, products. Animal life and animal products. Practical review of the non-metallic elements. Electromotive chemistry. Practical review of the metallic elements. Appendix. Index.

Note: A comprehensive textbook for introductory college courses. It is the fullest of the Smith-Kendall textbooks; for description of the others see Index. Laws and concepts are stated in terms of experimental facts. The discussion of theory is related directly to experience derived from experiments carried out by the student in the laboratory. In the second revised edition many changes have been made, particularly in the treatment of chemical equilibrium, ionization, and atomic structure.

SNEED, MAYCE CANNON, AND J. LEWIS MAYNARD

General college chemistry. New York: D. Van Nostrand Company, Inc., 1944. 861 p. illus. 22 cm. \$3.75.

855

Contents (abridged): Atomic and molecular theories. Oxygen and ozone. Formulas, equations, and valence. Hydrogen. Water and hydrogen peroxide. The gas laws and the kinetic theory. The atmosphere—the inert gases. Molecular weights. Equivalent weights, and atomic weights. The halogens. Oxygen compounds of the halogens. Oxidation and reduction. Solution. Types of compounds. The velocity of chemical reactions and equilibrium. Solutions of electrolytes and the Arrhenius theory. Modern ionic theories. Sulfur, selenium, and tellurium. Nitrogen and ammonia. The elements. The phosphorus family. Carbon. Introductory organic chemistry. Applied organic chemistry. The alkali metals. The chemistry of colloids. Copper, silver and gold. Beryllium, magnesium, and the alkaline earth metals. Radioactivity. Zinc, cadmium, and mercury. Electrochemistry. Elements of group III. The transition elements of groups IV and V. The transition elements of groups VI and VII. The platinum metals. Appendixes. Index.

Note: This college textbook covers the principles and application of general chemistry at an elementary level suitable for classes containing students who have had no previous course in chemistry. Although it discusses the more recent discoveries in atomic structure and the new synthetic products and industrial processes, this text places primary emphasis upon the fundamental laws and calculations and the properties of the common substances.

SNEED, MAYCE CANNON, AND J. LEWIS MAYNARD

General inorganic chemistry. New York: D. Van Nostrand Company, Inc., 1942. 1166 p. illus. 22 cm. \$4.50.

856

Contents (abridged): Preface. Historical introduction. Atomic theory and structure of the atom. The periodic system. Formulas, equations, and valence. The gas laws and the kinetic theory. The atmosphere—the inert gases. Molecular weights, equivalent weights, and atomic weights. The halogens. Types of compounds. The velocity of chemical reactions—equilibrium. Solutions of electrolytes—the Arrhenius theory. Modern theory of ionization. Degree of ionization and the electrochemical properties of solutions of electrolytes. Ionic equilibria and reactions. Sulfur, selenium, and tellurium. Nitrogen and ammonia. The phosphorus family. Carbon. Thermochemistry. Silicon. Boron. The alkali metals. The chemistry of colloids. Coordination compounds. Beryllium, magnesium, and the alkaline-earth metals. Radioactivity. Elements of group III. The transition elements of group IV. The transition elements of group V. The transition elements of group VI. The transition elements of group VII. Alloys: intermetallic and related compounds. Subject index. Name index.

Note: This college textbook is designed for comprehensive full-year courses. It gives a thorough foundation in the basic principles, and at the same time it presents a very detailed account of the properties and reactions of the chemical substances, and the application of these facts in science and industry. The relatively more advanced topics, such as thermochemical and electrochemical relations, are simply explained, and their more specialized aspects are described in smaller type, to give the instructor the utmost latitude in the conduct of the course. The discussions of the chemistry and technology of the rarer elements are an important feature of this text.

SNELL, CORNELIA TYLER, AND FOSTER DEE SNELL

Chemistry made easy. New York: D. Van Nostrand Company, Inc., 1943. 4 v. illus. 21 cm. \$7.95. Also sold separately at \$2.25 each volume. ~~\$57~~

Contents (abridged): Volume i. The theory of inorganic chemistry. Volume ii. Elements and compounds in inorganic chemistry. Volume iii. Aliphatic and aromatic compounds of organic chemistry. Volume iv. Chemicals of commerce.

Note: This set of books has been designed for the study of chemistry at home, without teacher or laboratory. One hundred eighteen lesson-chapters cover important basic topics in chemistry in a simple, direct style, with many charts and diagrams. Review questions are given at the end of each chapter, and final examinations at the end of the first three volumes, with answers to all questions in each book. The principles of chemistry, elementary chemical calculations, the properties of chemical substances, and the application of this knowledge in industrial chemistry and in understanding the properties, uses, and specifications of commercial chemicals are covered. The fourth volume is a revised reprint of the authors' *Chemicals of commerce*, New York: D. Van Nostrand Company, Inc., 1939, 542 p.

SPICER, WILLIAM MONROE, AND OTHERS

General chemistry problems, by William M. Spicer, William S. Taylor, and Joe D. Clary. New York: John Wiley & Sons, Inc., 1943. 120 p. illus. 22 cm. \$1.25. ~~\$58~~

Contents: Introduction. Conversion of units, density, percentage. Equivalent weights. Percentage composition, molecular formulas. The gas laws. Problems based on chemical equations. Valence. Molecular and atomic weights. Exponential numbers, logarithms, and the slide rule. Significant figures. Relative density, specific gravity. The use of chemical units of quantity. The concentration of solutions. Raoult's law. Equilibrium. Review problems. Index.

Note: For use as a supplementary text in general college chemistry. This book teaches the necessity for the justification of every step taken in the solution of a problem. It emphasizes the importance of thinking in terms of chemical units of quantity, and describes the use of logarithms and the slide rule as applied to the solution of chemistry problems.

TIMM, JOHN ARREND

General chemistry. New York: McGraw-Hill Book Company, Inc., 1944. 692 p. illus. 24 cm. (International chemical series; L. P. Hammett, consulting editor) \$3.75. ~~\$58a~~

Contents (abridged): Introduction. Matter. Atoms and molecules. The symbolism of chemistry. Changes in matter. Oxygen. Valence. Hydrogen. The properties of gases. The kinetic-molecular theory. Oxides and their reactions. Liquids. Solids. Chlorine. Solutions. Determination of molecular and atomic weights. Problems based on equations. The halogens. The periodic table. Subatomic particles. Atomic structure. The nature of valence. Radioactivity. The nucleus. Ionization of salts. Reaction velocity and chemical equilibria. Ionization of acids. Protolysis reactions. Sulfur and the sulfides. The atmosphere. Nitrogen and ammonia. Oxides and oxygen acids of nitrogen. Oxidation-reduction reactions. The elements of Group v. Carbon. Silicon and boron. The colloidal state. Electrolysis and electrometallurgy. The metals and their alloys. The aliphatic hydrocarbons. Derivatives of the hydrocarbons. The aromatic hydrocarbons. The chemistry of life. Appendix. Index.

Note: A readable textbook for beginning college students and suitable also for interested laymen who wish an introduction to chemistry. No mathematics beyond simple arithmetic is required, and the author employs a conversational style in the explanation of important theoretical principles. Repetition, in which the treatment is progressively detailed, is a noticeable feature of the work. The main body of the book is devoted to general theories and to inorganic chemistry, but there are three concentrated chapters on basic organic chemistry at the end of the text.

TIMM, JOHN ARREND

An introduction to chemistry, with a foreword by John Johnston. Third edition. New York:

McGraw-Hill Book Company, Inc., 1938. 568 p. illus. 21 cm. (International chemical series, J. F. Norris, consulting editor) \$3.50. ~~\$59~~

Contents: Introduction. The nature of matter. The nature of gases. The nature of liquids and solids. Changes of state. Molecules. Atoms. The shorthand of chemistry. The nature of chemical reactions. Rate of chemical reactions. The atmosphere. The nature of combustion. Oil fuel resources. The metals. Iron and steel. The periodic law. The structure of atoms. The planetary electrons. Radioactivity. The nucleus. The nature of energy. Radiation. The emission and absorption of radiant energy. Water. Solutions. Properties of solutions. Electrolytic dissociation. Salts. Acids and bases. Reactions of electrolytes. The acid heavy chemicals. The basic heavy chemicals. Electrolysis and the electrochemical industries. Electrochemical cells. Colloids. The ceramics and allied industries. Plant food. Organic chemistry. Carbohydrates, fats, and proteins. Coal tar. Appendix. Index. 1930

Note: Designed especially for those students whose major interests lie elsewhere, yet who need the cultural value of the methodology and philosophy of chemistry. The book is arranged to give the student an appreciation of the scientific procedure as it has been applied in the derivation and testing of the fundamental theories of chemistry—a knowledge of the application of these theories to the development of natural resources, to the problems of industry and to those of the daily life of the individual—and to treat the development of the theory from an historical point of view. The third edition has been revised to incorporate the generalized definitions of acids and bases, and correlates the theories of atomic structure and of valence with the behavior of electrolytic solutions.

WENDT, GERALD

Chemistry. New York: John Wiley and Sons, Inc., 1942. 300 p. illus. 22 cm. (The sciences; a survey course for colleges, edited by Gerald Wendt) \$2.25. ~~\$60~~

Contents: The nature of matter. Atomic structure. Chemical reactions. Organic chemistry. Physical chemistry. Energy. Physical chemistry, contact. Inorganic chemistry. Organic chemical industry. Biochemistry. The future. Appendix. Bibliography. Index.

Note: An elementary, compact treatment of the subject is attained by careful selection of those major concepts which provide a simple explanation for complex phenomena, plus their application to practical subjects of broad general interest. Previous knowledge of chemistry is not required to understand the book. The treatment is suitable for laymen as well as college students.

YOST, DON M., AND HORACE RUSSELL, JR.

Systematic inorganic chemistry of the fifth- and sixth-group nonmetallic elements. New York: Prentice-Hall, Inc., 1944. 423 p. 23 cm. (Prentice-Hall chemistry series; W. M. Latimer, editor) \$6.00. ~~\$61~~

Contents (abridged): Nitrogen and its oxides and sulfides. Nitrogen oxyhalides and oxyacids. The fixation of nitrogen. Hydroxylamine, amine sulfonates, phosphorus chloronitrides, hydrazine, and hydrazoic acid. Ammonia and liquid ammonia solutions. Phosphorus, phosphorus oxides, and phosphorus sulfides. The oxyacids of phosphorus. Phosphorus halides and oxyhalides. Phosphine. Oxygen, sulfur, selenium, tellurium, and their compounds with hydrogen. The halides and oxyhalides of sulfur, selenium, and tellurium. The oxides and oxyacids of sulfur, selenium, and tellurium. Hydrogen peroxide, hydrogen persulfides, and the peroxyacids. Metallic peroxides and superperoxides. Polythionic acids. Appendixes: Bibliography. General physical constants. Periodic system of the elements. Subject index. Name index.

Note: An advanced textbook which incorporates recent developments in the field of inorganic chemistry. Kinetics, molecular structure, thermodynamics, magnetic properties, and statistical mechanical calculations are integrated into discussions of chemical behavior and physical properties. Reaction rates are given in 20 figures and over 25 tables. Research problems are given; and a bibliography of reference works is included.

YOUNG, LEONA ESTHER, AND C. W. PORTER

General chemistry, a first course. Revised edition. New York: Prentice-Hall, Inc., 1943. 527 p. illus. (part col.) 23 cm. \$5.00. ~~\$62~~

Contents (abridged): Matter and energy. Compounds, elements, and mixtures. Atoms. Molecules. The electron theory. Periodic table. Chemical equations and chemical calculations. Group I of the periodic table. Photoelectric effect. Spectrum analysis. Group VII of the periodic table. Halogens and halogen acids. Acids. Bases. Salts. Ionization. Colloids. Group V of the periodic table. Group IV. Group VI. Group II. Group III. Subgroup I. Subgroup II. Electromotive series. Electric cells. Storage batteries. Electrolysis. Electrode potentials. Subgroup IV of the periodic table. Subgroup VI. Subgroup VII. Iron. Cobalt. Nickel. Platinum family. Hydrocarbons. Plant and animal life. Radioactivity and the transmutation of elements. Appendix. Index.

Note: This text presents a first course in inorganic chemistry, stressing traditional topics but showing modern industrial applications, such as nylon, high octane gasoline, and synthetic rubber. A functional approach is used, with organization in small, logically arranged units, intended for easy absorption in accelerated programs.

Analytical Chemistry

ACIDS AND BASES: a collection of papers. Easton, Pa.: The Journal of Chemical Education, 1941. 103 p. illus. 20 cm. (Contributions to chemical education. Number 1) \$1.00. 862a

Contents: Systems of acids and bases, by Norris F. Hall. Teaching the new concepts of acids and bases, by H. T. Briscoe. The theory of acids and bases in analytical chemistry, by Louis P. Hammett. The advantages of the older methods, by Warren C. Johnson. A simplified nomenclature for the proton transfer concept of acids, by Hubert N. Alyea. Acid-base reactions in non-protonic solvents, by James P. McReynolds. Analogy of acid-base reactions to oxidation-reduction in solution, by Thomas H. Hazlehurst. Pictures of acid-base reactions, by Thomas H. Hazlehurst. The role of the solvent in acid-base properties, by W. F. Luder. A résumé of the proton transfer concept of acids and bases, by Hubert N. Alyea.

Note: These ten short papers form the first of a projected series of articles written with the needs of teachers and students of chemistry in mind, and intended to show that the teaching of general chemistry can be kept abreast of current developments in the field. Bibliographies accompany most of the papers. A supplementary volume containing six additional papers has been issued by the same publisher under title *More acids and bases*, 1944, 79 p., \$1.00.

ARENSON, SAUL BRYAN

How to solve problems in quantitative analysis. New York: Thomas Y. Crowell Company, 1942. 89 p. 21 cm. (Crowell's "How to solve" series) \$0.75. 863

Contents: Computations. Gravimetric analysis. Normal solutions in neutralization. Normal solutions in oxidation and reduction. Normal solutions in precipitation titrations. Appendix: Logarithms and antilogarithms.

Note: This text is designed for use in self-instruction by those who find difficulty with mathematical problems in quantitative analysis. For each type of calculation likely to be met, the author seeks to help the student first to visualize the problem and then to plan his approach to its solution. After a preliminary discussion in each case, typical illustrative problems are presented and their solutions outlined in detail together with the reasons for each step.

ARENSON, SAUL BRYAN, AND GEORGE RIEVE-SCHL, JR.

Introduction to quantitative analysis. New York: Thomas Y. Crowell Company, 1944. 386 p. illus. 22 cm. \$2.75. 863a

Contents: Introduction. Fundamentals. Chemical equilibrium. Acid-base titrimetry. Oxidation-reduction titrimetry. Precipitation titrimetry. Gravimetric analysis. Some applications of electrochemistry. Photometric methods of analysis. Appendixes. Index.

Note: A modern, informal college text. It provides some 70 experiments, a large selection of all types of problems, and a comprehensive list of special reference materials. The same authors have written a companion manual, *Laboratory notebook for Introduction to quantitative analysis*, New York: Thomas Y. Crowell Company, 1944, 96 p., \$0.75.

ARTHUR, PAUL, AND OTTO M. SMITH

Semimicro qualitative analysis. Second edition. New York: McGraw-Hill Book Company, Inc., 1942. 322 p. illus. 23 cm. (International chemical series; L. P. Hammett, consulting editor) \$2.75. 864

Contents: Part I, Theory: Introduction; review of elementary principles. Solutions. Theories of ionization. Homogeneous ionic equilibria. Heterogeneous reactions; solubility product. Hydrogen sulfide and metal sulfides. Ionization of water; hydrolysis. Complex ions; amphoteric substances. Colloids; coprecipitation phenomena. Oxidation-reduction reactions. Part II, Analytical procedure: Semimicro technique. Cation analysis. Anion analysis.

Note: In this textbook the authors constantly maintain the student's point of view, seeking to anticipate his questions and to answer them. In this edition the portion of the book dealing with theory has been greatly expanded, and theory and laboratory have been closely correlated. Discussion of semimicro techniques has been much enlarged and anion analysis has been extensively revised.

BABOR, JOSEPH ALBERT, AND J. KENNETH W. MACALPINE

How to solve problems in qualitative analysis. New York: Thomas Y. Crowell Company, 1943. 93 p. 21 cm. (Crowell's "How to solve" series) \$0.75. 865

Contents: Mathematical operations. Concentration of solutions. Weak electrolytes. Solubility-product principle. Ionization constant and solubility product. The water equilibrium; hydrolysis. Complex ions. Appendixes: Ionization constants of weak acids and bases; solubility products; instability constants of complex ions; a brief table of atomic weights; logarithms; and antilogarithms.

Note: This text is designed for use in self-instruction by those who find difficulty with mathematical problems in qualitative analysis. For each type of calculation likely to be met, the authors first seek to help the student visualize the problem and then plan his approach to its solution. To this end, after a preliminary discussion in each case, typical illustrative problems are presented and their solutions outlined in detail together with the reasons for each step.

BAILEY, EDGAR HENRY SUMMERFIELD, AND HAMILTON P. CADY

A laboratory guide to the study of qualitative analysis, based upon the application of the theory of electrolytic dissociation and the law of mass action. Tenth edition revised by Arthur W. Davidson. Philadelphia: The Blakiston Co., 1937. 322 p. illus. 22 cm. \$2.00. 866

Contents (abridged): Introduction. Cations. Anions. Methods of analysis. Index.

Note: A brief summary of the important principles involved in typical reactions of qualitative analysis. Complete directions are provided for each procedure, and suggested precautions enable the student to work successfully without the constant assistance of the instructor. In this edition the theoretical introduction has been rewritten in order to present modern theories of electrolytes. The portions of the work dealing with the properties of ions and methods of separation have been likewise revised, and there are other important changes.

BALDWIN, ERNEST JOY

Principles of inorganic and analytical chemistry. New York: D. Van Nostrand Company, Inc., 1940. 506 p. illus. (part col.) 22 cm. \$3.25. 867

Contents: Properties of atoms and molecules: Gas laws and the kinetic theory. Properties of liquids and vapors. Molecular and atomic weights. Properties of solutions. The periodic classification. Rays from gaseous discharges. Radioactivity. Photochemistry. Atomic structure. Isotopes. The electron theory of valence. Nuclear chemistry. Theory of reactions: Reaction veloc-

ity and equilibrium; solutions of electrolytes and the Arrhenius theory. Recent extensions and modifications of the Arrhenius theory. Ionic equilibria. Solution and precipitation. Gravimetric analysis. The ionization of water. Hydrolysis. Theory and use of indicators. Neutralization methods in volumetric analysis. Principles of oxidation-reduction. Oxidation-reduction reactions. Oxidation-reduction methods in quantitative analysis. Index. Table of antilogarithms. Table of logarithms.

Note: This intermediate college textbook combines the more advanced work in inorganic chemistry with an elementary treatment of analytical chemistry. This combination bridges the gap between the study of ionization and its application to qualitative analysis. Courses based on it introduce laboratory work and class study of qualitative analysis, as well as some quantitative analysis, early in the college course.

BARBER, HERVEY HUBBARD, AND T. IVAN TAYLOR

Semimicro qualitative analysis (the Barber pressure bulb method). New York: Harper & Brothers, 1942. 446 p. illus. 24 cm. \$3.75. 868

Contents: Elementary principles. Chemical reactions and equations. Theories of solutions and ionization. Ionic equilibrium. Precipitation and the dissolution of precipitates. Semimicro technique. Systematic analysis of the cations. Systematic analysis of the anions. Properties and reactions of the ions and their compounds. Appendixes. Index.

Note: This text is divided into three parts, covering the theoretical principles, semimicro analysis of the cations and anions, and reference tables for the properties and reactions of the ions. The theoretical treatment is modern and up to date, and follows the Brønsted-Lowry treatment of acids and bases recommended by the Committee on Nomenclature of the Division of Chemical Education. An important feature of this text is its substitution, for the expensive centrifuge, of a simple apparatus consisting of a pressure filter tube and a rubber pressure bulb. Problems and questions are provided for the various chapters.

BELCHER, JAMES ELMER, AND OTHERS

A course in qualitative analysis, based on macro and semi-micro methods, by James E. Belcher and Guy Y. Williams, under the editorship of Herman T. Briscoe. Boston: Houghton Mifflin Company, 1938. 264 p. illus. 28 cm. Boards, \$2.60. 868a

Contents (abridged): Part I, Theory of qualitative analysis: Fundamental principles. Valence and atomic structure. Formulas—compounds—nomenclature. Types of reactions. The theory of solutions. Theories of ionization. Chemical equilibrium in various systems. Practical applications of equilibrium principles to qualitative analysis. Colloids. Mathematical operations. Part II, The properties of the common cations and anions and their compounds: Laboratory technique and apparatus. Part III, A systematic analysis for cations and anions. Appendix.

Note: A combined text and laboratory manual designed to enable the student in one semester to acquire information about the properties of the ordinary cations, anions, and their principal compounds, to develop an experimental technique, and to correlate theory and practice. The material is based on both macro and semi-micro methods.

BELCHER, JAMES ELMER, AND J. C. COLBERT

Identification and properties of the common metals and non-metals. Second edition. New York: D. Appleton-Century Company, Incorporated, 1934. 242 p. illus. 27 cm. (The Century chemistry series, James Kendall, editor) Paper, \$2.00. 869

Contents (abridged): Part I, Experiments dealing with general chemistry of certain metals and non-metals: Ammonia compounds. Preparation and properties of nitric acid. Oxides of nitrogen. Nitrous acid and sodium nitrite. Phosphorus and its compounds. Oxides of carbon. Distillation of crude petroleum. Heat of solution of zinc sulphate. Alcoholic fermentation. Analysis of a sample of coal. Chemistry of milk. Preparation and cleansing action of soap. Synthetic dyes and perfumes. Sodium bicarbonate. Iron. Manganese. Part II, Elementary qualitative analysis: Amphoteric substances. Colloids. Solubility product and its applica-

tions. Complex ions. Cations in the hydrochloric acid group. Ammonium sulfide group. Soluble group. Systematic analysis of an unknown for the cations. Silver nitrate group of anions. Volatile acid group. Analysis of an unknown for the anions. Reports on unknowns. Appendix. Tables.

Note: This manual for second-semester classes in introductory college chemistry courses is based on the same three textbooks by Alexander Smith and James Kendall mentioned in the note accompanying the authors' *Properties and numerical relationships of the common elements and compounds* (see Index). Duplicate question sheets are provided for each of the 45 experiments so that the student may retain a carbon copy of the results. The second edition contains new references and additional descriptive material, plus certain minor changes in the presentation.

BENEDETTI-PICHLER, ANTON ALEXANDER

Introduction to the microtechnique of inorganic analysis. New York: John Wiley & Sons, Inc., 1942. 302 p. illus. 23 cm. \$3.50. 870 ✓

Contents: Introduction. Part I, Apparatus for general use. Part II, Qualitative analysis: A. Confirmatory tests: Spot tests, slide tests, fiber tests, test-tube tests, bead tests. B. Microtechnique of qualitative analysis: Mechanical manipulation, work on microscope slides, work in capillaries, observation of color, centigram procedures, milligram procedures, gamma procedures. Part III, Quantitative analysis: A. Gravimetric determinations: (a) Centigram and milligram procedures; (b) Gamma procedures. B. Titrimetric determinations. Appendix: Bibliography. Basic course in microtechnique. Reagents for qualitative analysis. Reagents for gravimetric experiments. Reagents for titrimetric analysis. List of apparatus. Index.

Note: Here is presented a collection of most of the techniques used in the qualitative identification and quantitative determination of very small amounts of inorganic substances. The book contains detailed directions for many experiments in both fields. It describes, in the manner of a laboratory manual, certain of the basic manipulative and observational techniques that have been developed for or adapted to microchemistry in order to facilitate operations on a reduced scale; and illustrates the application of these techniques to qualitative and quantitative inorganic analysis. Numerous illustrations of apparatus and techniques are included.

BLASDALE, WALTER CHARLES

The fundamentals of quantitative analysis. Fourth edition. New York: D. Van Nostrand Company, Inc., 1936. 405 p. illus. 22 cm. \$3.75. 871

Contents: Introductory statements and definitions. General features of gravimetric processes. Gas evolution processes. Precipitation processes. Solution and extraction processes. Partition processes. General features of volumetric processes. Volumetric processes involving precipitation. Volumetric processes involving neutralization and displacement. Volumetric processes involving oxidation. Index.

Note: This college textbook covers both the theory and the laboratory techniques and methods of quantitative analysis. It places particular emphasis upon the use of the principles of physical chemistry to explain the theory of quantitative analysis. The practical material stresses those methods of manipulation which are widely used in commercial laboratories. Earlier editions were entitled: *Principles of quantitative analysis*.

BOOTH, HAROLD SIMMONS, AND VIVIAN R. DAMERELL

Quantitative analysis. Second edition. New York: McGraw-Hill Book Co., Inc., 1944. 303 p. illus. 21 cm. (International chemical series; L. P. Hammett, consulting editor) \$2.50. 872

Contents (abridged): Preliminary operations. The balance; weighing. Calibration of weights. Factors which influence the solubility, form, and purity of precipitates. Problems in gravimetric analysis. Volumetric analysis. Calibration of volumetric apparatus. Acidimetry. Oxidimetry. Precipitation methods of analysis. Colorimetric analysis. Methods of analysis based upon use of an electric current. Problems in volumetric analysis. Appendixes: Normality of concentrated side-shelf reagents. Logarithms of numbers. Antilogarithms.

Note: A combination textbook and laboratory manual in elementary quantitative analysis that includes detailed directions

for calibration of weights and volumetric apparatus, and for gravimetric and volumetric analysis. There is also extensive theoretical discussion of many points in connection with the laboratory work. In the present edition gravimetric and volumetric problems have been added, and seven new determinations have been included.

BRADSTREET, RAYMOND B.

The standardization of volumetric solutions. Second edition. Completely revised and enlarged. Brooklyn, N.Y.: Chemical Publishing Co., Inc., 1944. 151 p. illus. 22 cm. U.S., \$3.75; foreign countries, \$4.15. 873

Contents (abridged): Calibration of volumetric apparatus. Indicators. Standard substances. Standard solutions of acids and bases. Standard solutions of oxidizing reagents. Equations involved in standardization. Logarithms of volumetric factors. Logarithms of numbers. Index.

Note: Methods of preparing standardized solutions are here assembled in a small reference volume for the analytical chemist. Several paragraphs throughout the text and a new chapter on standard substances have been added since the photoprint edition of 1938.

BRISCOE, HERMAN THOMPSON

Qualitative chemical analysis; principles and methods. New York: D. Van Nostrand Company, Inc., 1931. 279 p. illus. 22 cm. \$2.25. 874

Contents: Part I, General principles: A comparison of molecules of gases with molecules in solution. Avogadro's hypothesis and the Van't Hoff theory as applied to solutions of electrolytes. The structure of matter. Reactions in solution. Chemical equilibrium. Hydrolysis. Oxidation and reduction. Formulas and equations. Colloids. Part II, Analysis of the cations: The sodium group. The calcium group. The iron group. The copper and tin group. The silver group. Part III, Analysis of the anions: The silver group. The barium-calcium group. The soluble group. Part IV, Analysis of substances which may contain cations and anions in any or all groups. Appendix. Index.

Note: This book correlates the principles and practice of qualitative analysis by an arrangement of the subject in which the analysis of the metal ions is taught in the laboratory in the same order that it is covered in the class. In other words, this author begins the laboratory work with the sodium group and completes it with the silver group, thus presenting the subject in the order of difficulty, by beginning with the simplest theory and ending with the more complex. Among the topics covered are the activity concept, covalency, and crystal structure.

BROWN, FRANK EMERSON

A short course in qualitative analysis. Revised edition. New York: D. Appleton-Century Company, Incorporated, 1942. 367 p. illus. 23 cm. (The Century chemistry series; James Kendall, editor) \$2.60. 875

Note: In order to adapt this college textbook for use with both types of analytical methods, adequate directions are given for macro analysis as well as for semimicro. Part I of the book is devoted to the theory of qualitative analysis; Part II gives in detail simple, definite procedures for the systematic analysis of inorganic substances; Part III provides general directions for laboratory work, followed by laboratory report sheets for 51 experiments which parallel the procedures described in Part II. The principal new features of the revised edition are the revision of the text to fit the needs of semimicro courses; the inclusion of perforated laboratory sheets; a more logical organization of the material; and the enlargement of the format.

CALEY, EARLE RADCLIFFE

Analytical factors and their logarithms. New York: John Wiley & Sons, Inc., 1932. 112 p. illus. 20 cm. \$2.00. 876

Contents: International atomic weights and their logarithms for 1931. Inorganic gravimetric factors with temperatures for the drying or igniting of precipitates. Metallo-organic gravimetric factors with temperatures for the drying of precipitates and references to the literature. Gravimetric factors for indirect weigh-

ing. Gravimetric factors for indirect analyses. Miscellaneous weight conversion factors. Inorganic volumetric factors for normal acids or bases. Organic and metallo-organic volumetric factors for normal acids or bases. Inorganic volumetric factors for normal oxidizing or reducing agents. Organic and metallo-organic factors for normal oxidizing or reducing agents. Factors for use with various volumetric reagents. Five place logarithms. Instructions for the use of the tables.

Note: A collection of convenient tables for the use of the chemical analyst, offering data for all the common gravimetric and volumetric processes. For the first type, the generally accepted temperature for the drying or the ignition of the precipitate has been inserted.

CHERONIS, NICHOLAS DIMITRIUS

Semimicro and macro organic chemistry. New York: Thomas Y. Crowell Company, 1942. 388 p. illus. 22 cm. \$2.75. 877

Contents: Part I, Introduction to laboratory methods. Part II, Preparation and properties of simple organic compounds. Part III, Preparation and properties of compounds of greater complexity. Appendix: Laboratory accidents and first aid; suggested list of apparatus for elementary organic chemistry (macro and semimicro); list of chemicals and reagents; calibration of thermometers; freezing mixtures; drying agents for organic liquids; cleaning solutions; preparation of pipettes and pipette droppers; preparation and sealing of a bomb tube; densities and percentage compositions of various solutions; vapor pressures of various organic substances; reference book for beginners in practical organic chemistry and laboratory methods; write-up of a typical experiment. Index.

Note: This text was written from the viewpoint that the semimicro technique makes possible all the objectives of laboratory practice in elementary organic chemistry with greater cleanliness and ease, economy and lessened danger, than with the macro method. Parallel experiments are indicated in the text. Removable worksheets and questions on experiments follow the index.

CLARK, EARL PERRY

Semimicro quantitative organic analysis. New York: Academic Press, Inc., 1943. 135 p. illus. 23 cm. \$2.50. 878

Contents: Introduction. Determination of carbon and hydrogen. Determination of nitrogen by the Kjeldahl method. Dumas method for the determination of nitrogen. Determination of halogens. Ethanolamine-sodium method. Carius method. Sodium peroxide fusion method. Liepert volumetric method for iodine. Aliphatic iodine. Determination of sulfur. Determination of phosphorus. Alkali-nitrate fusion method for converting organic phosphorus to orthophosphate. Woy's procedure for weighing the phosphorus as phosphomolybdic anhydride. Determination of methoxyl and ethoxyl groups. Determination of acetyl groups. Determination of the neutralization equivalent. Determination of molecular weights. Rast method. Signer method. Determination of volatile fatty acids. Tables. Index.

Note: Much of this material has appeared, over a period of several years, in the *Journal of the Association of Official Agricultural Chemists*. However, it has been revised and now incorporates the results of further experience and recent developments. The author's purpose was not to compile a comprehensive reference volume, but to present as briefly as possible simple working and well-tested methods of semimicro analysis.

CURTMAN, LOUIS JACOB

A brief course in qualitative chemical analysis from the standpoint of the laws of equilibrium and the ionization theory. New York: The Macmillan Company, 1936. 249 p. illus. 22 cm. \$2.50. 879

Contents (abridged): Introduction: Qualitative analysis. Terms. Method of qualitative analysis. Limitations of tests. Part I, Theory: Chemical equations. Balancing equations. Solution of electrolytes. Theory of ionization. Modification of the theory of ionization. Chemical equilibrium. Application of the mass action law and ionization. Solubility product. Complex ions. Law of distribution. Theory of oxidation and reduction. Ion product of water. Buffer solutions. Hydrolysis of salts. Part II, The metal ions and the acids. Part III, Laboratory work. Part IV, Calculations. Appendix. Index.

Note: This textbook contains comprehensive material for a one-semester course in which theory and laboratory work are

closely co-ordinated to provide a scientific foundation for the prospective student of chemistry, medicine, dentistry, agriculture, and engineering. Detailed explanations have been supplied for writing all the difficult equations for the reactions of the metal ions and serve as a reference for the student. Instructions are also provided for the use of a system of individual reagents as developed by the author. Problems are given at the end of each chapter.

CURTMAN, LOUIS JACOB, AND SYLVAN M. EDMONDS

Calculations of qualitative analysis. New York: The Macmillan Company, 1940. 156 p. illus. 24 cm. \$2.25. 880

Contents: General properties of strong and weak electrolytes. Chemical equations. Calculations based upon the chemical formula and equation. Solutions. Calculations involved in non-redox and redox reactions. Chemical equilibrium and ionization. Solubility product. The ionization of water—oxonium ion concentration. Complex ions. Theory of redox reactions. Appendix. Logarithm tables. Index.

Note: This book provides material for use in conjunction with laboratory work in courses on qualitative analysis. It tests the student's comprehension of theory, gives him training in qualitative calculations, and prepares the way for his later work in quantitative analysis. All the calculations encountered in the theory and practice of qualitative analysis are covered. There is a modern presentation of such topics as oxidation-reduction and salt effect, with problems. In addition to the list of problems for assignment on each topic, the underlying theory is outlined and its applications explained by appropriate examples. There is a complete answer book available for teachers using the text.

CURTMAN, LOUIS JACOB

Introduction to semimicro qualitative chemical analysis. New York: The Macmillan Company, 1942. 377 p. illus. (part col.) 22 cm. \$2.75. 881

Contents: Introduction. Theory. The metal ions and the anions. Calculations. Laboratory work. The anions and the complete analysis of mixtures. Appendix.

Note: In this book semimicro qualitative analysis has been definitely restricted to a field of analysis in which the reactions and operations of macro work are reduced to a scale of one tenth to one twenty-fifth combined with a specialized technique developed and tested to give reliable results.

CURTMAN, LOUIS JACOB

Qualitative chemical analysis. Revised edition. New York: The Macmillan Company, 1938. 514 p. illus. (part col.) 22 cm. \$3.75. 882

Contents (abridged): Introduction. Part I, Theory. Part II, The metal ions. Part III, Calculations. Part IV, Laboratory work—qualitative analysis. Part V, The acids or anions. Appendix: Recording notes. Special apparatus. Desk equipment. Reagents. The preparation of test. Known and unknown solutions. The Breithut H₂S generator. The individual reagent systems. Use and care of platinum crucibles. Table—solubilities and solubility products. Table of logarithms. Index.

Note: This text for college students is designed to provide an adequate basis for work in professional fields. A series of semimicro procedures has been included in the section on laboratory work. In the revised edition, discussions of the structure of compounds and the Brönsted theory of conjugate acids and bases have been added, part of the text has been rearranged, and a considerable portion has been revised. The volume is arranged so that it can be used for a short course or a full one. Also available from the same publisher is the author's *A brief course in qualitative chemical analysis*, New York: The Macmillan Company, 1936, 249 p., \$2.50, which contains selections from the larger text and is designed to be used in short courses.

DOBBINS, JAMES TALMAGE

Semi-micro qualitative analysis. New York: John Wiley & Sons, Inc., 1943. 422 p. 22 cm. \$3.00. 883

Contents: Introduction. Part I, Fundamental principles. Part II, The reactions of the cations: Group 1 cations. Group 2 cations.

Group 3 cations. Group 4 cations. Group 5 cations. Part III, Systematic analysis: Group 1 cations. Group 2 cations. Group 3 cations. Group 4 cations. Group 5 cations. Part IV, General properties of the anions: Group 1 anions. Group 2 anions. Group 3 anions. Group 4 anions. Group 5 anions. Part V, Systematic analysis of the anions: Group 1 anions. Group 2 anions. Group 3 anions. Group 4 anions. Group 5 anions. Appendix. Index.

Note: With the Periodic Table as a foundation this elementary book coordinates and unifies the field of chemical reactions. It contains a set of experiments illustrating the fundamental principles; a complete systematic scheme of separation of the anions; and a scheme of separation of the cations in which the time required for a complete analysis is materially shortened. A series of problems illustrating and emphasizing the most important points rounds out the book.

DOLE, MALCOLM

The glass electrode; methods, applications, and theory. New York: John Wiley & Sons, Inc., 1941. 332 p. illus. 23 cm. \$4.50. 884

Contents: Significance of hydrogen ion concentration; definitions and conventions. Review of methods of pH measurement including the early history of the glass electrode. E.M.F. measuring circuits. Types of glass electrodes and glasses. Reference electrodes for glass electrode cells. Cell assemblies and liquid-junction potentials. Limitations of glass electrode in alkaline pH range. Limitations of the glass electrode in acid and nonaqueous solutions. Temperature effects in glass electrode cells. Some special applications of the glass electrode. Special applications of the glass electrode in biological chemistry. Applications of the glass electrode in industrial research and control laboratories. Continuous pH recorders and automatic pH control with a glass electrode. Micro methods with glass electrode. Potentiometric titrations with the glass electrode. The theory of the glass electrode. Significance and standardization of pH scale. Appendix. Logarithms. Author index. Subject index.

Note: A detailed review and discussion of the glass electrode, of its limitations and difficulties, of its methods and applications, and of its mechanism and theory. The literature is reviewed in a critical and objective way. The book includes, from industrial sources, much hitherto unpublished material dealing with industrial applications and the technique of the measurements. The appendix contains useful tables and graphs.

ENGELDER, CARL JOHN

Calculations of qualitative analysis. Second edition. New York: John Wiley & Sons, Inc., 1942. 174 p. 23 cm. \$2.00. 885

Contents: Mathematical operations. Stoichiometric calculations based on chemical equations. The preparation and use of reagents. Molar and gram-ion concentrations. Ionization equilibria. Solubility product equilibria. Complex-ion equilibria. Hydrolysis equilibria. Oxidation-reduction equilibria. General summary and review. Appendix. Index.

Note: This book is designed to give students practice in handling the calculations of qualitative analysis. The second edition provides the basic theory of equilibrium calculations as applied to ionic reactions. Fifteen sets of problems illustrate the theory. In general, the problems in this edition are new. Answers to the odd-numbered ones are given in the book. Numerous changes have been made in this edition.

ENGELDER, CARL JOHN

Calculations of quantitative analysis. New York: John Wiley & Sons, Inc., 1939. 174 p. 23 cm. \$2.00. 886

Contents: Introduction: General considerations. The reagents of quantitative analysis. The calculations of volumetric analysis: The general calculations of volumetric analysis. The calculations of volumetric precipitation analysis. The calculations of neutralization analysis. The calculations of oxidation and reduction processes. The calculations of gravimetric analysis: General considerations of gravimetric analysis. Equilibria in gravimetric precipitation analysis. Calculations based on analytical data: Systematic quantitative analysis. Computations based on percentage composition. Appendix. Index.

Note: A systematic sequence of problem assignments, in fifteen sets, is presented in this book, each problem set consisting of 20 problems—a total of 300. Discussion of theory, together with numerous illustrative examples, accompanies each problem set. The book applies the theory to typical analysis.

ENGELDER, CARL JOHN, AND OTHERS

Semi-micro qualitative analysis, by Carl J. Engelder, Tobias H. Dunkelberger, and William J. Schiller. Second edition. New York: John Wiley & Sons, Inc., 1940. 305 p. 23 cm. \$2.75.

887

Contents (abridged): Part I, The theoretical background of qualitative analysis: Introduction. Reagents. Reactions. The nature of solutions. Electrolytes. Reaction velocity, mass action and the law of chemical equilibrium. The equilibrium law applied to ionization: ionization constants. The equilibrium law applied to precipitation: the solubility-product principle. The application of the equilibrium law to hydrolysis. Additional types of equilibrium systems. Electrochemical theory of oxidation-reduction (redox) reactions. Part II, The reactions of the cations: The apparatus and technique of semi-micro analysis. Preliminary considerations. Group I, the hydrochloric acid group. Group II, the hydrogen sulfide group. Group III, division B. Group III, the ammonium hydroxide and ammonium sulfide group. Group III, division B. Group IV, the ammonium carbonate group. Group V, the soluble cation group. Part III, The reactions of the anions. Group I, the calcium nitrate group. Group II, the barium nitrate group. Group III, the zinc nitrate group. Group IV, the silver nitrate group. Group V, the soluble anion group. Part IV, Systematic semi-micro analysis. Appendix. Index.

Note: This textbook applies the methods and technique of microanalysis to the ordinary (macro) schemes of qualitative analysis. Attention is focused on conducting separations, washings, filtration, and similar operations. Important revisions were made in the second edition. The theoretical material was rewritten and brought in line with present-day concepts. There was a considerable revision and improvement of the cation section, including a reduction in the number of special, additional tests. The book presents a complete new anion scheme, following a systematic separation similar to the cation scheme. Study and review questions and problems are supplied.

ENGELDER, CARL JOHN

A textbook of elementary quantitative analysis. Third edition. New York: John Wiley & Sons, Inc., 1943. 283 p. 23 cm. \$2.75.

888

Contents: Part I, Fundamental principles of quantitative analysis: General considerations of quantitative analysis. Part II, Volumetric analysis: The theory, technique and calculations of volumetric analysis. Neutralization methods. Oxidation and reduction methods. Volumetric precipitation methods. Part III, Gravimetric analysis: The theory, technique and calculations of gravimetric precipitation methods. Representative gravimetric precipitation procedures. Part IV, Systematic quantitative analysis. Systematic analysis. Appendix. Index.

Note: A textbook for college students who have completed a course in qualitative analysis. In the third edition it has been largely rewritten. In the interest of a more logical presentation, the material on volumetric precipitation methods immediately precedes that on gravimetric precipitation methods. Thus, the concepts of equivalent weights and normal solution are introduced with acids and bases. The volumetric procedure for chloride determination has been added. The entire content of the book has been modernized by the use of better indicators, less emphasis on titers, and similar changes. Brief outlines are given for the procedures for limestone and brass. A chapter on systematic quantitative analysis is now included. The amount of problem work has been increased, and the problems have been rearranged, some with and some without answers.

EVANS, WILLIAM LLOYD, AND OTHERS

Semimicro qualitative analysis, by William Lloyd Evans, Alfred Benjamin Garrett, and Laurence Larkin Quill. Boston: Ginn and Company, 1940. 245 p. illus. 27 cm. Paper, \$2.00.

888a

Contents (abridged): Introduction to semimicro qualitative analysis: General information about qualitative analysis. General instructions. The cations: Introductory exercise. A lecture-demonstration exercise (chemical conduct of the common cations). The procedure of analysis of a substance for cations. The anions: Introduction. Introductory exercise. A lecture-demonstration exercise (chemical conduct of the common anions). General review questions. The procedure of analysis of a substance for anions. Analysis of a substance of unknown composition. The theory of

qualitative analysis: Outline of the theory of qualitative analysis. Appendixes. Index.

Note: A laboratory manual for the college student which gives the essential chemical facts, theories, and principles as well as numerous exercises in the necessary general laboratory skills. It includes basic chemical and physical-chemical ideas needed in the study of physics and biology, medicine, agriculture, and home economics. Complete working directions are included for qualitative separations and detections of the common cations and anions on the semimicro scale. There are preliminary tests for each of the groups studied, a block outline for the method of analysis, a flow sheet, notes, review questions, and a laboratory record sheet. For colleges that prefer the classical macro technique of analysis the publishers have issued *An elementary course in qualitative analysis*, by W. L. Evans and others, Boston, 1940, 234 p., paper, \$2.00.

FALES, HAROLD ATHELSTANE, AND FREDERIC KENNY

Inorganic qualitative analysis; semi-micro technique. New York: D. Appleton-Century Company, Incorporated, 1943. 237 p. illus. 22 cm. \$2.65.

889

Contents: General considerations—units of concentration. Types of compounds. Strong electrolytes—weak electrolytes. Hydrolysis of salts. Solubility product. Complex ions. Oxidation-reduction theory. Laboratory procedure. Appendix. Index.

Note: The purpose of this book is to give the student a firm grasp of many fundamental principles applying to solutions of electrolytes and to make him proficient in the technique of qualitative method. Emphasis is placed on the experimental foundations of the principles discussed. The book sets forth a comprehensive scheme of analysis of the cations and a few anions, employing semimicro technique, accompanied by explanatory discussion and equations.

FALES, HAROLD ATHELSTANE, AND FREDERIC KENNY

Inorganic quantitative analysis. New edition. New York: D. Appleton-Century Company, Incorporated, 1939. 713 p. illus. 22 cm. \$4.00.

890

Contents: Scope and nature of subject. General operations, apparatus and reagents. Precision. Weighing. Volumetric measurements. Properties of aqueous solutions of electrolytes. Acidimetry—alkalimetry. Standard acids and alkalies. Solubility product. Application of solubility product principle. Determination of calcium and magnesium. Determination of zinc gravimetrically and volumetrically. Organic precipitants and non-aqueous solvents. Oxidation-reduction theory. Oxidimetric methods for the determination. Determination of manganese oxidimetrically and gravimetrically. Iodimetric methods. Theory of electrodeposition. Electrolytic determination of copper. Analysis of non-ferrous and ferrous alloys. Methods involving evolution and measurement of gases. Introduction to the systematic analysis of a silicate rock. Electrometric methods. Photometry.

Note: Designed not only to supply the textbook needs of university and college courses, but also to serve as a manual for the industrial analyst and professional research worker. It presents a full and practical treatment of theory, and thorough discussions of methods and techniques. It contains 62 laboratory exercises and a large number of examples which illustrate points covered by the text.

FLAGG, JOHN FERARD, AND WILLARD R. LINE

Semimicro qualitative analysis; a course in applied chemical equilibrium. New York: D. Van Nostrand Company, Inc., 1943. 140 p. illus. 22 cm. \$1.50.

891

Contents: Theory: Introduction. Chemical equilibrium. Homogeneous equilibria. Heterogeneous equilibria. Oxidation-reduction reactions. Technique of semimicro qualitative analysis. Procedures: Preparation of unknowns for cation analysis. Cation group I. Cation group II. Cation group III. Cation group IV. Cation group V. Preparation of the anion solution. Preliminary tests for anion constituents. Sulphate group. Special tests. Special procedures for ferro-alloys. Treatment of alloys containing a high percentage of aluminum. Appendix.

Note: This book is designed for courses in elementary qualitative analysis usually taken by students in their second college year. It teaches the principles of chemical equilibrium, and

applies them systematically to the analysis of inorganic substances. The laboratory work is on the semimicro scale, which requires the use of only small quantities of material. The laboratory methods have been tried in the authors' classes and have been found to be within the ability of the average student.

GIBB, THOMAS ROBINSON PIRIE *1927*

Optical methods of chemical analysis. New York: McGraw-Hill Book Company, Inc., 1942. 391 p. illus. 23 cm. (International chemical series, L. P. Hammett, consulting editor) \$5.00.

892

Contents: Spectrochemical analysis. The spectrophotometer. The colorimeter, turbidimeter, nephelometer, and fluorophotometer. The microscope. Elementary crystallography. Identification of crystals with the polarizing microscope. The refractometer. The polariscope.

Note: In this contribution to the literature of analytical chemistry the author covers the fundamental theory, the design, and the practical application of the ten optical instruments which are most widely used in organic and inorganic chemical analysis. Emphasis is placed on the design and technique of modern rapid methods of micro and macro analysis by means of the spectrograph, spectrophotometer, colorimeter and allied instruments, refractometer, microscope, and polariscope.

HALL, WILLIAM THOMAS

Textbook of quantitative analysis. Third edition. New York: John Wiley & Sons, Inc., 1941. 364 p. illus. 23 cm. \$3.00.

893

Contents: Part I, Introduction. Volumetric analysis; apparatus and units. Concentration of solutions; calculations of volumetric analysis. Acidimetry and alkalimetry; analysis of soda ash and oxalic acid; supplementary procedures. Oxidation and reduction: (a) Potassium dichromate methods. Oxidation and reduction: (b) Potassium permanganate methods. Oxidation and reduction: (c) Ceric sulfate method. Oxidation and reduction: (d) Iodimetry. Gravimetric analysis; general principles. Determinations of chlorine, iron, and sulfur in simple salts. Phosphoric acid in apatite; analysis of limestone or Portland cement. Theory of electrolysis; analysis of brass. Part II, Analysis of silicates. Determination of phosphorus in steel. Manganese in steel. Carbon in iron and steel. Nickel, chromium and vanadium in iron and steel. Sulfur, silicon, and tungsten in steel. Some practical methods of ore analysis. Analysis of bearing metals (anti-friction metals). Potentiometric titrations. Tables. Index.

Note: An elementary college textbook on quantitative analysis. In this edition, recent developments are included. For instance, the discussion of the theory of indicators has been thoroughly revised. The treatment of oxidation-reduction indicators has been amplified. The book now offers an expanded section on colloidal solution, flocculation and peptization, aging of precipitates, coprecipitation, and postprecipitation. The method of analyzing steel has been revised in accordance with recent information. The number of problems has been increased by about thirteen percent, and answers are given to some of the more difficult ones. Many of the illustrations have been replaced by new ones. A suggested outline for laboratory work is given.

HAMILTON, LEICESTER FORSYTH, AND STEPHEN G. SIMPSON

Calculations of quantitative chemical analysis. Third edition. New York: McGraw-Hill Book Company, Inc., 1939. 293 p. illus. 21 cm. (International chemical series, J. F. Norris, consulting editor) \$2.50.

894

Contents: General and gravimetric analysis: Computation rules of quantitative analysis. Chemical equations. The chemical balance. Equilibrium constants. Calculations of gravimetric analysis. Electrolytic methods. Calculations from reported percentages. Volumetric analysis: Calibration of measuring instruments. Concentration of solutions. Acidimetry and alkalimetry. Oxidation and reduction methods. Saturation or precipitation methods. Electrometric methods. Potentiometric titrations. Gas analysis: Calculations of gas analysis. Common analytical determinations. Problems on specific determinations. Appendix. Index.

Note: A treatment of the stoichiometric principles involved in quantitative chemical analysis. The book is designed to aid the student in learning to solve practical problems and to interpret

analytical data. The text has been revised in this edition and facts have been rewritten. An outline of the more common analytical determinations has been added.

HAMMETT, LOUIS PLACK

Solutions of electrolytes, with particular application to qualitative analysis. Second edition. New York: McGraw-Hill Book Company, Inc., 1936. 238 p. illus. 21 cm. (International chemical series, J. F. Norris, consulting editor) \$2.25.

895

Contents: Part I, Principles: Introduction. The solubility product principle. Weak electrolytes: the law of chemical equilibrium. The ionization of water: acidity and basicity: hydrolysis. Complex compounds. Oxidation-reduction reactions. Oxidation potentials. Part II, Experiments: Introduction. The course of laboratory instruction. Questions on the experiments. The method of analysis. Special notes on the method of analysis. Further analytical methods. Appendixes: The lecture experiments. The schedule of laboratory work. Reagents. Apparatus.

Note: A combination text and laboratory manual for college courses in qualitative analytical chemistry. This second edition incorporates the new theories of the ionization of acids and bases, the new theories of inorganic colloidal solutions, and other material not in the first edition.

HEISIG, GLADSTONE BERING

The theory and practice of semimicro qualitative analysis. Philadelphia: W. B. Saunders Company, 1943. 331 p. illus. 22 cm. \$2.50.

896

Contents (abridged): Solution and ionization. Chemical equilibrium. Application of law of mass action to saturated solutions. Oxidation and reduction. Hydrogen sulfide as precipitating agent. Hydrolysis and amphiprotic substances. Activity concept. Cations. Anions. Appendix. Index.

Note: This textbook is designed to meet the objective of a college elementary course in qualitative analysis and to acquaint the student with the properties and reactions of the ions of the twenty-four common metals and the anions of the twenty-four common acids. The text is divided into two parts. The theory of qualitative analysis is discussed in the first part with problems of varying difficulty placed at the close of each chapter. Systematic analysis of cations and anions is considered in Part II. A short discussion of the properties of the ions of each group is followed by a sufficient number of preliminary experiments to enable the instructor to select those deemed necessary to round out the student's knowledge of the properties of the ions. The material is adapted for use with various types of equipment—filtration, pressure bulb method, or centrifuge.

HOGNESS, THORFIN RUSTEN, AND WARREN C. JOHNSON

Qualitative analysis and chemical equilibrium. Revised edition. New York: Henry Holt and Company, 1940. 538 p. illus. 22 cm. \$3.00.

897

Contents: International atomic weights (inside front cover). The physico-chemical picture of solids, liquids, and solutions. Reaction velocity and chemical equilibrium. Equilibria involving weak acids and bases. Heterogeneous equilibrium; the solubility product; colloids. Polybasic acids; precipitation with hydrogen sulfide. The ionization of water; hydrolysis. Equilibria involving complex ions. Amphoteric substances. Oxidation and reduction. Laboratory techniques. The alkali metal group of ions. The silver groups of ions. The copper-arsenic group of ions. The aluminum-zinc group of ions. The alkaline earth group of ions. Analysis of the positive ions. The preparation of a sample for analysis; analysis of solids. Identification of negative ions. The chemical properties of negative ions. Appendix: List of desk apparatus; lists of reagents and test solutions; mathematical operations; table of ionization constants of weak acids; table of ionization constants of weak bases; table of solubility product constants; table of dissociation constants of complex ions; answers to problems; table of physical properties of compounds of ions of the analytical groups. Index. Logarithms. A modification of Mendeléeff's periodic table (inside back cover).

Note: A comprehensive and thorough revision of a successful college textbook. The authors have brought the work up to date and have considerably expanded its scope. Laboratory procedures

are now designed for centrifugation as well as for filtration processes, and parallel outlines of both techniques are provided wherever necessary. Revision of the theoretical part of the volume has been limited to a full restatement of the essential ideas in terms of the Brönsted conceptions, so that it is possible for the instructor to interpret the chemical picture in two ways. The theoretical part of the book is also published separately under the title, *Ionic equilibrium as applied to qualitative analysis*, Holt, 1941, 306 p., \$2.15.

HUNTRESS, ERNEST HAMLIN, AND SAMUEL PARSONS MULLIKEN

547
H922
Identification of pure organic compounds; tables of data on selected compounds of order I (compounds of carbon with hydrogen or with hydrogen and oxygen). New York: John Wiley & Sons, Inc., 1941. 691 p. 23 cm. \$7.50. 898

Contents: Introduction. The generic tests of order I. Aldehydes. Carbohydrates. Acids. Phenols. Esters. Acid anhydrides and lactones. Ketones. Alcohols. Ethers, hydrocarbons, etc. Colored compounds of order I (suborder II). Tables of melting points of series of derivatives of compounds of order I. General indexes for order I.

Note: Presents in organized and accessible form a summary of data on a selected list of organic compounds containing carbon and hydrogen, and oxygen. Selection has been made on the basis of interest, commercial importance, and possible commercial value. Compounds are classified in nine genera on the basis of generic tests, applied in order until one is positive. Assignment to a division or section within a genus is made upon the basis of physical properties, including specific gravity, and also on occasion by special tests. A new feature is the inclusion of melting-point sequence tables of derivatives.

KAMM, OLIVER

Qualitative organic analysis; an elementary course in the identification of organic compounds. Second edition. New York: John Wiley & Sons, Inc., 1932. 311 p. illus. 23 cm. \$2.75. 899

1936
Contents: The method of qualitative organic analysis. The solubility behavior of organic compounds. Classification reactions: hydrocarbons and their oxygen and halogen derivatives. Classification reactions: the simple nitrogen and sulfur compounds. Classification reactions: compounds with unlike substituents. Procedure for the analysis of an individual compound. Determination of physical constants and analysis for the elements. Laboratory work on the solubility behavior of organic compounds. Laboratory work on classification reactions of organic compounds. Preparation of derivatives. Qualitative analysis of substituent groups. Examination of mixtures. Classified tables of compounds. Index.

Note: Like the first edition, the book is divided into three sections: Theoretical, Laboratory, and Classified tables of compounds. This edition has been thoroughly revised and expanded. The author adopts solubility behavior as the means of grouping organic compounds into seven principal classifications.

KANNING, EUGENE WILLIAM

Quantitative analysis. Revised edition. New York: Prentice-Hall, Inc., 1941. 471 p. illus. 23 cm. (Prentice-Hall chemistry series; W. M. Latimer, editor) \$4.00. 899a

Contents: Part I, Fundamental principles of quantitative analysis: The analytical balance and weighing. General considerations in the execution of quantitative methods. Principles of gravimetric analysis. Fundamentals of electroanalysis. General principles of volumetric analysis. Theory of neutralization reactions. Volumetric precipitation and complex-formation reactions. Oxidation-reduction reactions. Theory of electrometric methods of analysis. Part II, Laboratory experiments in quantitative chemical analysis: Gravimetric determinations. Electroanalytical determinations. Volumetric determinations. Colorimetric determinations. Electro-metric analysis. Appendix. Index.

Note: In this introductory college text the theoretical and experimental divisions are definitely set apart, permitting the instructor to use either section without discontinuity. Part I includes a theoretical treatment of the laws and theories which apply to chemical analysis, general instructions concerning the execution of various quantitative methods, and the principles of

gravimetric and volumetric analysis. Part II consists of a representative group of standard analytical procedures which cover the subject as taught in colleges and universities. In the revised edition a more rigorous and complete treatment of the fundamental principles is included and a number of new experiments have been added.

KELSEY, ERWIN BURR, AND HAROLD G. DIETRICH

Fundamentals of semimicro qualitative analysis. New York: The Macmillan Company, 1940. 350 p. illus. 22 cm. \$2.75. 900

Contents: I, Fundamental theory: The nature of substances. The properties of solutions. Salts, acids, and bases. Equilibrium. Heterogeneous equilibrium. Complex ions. Equilibria involving the ions of water. Principles of oxidation-reduction. II, Analytical procedure: General direction. Preliminary operations. Part I, The systematic cation analysis: The silver group. The acid hydrogen sulfide group: Copper sub-group—tin sub-group. The iron group. Separation of the iron group in the presence of phosphates. The nickel group. The calcium group. The soluble group. Exercises for general cation review. Part II, Detection of the non-metal ions: The silver group anions. The barium group anions. The soluble group anions. The systematic analysis for the anions. The analysis of solids or mixtures of solids: Metals and alloys. Appendix: Exponents and logarithms. Reagents and test solutions. List of apparatus. Composition of practice solutions. Table of solubility products. Solubility chart. Logarithms of numbers. Index: International atomic weights, 1940.

Note: The authors restrict the term "semimicro" to procedures of analysis which employ original samples of the order of 0.3 ml. (about 10 drops) and in which the amounts of the individual ions present average about 1 mg. The text offers a certain flexibility in that the user may vary the number of practice solutions and unknowns to suit his preference. It may be used either in general chemistry courses or in the courses devoted almost entirely to qualitative analysis.

KOLTHOFF, IZAAK MAURITS

Acid-base indicators. Translated by Charles Rosenblum. New York: The Macmillan Company, 1937. 414 p. illus. 22 cm. \$7.00. 901 ✓

Contents: The dissociation of strong and weak electrolytes: The reaction (degree of acidity) of acid, bases and salts. Amphoteric substances. The ion activity theory and its application to acid-base equilibria. The Brönsted definition of acidity and basicity, properties of acids and bases. The properties of acid-base indicators: The color change and properties of indicators. The influence of solvents on the properties of indicators. The theory of indicators. The colorimetric determination of hydrogen ion concentration: Buffer solutions, preparation and properties. The colorimetric determination of hydrogen ion concentration. Sources of error in the colorimetric method. Indicator papers. Appendix. Index.

Note: This manual, originally published in German, has been brought up to date by the author for this first edition in English. It is valuable as a handbook and reference for work in analytical chemistry.

KOLTHOFF, IZAAK MAURITS, AND H. A. LAITINEN

pH and electro titrations; the colorimetric and potentiometric determination of pH. Potentiometry, conductometry, and voltammetry (polarography). Outline of electrometric titrations. Second enlarged and revised edition. New York: John Wiley & Sons, Inc., 1941. 190 p. illus. 23 cm. \$3.00. 902 ✓

Contents: The colorimetric determination of pH—acid-base equilibria: Acids and bases. The reaction of aqueous solutions. Acid-base indicators. The colorimetric measurement of pH. The potentiometric measurement of pH—potentiometric titrations: Electrode potentials. The technique of potentiometric measurements. The potentiometric measurement of the hydrogen ion activity. Potentiometric titrations. Conductometric titrations: Conductometric titrations. Voltammetry (polarography) and amperometric titrations: The fundamental principles of voltammetry. Equipment and technique used in voltammetry. Amperometric titrations. Index.

Note: Workers in pure and applied chemistry, as well as those in the allied fields of biochemistry, physiological chemistry, bacteriology, and pharmacy, find this book useful. It contains a condensed outline of the measurement of pH according to the colorimetric and potentiometric method and of the performance of potentiometric and conductometric titrations. A general understanding of physical chemistry and electrochemistry is basic to the study of this book. Considerable new material was added to the second edition. Three new chapters have been included, forming Part IV on voltammetry and amperometric titrations. A list of reactions which have been made the basis of conductometric titrations, with literature references, has been added.

KOLTHOFF, IZAAK MAURITS, AND N. HOWELL FURMAN

Potentiometric titrations; a theoretical and practical treatise. Second edition, extensively revised. New York: John Wiley & Sons, Inc., 1931. 482 p. illus. 23 cm. \$6.00. 903

Contents: Part I, Fundamental principles: General introduction. Relation between the change of the ion concentrations and electrode potential in combination reactions of ions. The relation between the change in the ratio oxidant: reductant and the electrode potential in oxidation-reduction reactions. General conditions for the performance of potentiometric titrations. Part II, The technique of potentiometric titrations: The classical potentiometric method. The detection of the end-point in a potentiometric titration. Part III, Practical applications: Precipitation and complex-formation reactions, with metallic or non-metallic electrodes. Neutralizations. Oxidation-reduction reactions. Oxidation with permanganate. Oxidation with bichromate. Oxidation with ceric sulphate. Oxidation with potassium iodate. Oxidation with potassium bromate. Titration with other oxidants. Applications of the ferri-ferrocyanide electrode. Reduction with ferrous sulphate. Reduction with iodide. Reduction with arsenic trioxide. Reduction with titanous salts. Reduction with chromous chloride or sulphate. Reduction with stannous chloride. Miscellaneous methods. Bibliography. Tables. Indexes.

Note: The second edition of this treatise and reference work for chemists on the determination of strength of solution by potentiometric methods contains less theoretical material than the first edition but includes new chapters on the technique of potentiometric titrations developed between 1926 and 1931, together with discussions of new reagents such as chromous chloride and ceric sulphate. The bibliography has been expanded to contain about 700 references to the world literature on the subject.

KOLTHOFF, IZAAK MAURITS, AND E. B. SANDELL

Textbook of quantitative inorganic analysis. Revised edition. New York: The Macmillan Company, 1943. 794 p. illus. 22 cm. \$4.50. 904

Contents (abridged): Stoichiometry—expression of results. Gravimetric analysis: The mass action law. Solubility and solubility product. Quantitative separations. The formation and properties of precipitates. Theory of electroanalysis. Reagents. Apparatus. Balance, weights, and weighing. Gravimetric determinations: Determination of water. Determination of chlorine in soluble chlorides. Determination of iron. Determination of aluminum. Determination of sulfur as barium sulfate. Determination of calcium. Determination of magnesium. Analysis of limestone. Determination of phosphorus. Determination of silica. Determination of sodium and potassium. Electrolytic determinations. Volumetric analysis: General discussion of volumetric analysis. Theory of acidimetry and alkalimetry. Theory of precipitation and complex-formation analysis. Theory of oxidation-reduction reactions. Physico-chemical determination of the end point—electrometric titrations. Volumetric determinations: Acidimetry and alkalimetry. Argentimetric and mercurimetric determinations. Permanganimetric methods. Titrations with potassium dichromate and ceric sulfate. Iodimetric and iodometry. Potassium bromate and calcium hypochlorite as standard reagents. Physico-chemical methods: Colorimetry and spectrophotometry. Analyses of complex materials: Analysis of brass. Analysis of steel. Analysis of silicate rocks. Appendix. Index to authors. Index to subjects. Table of atomic weights.

Note: A comprehensive text and useful reference for the student in advanced chemical work. Completely revised, this edition contains many improvements. Among these are the extensive discussions of modern abridged spectrophotometry and of errors in analytical chemistry; a complete list of oxidation-reduction indicators with oxidation potentials; and comprehensive discus-

sions of electrometric titrations and the properties of precipitates, coprecipitation, postprecipitation, and aging.

KOLTHOFF, IZAAK MAURITS, AND V. A. STENGER

Volumetric analysis. Second revised edition. Volume I: Theoretical fundamentals. New York: Interscience Publishers, Inc., 1942. 309 p. illus. 23 cm. \$4.50. 905

Contents: Fundamentals of volumetric analysis. The principles of neutralization and ion combination reactions. Titration curves for neutralization and ion combination reactions. The principles of oxidation-reduction reactions. Titration curves. Indicators. Titration error. Reaction velocity; catalysis and induced reactions. Adsorption and coprecipitation phenomena. Volumetric methods of organic analysis. Methods for the determination of the equivalence-point. Appendix. Indexes.

Note: A revision and enlargement of volume I of the first author's original two-volume work which first appeared in Germany in 1926. The present volume is not a translation but follows the general design of the former work, with new and revised material on such topics as oxidation-reduction indicators, catalysis and induced reactions, organic analysis, equivalence-point and amperometric titrations using polarized electrodes. Volume II, the revised edition of which is in preparation, will deal with the practical applications and methods. Bibliographic notes are given in the text.

LUNDELL, GUSTAV ERNST FREDRICK, AND JAMES IRVIN HOFFMAN

Outlines of methods of chemical analysis. New York: John Wiley & Sons, Inc., 1938. 250 p. illus. 23 cm. \$3.00. 905a

Contents (abridged): Occurrence of the elements. Sampling. Preparation of the solution for analysis. Methods for separating the elements. Special procedures for separating the elements. Methods for determining the elements. Gravimetric methods based on the use of organic reagents. Acidimetry and alkalimetry. Oxidation and reduction. Potentiometric methods. Electrolytic methods. Colorimetric methods. Diagrammatic outlines of methods of analysis. Evaluation of results. Index.

Note: The authors have kept certain major aims in view; to furnish information concerning the behavior of all the elements in the more important reactions that are used in analytical chemistry, and to stimulate the search for more selective reagents. Accordingly, the book offers a presentation, largely tabular, of the results that can be expected if the methods of analysis are applied, in the presence of all the elements, with the common reagents as well as many of the uncommon ones. Detailed descriptions of procedures and extensive references to the literature have been omitted, in order to avoid duplication of matter already contained in *Applied inorganic analysis* by Hillebrand and Lundell (see Index), which this book is intended to supplement. The book is designed for use in the industrial and college laboratory, or by any chemist engaged in the analysis of inorganic materials.

MCALPINE, ROY KENNETH, AND BYRON A. SOULE

Fundamentals of qualitative chemical analysis. Second edition. New York: D. Van Nostrand Company, Inc., 1941. 375 p. illus. 22 cm. \$2.50. 906

Contents: Introduction. Chemical arithmetic. Formulas and equations. Ionization theory in analytical processes. Introduction to laboratory work. Group I—lead, silver, mercury. Study aids. Copper division of Group II—mercury, lead, bismuth, copper, cadmium. Group III—iron, chromium, aluminum. Group IV—zinc, manganese, cobalt, nickel. Group V—barium, strontium, calcium. Group VI—magnesium, sodium, potassium, ammonium radical. Arsenic division of Group II. Arsenic, antimony, tin. The more common acid radicals. Other common acid radicals. Qualitative examination of simple dry unknowns. Complex dry unknowns. Appendix.

Note: This college textbook is designed for classes of average length and scope. In addition to the discussion of principles and the directions for the separation and identification of the common metal and acid radicals, it includes sets of laboratory exercises for the analysis of known solutions. They have been designed to give the student an understanding of the chemical properties and reactions of the various elements, as well as the

manipulative experience he needs to undertake the analysis of unknown solutions.

MCALPINE, ROY KENNETH, AND BYRON A. SOULE

Introduction to qualitative chemical analysis.
New York: D. Van Nostrand Company, Inc., 1939. 118 p. 22 cm. \$1.50. 906a

Contents (abridged): Part I, Reactions of non-metals and metals: Fluoride, chloride, bromide, and iodide ions. Chlorate and iodate ions. Hydrogen peroxide. Sulfide ion. Sulfite ion. Sulfate ion. Nitrate ion. Nitrite ion. Phosphate ion. Carbonate ion. Oxalate ion. Borate ion. Silicate ion. Potassium and sodium ions. Ammonium ion. Barium, strontium, and calcium ions. Magnesium and aluminum ions. Chromium and manganese ions. Part II, Practical exercises in identification: Fluoride, chloride, bromide, iodide, chlorate, iodate, peroxide, sulfide, sulfite, sulfate, nitrate, nitrite. Phosphate, carbonate, oxalate, borate, silicate. Potassium, sodium, ammonium, barium, strontium, calcium, magnesium, and other elements. Appendix. Index.

Note: Presents a simple experimental treatment of the problems and methods of qualitative analysis. It is limited to the work which might reasonably be covered in a year's course in general chemistry. Reactions of the metals and radicals commonly studied in the systematic course in qualitative analysis are treated rather fully, so that this work may serve as an introduction to such a course. The order of treatment is in general that of the standard college textbook of first year chemistry.

MCALPINE, ROY KENNETH, AND BYRON A. SOULE

Qualitative chemical analysis; certain principles and methods used in identifying inorganic substances together with a systematic survey of the chemistry of these materials. Based upon the text by A. B. Prescott and O. C. Johnson. New York: D. Van Nostrand Company, Inc., 1933. 696 p. illus. 23 cm. \$4.50. 907

Contents: Part I, The principles of analytical chemistry: The aim of qualitative analysis. Requirements of group reagents. The theory of reversible reactions. Reactions of inorganic substances in aqueous solutions. Applications of chemical theory in qualitative analysis. The solubility problem in analytical chemistry. The delicacy of precipitation and color reactions of the metals. Part II, The metals: The silver group (first group). The arsenic and copper group (second group). Rarer metals of the second group. The iron group (third group). The zinc group (fourth group). The combined precipitation of groups III and IV by $(\text{NH}_4)_2\text{S}$. Interference of phosphates and oxalates in the separation of group III from later groups. The rarer metals of the iron and zinc groups. The calcium group (fifth group). The alkali group and magnesium (sixth group). Part III, The non-metals. Part IV, Systematic examinations: Removal of organic substances. Preliminary examination of solids. The analysis of dry unknowns. Interference of metals with the tests for acid radicals. Reactions of a few common reagents. Solubilities in a few common solvents. Appendix.

Note: This college textbook has been designed for long and intensive courses. It covers the principles of qualitative analysis, and their applications to the separation and identification of the various common metals and acid radicals. In addition, it gives for each of the rare elements as well as the common ones, an account of the chemical reactions and properties which are important in chemical analysis. Because of its scope, it is useful also as a reference book.

MELDRUM, WILLIAM BUELL, AND EARL WILLIAM FLOSDORF

Qualitative analysis of inorganic materials.
New York: American Book Company, 1938. 230 p. illus. 22 cm. \$1.25. 908

Contents: Part I, Fundamental principles: Scope and methods of qualitative analysis. Symbols and abbreviations. The ionic theory. Quantitative applications. Ionic equations. The Brønsted theory of acids and bases. The colloidal state. Problems and exercises. Part II, Laboratory work: A note to the instructor. General information and directions to the student. Preliminary work. Experiments. Reactions of the ions. Identification of pure sub-

stances. Systematic analysis of the cations. Systematic analysis of the anions. Part III, Appendix. Index. Atomic weight tables.

Note: This text is intended primarily for students with a limited knowledge of chemistry and as a consequence the laboratory work is described very simply in step-by-step procedure, with a few preliminary experiments given to familiarize the student with laboratory practice. The main feature of the work is the very simple and systematic analysis of the anions, in which a single sample is provided rather than isolated tests. The subject of chemical equilibrium as applied to ionization and its expression in ionic equations is covered in some detail. Somewhat advanced theories are also discussed in order to lay a foundation for more advanced courses.

MELDRUM, WILLIAM BUELL, AND OTHERS

Semimicro qualitative analysis of inorganic materials, by William Buell Meldrum, Earl William Flosdorf, and Albert Frederick Daggett.
New York: American Book Company, 1939. 368 p. illus. 22 cm. \$2.75. 909

Contents (abridged): Scope and methods. Symbols and abbreviations. Concentration units. Structure of atoms and molecules. Valence. Valence and atomic structure. Structure of salt crystals. The ionic theory. Quantitative applications of ion concentrations. Gas-solution equilibria. Solid-solution equilibria. Ionic equations. Formations of weakly ionized substances. Common-ion effects. Hydrolysis of salts. Formation of sparingly soluble substances. Formation of complex ions. Reactions due to amphotericism. Oxidation-reduction reactions. The distribution law. The colloidal state. Index.

Note: Only semimicro methods are employed in this text for the testing for individual ions and for their systematic separation and identification in mixtures. The text furnishes a concise discussion of the theory of qualitative analysis, present trends in solution chemistry, and easily understood laboratory directions. References for special reagents and general references are given in the appendix.

MELLAN, IBERT

Organic reagents in inorganic analysis. Philadelphia: The Blakiston Company, 1941. 682 p. illus. 23 cm. \$9.00. 910 ✓

Contents (abridged): Fundamental theories and principles. Alphabetical list of organic reagents used in analytical procedures. Indicators. Atomic weights. Alphabetical list of substances and radicals. Indexes.

Note: This reference book for chemists and chemical engineers is in three parts. First, the basic principles of combination of inorganic ions or radicals with various types of organic compounds; second, the reagents and their individual properties; third, the substances and radicals determined together with several methods given for each. Two hundred forty-three organic reagents are described, 699 graphical formulas given, 501 procedures and numerous bibliographic references are included.

MELLON, MELVIN GUY

Methods of quantitative chemical analysis; an introduction to their theory and technic. New York: The Macmillan Company, 1937. 456 p. illus. 22 cm. \$3.00. 911 ✓

Contents: Introduction: General notes. Experimental data. Management of work. The sample: Selection and preparation. Measurement by mass. Measurement by volume. Preliminary treatment. The desired constituent, methods of separation: Volatilization methods. Precipitation methods. Electrochemical methods. Extraction methods. The desired constituent, methods of measurement (specific property methods): Mass indirectly, titrimetric methods. Titrations involving neutralization. Titrations involving oxidation-reduction. Titrations involving precipitation. Mass directly, gravimetric methods. Volume, volumetric methods. Pressure, manometric methods. Temperature, thermometric methods. The desired constituent, methods of measurement (systematic property methods): Density and specific gravity methods. Optico-chemical methods. Electrometric methods. Other physico-chemical methods. Index.

Note: In place of the usual division under gravimetric and volumetric methods, procedures are treated here under selection and measurement of the sample, and methods of separation and measurement of the desired constituent. Material under measurement of the desired constituent is further divided into specific and systematic property methods. This arrangement enables the

principles and typical applications of the newer methods of quantitative analysis to be treated as a logical and integral part of the course. It also allows the instructor flexibility in that he may introduce his course with either gravimetric or titrimetric methods as desired.

MIDDLETON, ARTHUR RENWICK, AND JOHN W. WILLARD

Semimicro qualitative analysis. New York: Prentice-Hall, Inc., 1939. 446 p. illus. 23 cm. (Prentice-Hall chemistry series, W. M. Latimer, editor) \$4.65. 912

Contents: Use of units in chemical calculations. Logarithms. The gaseous state. Structure of matter. Writing and reading chemical equations. Control of reactions. The law of equilibrium. Homogeneous equilibrium in aqueous solution. Heterogeneous equilibria. Hydrolysis. Equilibrium in complex ions. Equilibrium in redox reactions. Semimicro technique. Properties and reactions of the cations. Preparation for the laboratory work. Introductory study of the cations. Systematic analysis of cations. Properties and reactions of the anions. Introductory study of anions. Systematic analysis of anions. Systematic qualitative analysis. Analysis of nonferrous alloys. Appendix. Subject index.

Note: This textbook is designed for detailed instruction in semimicro analysis. A companion laboratory manual is: W. B. King, *Semimicro experiments in general chemistry*, New York: Prentice-Hall, 1941, 137 p., \$2.50.

NIEDERL, JOSEPH BERTHOLD, AND VICTOR NIEDERL

Micromethods of quantitative organic analysis. Second edition. New York: John Wiley and Sons, Inc., 1942. 347 p. illus. 23 cm. \$3.50. 913

Contents (abridged): Introduction. The balance. Weighing. Weighing equipment. Laboratory utensils. Preparation and weighing of a sample for analysis. Standard solutions. Elementary analysis. Determination of the molecular weight. Structure analysis. Appendices: Bibliography. Author index. Subject index.

Note: Like the earlier edition of this book, the second edition first covers the use of the balance and general methods of microchemical technique. Following this are discussions of the methods of elementary analysis with stress on the determination of nitrogen, carbon, hydrogen, halogens, and sulfur. The next sections are concerned with molecular weight determinations and structure analysis, and an appendix gives practical suggestions for installing a microanalytical laboratory.

NOYES, ARTHUR AMOS

A course of instruction in the qualitative chemical analysis of inorganic substances. Tenth edition, revised and rewritten by Ernest H. Swift. New York: The Macmillan Company, 1942. 418 p. illus. 22 cm. \$2.75. 914

Contents: Part I, The course of instruction: Laboratory experiments. Questions on the experiments. Part II, The system of analysis: The qualitative chemical analysis of inorganic substances. The analysis for the basic constituents. The analysis for the acidic constituents. Appendix: Solubilities. Molar reduction-potentials. Ionization of acids and bases. Dissociation constants of complex ions. Atomic weights of the common elements. Preparation of the reagents. Preparation of the test-solutions. Equipment. Index.

Note: Organized on the same plan as the previous editions, the new tenth edition contains a complete course of laboratory experiments, suitable for use either in the second half of the freshman course in chemistry or for more advanced courses in qualitative analysis, together with questions on these experiments and a full system of analysis for the metallic elements and the more important acidic constituents. In the new edition the discussions of theory and the procedures given in the system of analysis have been extended and made consistent with present views.

PIERCE, WILLIS CONWAY, AND EDWARD LAUTH HAENISCH

Quantitative analysis. Second edition. New York: John Wiley & Sons, Inc., 1940. 462 p. illus. 23 cm. \$3.00. 914a

Contents: Introduction. Part I, Fundamentals: General directions. The analytical balance and its use. Precision. Errors and significant figures. Preparation of the sample for analysis. Part II, Volumetric analysis: Methods and apparatus. Neutralization: methods and calculations. Laboratory exercises. Theory. Oxidation-reduction: methods and calculations. Potassium permanganate. Determinations involving iodine. Ceric and dichromate ions. Electrochemical theory. Volumetric precipitation methods. Part III, Gravimetric analysis: Methods and operations. Theoretical aspects of precipitation. Gravimetric analysis of simple mixtures. Analysis of limestone. Part IV, Special methods: Titrations. Colorimetric methods of analysis. Use of analytical literature. Standard samples. Appendix. Index.

Note: A text designed for use in a first-year course in quantitative analysis. However, the arrangement is such as to facilitate its use in a one-semester course. The Appendix contains data on mathematical operations, equilibrium constants, hydrolysis, and a table of logarithms. New material on volumetric methods, preparation of samples, stoichiometry, neutralization, acidimetry, and oxidation-reduction theory has been incorporated in the second edition.

REEDY, JOHN HENRY

Elementary qualitative analysis for college students. Third edition. New York: McGraw-Hill Book Company, Inc., 1941. 156 p. illus. 21 cm. (International chemical series; L. P. Hammett, consulting editor) \$1.50. 915

Contents: Part I, Preliminary laboratory work: Checking in; Preparation of wash bottle and other equipment. Part II, Detection of the ions of the metals: Groups of the metallic ions (cations). Detection of cation groups in a solution. Part III, Detection of the ions of the non-metals. Part IV, Systematic analysis: Removal of organic matter. Dissolving the substance.

Note: The purpose of this book is to build procedures based on chemical facts within the range of the student's training. The present edition is designed to combine the advantages of the semimicro and the micro techniques, while avoiding the limitations of each. The new procedure for the tin sub-group is included; the use of alcohol in sensitizing the separations and tests in the alkali group has been added; and there is a more definite procedure for the detection of the anions.

REEDY, JOHN HENRY

Theoretical qualitative analysis. New York: McGraw-Hill Book Company, Inc., 1938. 451 p. illus. 21 cm. (International chemical series, J. F. Norris, consulting editor) \$3.00. 916

Contents: Part I, Theoretical. Introduction. Solutions. The colloidal state. Mechanics of precipitation. The operations of analytical chemistry. Equilibrium and the mass law. Ionization. Applications of the ionic theory. The precipitation and solution of sulfides. Amphoteric hydroxides and sulfides. Complex ions. Instability constants. Ionization of water. Hydrolysis. Reactions and equations. Part II, Descriptive: Cation groups—reagents and separation. Group I—the hydrochloric acid group. Group II—the hydrogen sulfide group. Group III—the ammonium sulfide group. Group IV—the ammonium carbonate group. Group V—the soluble group. General procedure in anion analysis. Anion group I. Anion group II. Anion group III. Anion group IV. Anion group V. Anion group VI. Dry reactions of analytical chemistry. Systematic analysis.

Note: In this book the author's purpose is to furnish the beginning student of analytical chemistry with the facts and theories upon which qualitative and quantitative analyses are based. Thus the book provides a background of descriptive and physical chemistry without which, in the author's opinion, analysis tends to lapse into mechanical procedure. A feature of the book is the use of ionic instead of molecular equations. The theories of both complete and partial ionization are given.

RIEMAN, WILLIAM, AND OTHERS

Quantitative analysis, a theoretical approach, by William Rieman, III, Jacob D. Neuss, and Barnet Naiman. Second edition. New York: McGraw-Hill Book Company, Inc., 1942. 496 p. illus. 23 cm. (International chemical series; L. P. Hammett, consulting editor) \$3.50. 917

Contents: Introduction. Common apparatus and operations. The balance. Volumetric apparatus. Fundamentals of volumetric analysis. Volumetric determination of chloride ion by Mohr's method. Potentiometric measurements. Ionization of salts, acids, and bases. Acidimetry and alkalimetry: Part I, Standardization of solutions. Acidimetry and alkalimetry: Part II, Analysis of unknowns. Theory of oxidation: Part I, Determination of iron in an ore. Theory of oxidation: Part II, Redox potential. Iodimetry: Part I, The determination of antimony. Iodimetry: Part II, The determination of copper. Gravimetric determination of aluminum. Coprecipitation. Determination of chlorine. Determination of sulfur. Determination of manganese. Colorimetric methods, manganese in steel. Dedox indicators, chromium and vanadium. Determination of phosphorus. Determination of zinc. Organic reagents, determination of nickel. Analysis of brass or bronze. Analysis of limestone. Determination of silicon and tungsten in iron and steel. The measurement of pH and polarography.

Note: Although this edition of a text for college students still emphasizes the theoretical aspects of quantitative analysis, particularly of inorganic substances, more space is now given to descriptions of laboratory work. This change, the replacement of older procedures with modern methods, and other revisions have resulted in an additional seventy pages. Problems are given at the end of each chapter and there are five pages of references. There are separate author and subject indexes.

ROSIN, JOSEPH

Reagent chemicals and standards, with methods of assaying and testing them; also the preparation and standardization of volumetric solutions and extensive tables of equivalents. New York: D. Van Nostrand Company, Inc., 1937. 530 p. illus. 23 cm. \$6.00. 918

Contents: Explanatory notes. The arsenic test. Monographs on the analysis and assay of more than four hundred reagent and standard chemicals. Volumetric solutions. Equivalents of normal and tenth-normal solutions. pH determination. Indicators for pH determinations.

Note: This book gives methods of testing and analysis of more than four hundred chemicals that are important in chemical analysis and research. In each case it gives full directions for the quantitative estimation of impurities, and for the determination of the active substance in the reagent. Detailed methods are furnished for the preparation and standardization of a wide range of volumetric solutions. A number of tables of equivalents and other pertinent information are supplied for reference use.

SCOTT, WILFRED WELDAY, EDITOR

Standard methods of chemical analysis; a manual of analytical methods and general reference for the analytical chemist and for the advanced student. Fifth edition, edited by N. Howell Furman in collaboration with eminent specialists. New York: D. Van Nostrand Company, Inc., 1939. 2 v. illus. (part col.) 24 cm. \$17.00. 920

Contents (abridged): Volume I: Aluminum. Antimony. Arsenic. Barium. Beryllium. Bismuth. Boron. Bromine. Cadmium. Calcium. Carbon. Cerium and the other rare earths. Chlorine. Chromium. Cobalt. Columbium and tantalum. Copper. Fluorine. Gallium. Germanium. Gold. Hydrogen. Indium. Iodine. Iron. Lead. Magnesium. Manganese. Mercury. Molybdenum. Nickel. Nitrogen. Oxygen. Phosphorus. Platinum metals. Radium. Rhenium. Scandium. Selenium and tellurium. Silicon. Silver. The fire assay for gold and silver. Sodium and the other alkali metals. Strontium. Sulfur. Thallium. Thorium. Tin. Titanium. Tungsten. Uranium. Vanadium. Zinc. Zirconium and hafnium. Qualitative tests of substances. Solubility table. Index. Volume II: Standard methods of sampling. Decomposition of the sample. Determination of moisture, water of crystallization. Bituminous substances including asphalts, tars, and pitches. Cement. Coal and coke. Explosives. Fixed oils, fats and waxes. Petroleum oils, fats and waxes. Paints. Paper and paper-making materials. Poisons. Rubber, gutta percha and balata. Slag analysis. Methods of analysis of soaps and soap products. Water analysis. Microscopical and bacteriological examination of water supply. Miscellaneous analyses. Acidimetry and alkalimetry. Determination of pH by the colorimetric method. Electrometric hydrogen ion measurement. Potentiometric methods. Conductometric methods. Gas analysis. Chemical microscopy. Quantitative microchemical analysis. Metal-

lography. Methods for the determination of solubility. Spectrographic analysis. Index.

Note: For many years this work has been a standard reference manual of chemical analysis in industrial and commercial laboratories. It gives in detail the methods used in the quantitative analysis of the chemical compounds of all the elements, including the rare ones; and it applies these methods to the analysis of ores, minerals, alloys, cements, soaps, and many other materials used or produced in the chemical industries. These methods are widely used in the United States in preparing contract specifications for the purchase or sale of materials in quantity. This edition has been revised and enlarged and includes methods for the newer industrial products, and detailed descriptions of newer techniques in quantitative analysis, such as the electrometric, potentiometric, conductometric, and microchemical methods. There are separate author and subject indexes in each volume.

SHRINER, RALPH LLOYD, AND REYNOLD C. FUSON

The systematic identification of organic compounds; a laboratory manual. Second edition. New York: John Wiley & Sons, Inc., 1940. 312 p. illus. 23 cm. \$2.75. 920a

Contents: Introduction. The solubility of organic compounds. The solubility classes. Laboratory exercises in solubility. Definition of solubility. Generalizations. Table of solubilities. The value of solubility determinations. Exercises. The use of classification reagents: Classification reagents, Group A, The classification unknowns. Classification reagents, Group B, Exercises. Procedure for examining and reporting unknowns. Special laboratory methods: The ignition test. The determination of physical properties. Qualitative analysis for the elements. Neutral equivalents of acids. Saponification equivalents of esters. Duclaux constants for volatile aliphatic acids. Molecular weight. The examination of the literature. The preparation of derivatives: The properties of a satisfactory derivative. The selection of the derivative. Exercises. Tables of derivatives. The separation of mixtures. Exercises. The interpretation of experimental data. Problems. Index.

Note: Many advances in methods for the identification of organic compounds have been added to this book in its second edition. A thorough revision of existing chapters has been made. The tables of compounds, now arranged in alphabetical order, have been removed from their original place in the book, and constitute a separate chapter. The material on solubility has been expanded. Five new classification reagents have been introduced, as follows: ceric nitrate, periodic acid, mercuric chloride-sodium ethoxide, iodic acid, and ferrous hydroxide. All classification reagents are fully treated. Numerous new compounds and new derivatives are given. An extended discussion is included on the relationships of physical constants to structure. A chapter is also included offering a discussion of methods for the preparation of derivatives and laboratory procedures, likewise in alphabetical order. The chapter on problems, The Interpretation of experimental data, contains a treatment of the methods of application and of reasoning involving deducing structures from experimental observation.

SMITH, GEORGE MCPHAIL

Quantitative chemical analysis for beginning students, with explanatory notes, questions, and analytical problems. Third edition, revised and enlarged. New York: The Macmillan Company, 1933. 199 p. illus. 22 cm. \$2.50. 920b

Contents: Part I, Introduction: Gravimetric and volumetric analysis. General remarks concerning quantitative work. The operations of analytical chemistry. Part II, Gravimetric analysis: Exercises with the balance. Determinations. Part III, Volumetric analysis: General discussion. Neutralization methods: acidimetry and alkalimetry. Methods of oxidation and reduction. Precipitation methods. Part IV, Questions. Part V, Analytical problems: Preliminary discussion. Problems. Appendix. Index.

Note: A college text intended for use with classes of students who have completed a substantial year's work in elementary chemistry and qualitative analysis, and who are beginning the study of quantitative analysis. The main object of the laboratory sections is to furnish the student with directions sufficient to enable him to do successful work with a minimum of personal oversight from the instructor. The revisions to the third edition consist mainly of the inclusion in Parts I and III of the discussion and work on pH determinations, which involve a revision of the section on neutralization methods.

SMITH, OTTO MITCHELL, AND L. F. SHEERAR

Quantitative chemical methods for engineering students. New York: McGraw-Hill Book Company, Inc., 1944. 1 v. illus. 29 cm. (International chemical series, L. P. Hammett, consulting editor) \$2.50. 921

Contents: "How do you tackle your work?" General instructions to the student. An introduction to chemical literature. Distillation for engineers. Finding information on chemical and engineering subjects. Use of the analytical balance. Analysis of water. Proximate analysis of coal. Determination of heating value of coal, oxygen bomb. Determination of the heating value of coal, peroxide bomb. Gas analysis. Distillation of gasoline or similar products. Flash and fire points. Viscosity of oils. The alloys of lead and tin. Microscopical examination of iron and steel. Corrosion of metals.

Note: Designed for the use and instruction of engineering students who need a more extensive knowledge of the practical applications of chemistry in its quantitative engineering aspects than is generally given in the usual general chemistry course. Emphasis is placed upon the chemist's tools, such as the analytical balance, volumetric equipment, and standardized solutions. The student is also taught to test and analyze those materials which he will use in his professional work.

SPOERRI, PAUL EMMANUEL, AND OTHERS

Principles and practice of qualitative analysis with semimicro laboratory technique, by Paul E. Spoerri, Harold Weinberger, and Robert Ginell. New York: McGraw-Hill Book Company, Inc., 1942. 282 p. illus. 23 cm. (International chemical series; L. P. Hammett, consulting editor) \$2.75. 922

Contents: Theory: Principles of analysis. The periodic and analytical classification of the elements. The atom and the molecule. Complex ions and molecules. The kinetic theory of matter. Reactions of chemical compounds: pure substances. Reactions of chemical compounds: reactions with solvents. Reactions of chemical compounds: oxidation-reduction reactions. Experimental: Introduction. Mental attitudes. Apparatus and technique. Cation analysis, groups I-V. Introduction to blowpipe analysis. Anion analysis, groups I-IV. Complete analysis. Appendix: Unknowns. List of apparatus. Solutions.

Note: This text is designed to stimulate student interest and initiative. After a thorough treatment of atomic structure, the authors take up complex ions and the kinetic theory and then consider the reactions of pure substances, reactions with solvents, and reactions in solutions. The authors have woven the material into an integrated pattern of thought.

SWIFT, ERNEST HAYWOOD

A system of chemical analysis (qualitative and semi-quantitative) for the common elements. New York: Prentice-Hall, Inc., 1939. 589 p. illus. 23 cm. (Prentice-Hall chemistry series, W. M. Latimer, editor) \$5.65. 923

Contents (abridged): The preparation of standard solutions: analytical balance. Method of long swings. Short swings. Preparation of a standard silver nitrate solution. Standardization of iodine solutions. Factors affecting the composition and purity of the precipitate. Operations of gravimetric analysis. System of analysis for the basic constituents: preparation of the sample. Analysis of the copper group. Tin group. Alkaline earth group. Aluminum group. System of analysis for the acidic constituents: analysis for sulfide. Cyanide. Sulfite. Ferrocyanide and ferricyanide. Halide group. Phosphate group. Detection and estimation of sulfate and fluoride. Analysis of sodium carbonate solution for nitrate, borate, and acetate. Appendix: suggested source of instruction; questions and problems; tables, reagents and chemicals, equipment. Subject index.

Note: A systematic combination of qualitative and quantitative analysis into a unified system of analysis. Many methods are original and were developed for this system, and the material was tested at California Institute of Technology before publication. Detailed explanation is given of procedures used. The book is intended as a college text, to give theory and practice of quantitative and qualitative analysis, with thorough training in inorganic chemistry.

TREADWELL, FREDERICK PEARSON

Analytical chemistry; based on the German text of F. P. Treadwell. Translated and revised by William T. Hall. Ninth English edition. New York: John Wiley & Sons, Inc., 1937-42. 2 v. illus. 23 cm. Vol. I, \$4.50; Vol. II, \$6.00. 924

Contents (abridged): Volume I, Qualitative analysis: General principles. Reactions of the metals (cations). Reactions of the acid constituents (anions). Systematic analysis. Reactions of some of the rarer metals. Index. Volume II, Quantitative analysis: Introduction. Gravimetric analysis. Volumetric analysis. Gas analysis. Tables. Author index. Subject index.

Note: This two-volume work was based originally on a translation of the author's *Kurzes Lehrbuch der analytischen Chemie*, Leipzig, 1902. However, since the first English edition the revisions have been made without paying attention to the new editions of the German text. It is intended as a textbook for chemistry students and the arrangement and inclusion of the subject matter has been influenced by the needs of students at the Massachusetts Institute of Technology. Methods of procedure requiring special instruments or technique are not treated in any great detail. This edition has been thoroughly revised and, in order to retain its original size, old material has been dropped as new has been added.

VOSBURGH, WARREN CHASE

An introduction to quantitative chemical analysis. New York: Henry Holt and Company, 1941. 356 p. illus. 22 cm. \$2.75. 925

Contents: International atomic weights (inside front cover). Introduction. Weighing. Chemical calculations. Gravimetric analysis. Gravimetric determination of chloride ion. The gravimetric determination of iron by precipitation as ferric hydroxide. The gravimetric determination of nickel. The gravimetric determination of sulfate ion. The gravimetric determination of phosphate ion. Solutions. Theory of precipitation. Errors in quantitative analysis. Volumetric analysis. Volumetric apparatus. Acidimetry and alkalimetry. Hydrogen in concentration. Theory of titration. Titrations involving precipitation. Oxidation and reduction. Oxidation-reduction titrations. Voltaic cells and oxidation potentials. The literature of analytical chemistry. 27 laboratory exercises. Tables. Index.

Note: A brief textbook for the introductory courses in quantitative analysis. Designed for use with "non-professional" students, as well as with those who intend to specialize in the field, it lays unusual emphasis upon theory and an understanding of the principles of quantitative experimentation.

VOSBURGH, WARREN CHASE

Introductory qualitative analysis. Revised edition. New York: The Macmillan Company, 1938. 222 p. illus. 22 cm. \$2.25. 925a

Contents: Part I, Laboratory work: General information. Laboratory exercises. Systematic analysis for the cations. The detection of the anions. The analysis of solid materials. Part II, Theory: Solutions. Electrolytic dissociation. A discussion of some of the reactions of qualitative analysis. Chemical equilibrium. Theory of precipitation. Oxidation and reduction. Appendix. Index.

Note: A revision and enlargement of Cornog and Vosburgh's *Introductory qualitative analysis*, New York: The Macmillan Company, 1936, which is now out of print. The present work is adapted to a one-semester course in qualitative analysis with the chief emphasis upon instruction in chemical principles and the scientific method rather than on the teaching of an immediately practical art. Provision is made for the analysis of known mixtures before unknown materials are analyzed. Inorganic reagents are used for the most part in the final tests, for the benefit of the student who has no knowledge of organic chemistry. The newer conception of the ionization of acids and bases has been used in the revised edition, which also includes revised procedures for the ammonium sulfide and ammonium carbonate groups.

WALDBAUER, LOUIS

Theoretical quantitative analysis. Philadelphia: The Blakiston Company, 1940. 248 p. illus. 22 cm. \$2.75. 926

Contents: Atomic and molecular structure. Errors, significant figures and computations. Analytical calculations. Activity. Precipitation. Oxidation and reduction reactions. Volumetric standards. Voltaic cells and electrode processes. Origin of the electromotive force. Standard electrodes. Oxidizing potentials. Electroanalysis. Indicators. Buffer solutions. Recent advances. Applications of the theories in practice. Logarithms. Table of activity product constants. Table of activity coefficients. Atomic weight table. Index.

Note: This book presents material for a two-semester course in theoretical quantitative analysis for sophomores. The modern viewpoint of the structure of matter is emphasized, and the modern theory of acids and bases is used. Numerous problems are given, and frequent reference to laboratory procedure is made.

WELCHER, FRANK JOHNSON

Chemical solutions, reagents useful to the chemist, biologist, and bacteriologist. New York: D. Van Nostrand Company, Inc., 1942. 404 p. 23 cm. \$4.75. 927

Note: A reference manual on the many solutions used by the chemist, biologist, and bacteriologist. They include indicators, standard acids and bases, solutions of salts, special test reagents, stains, fixatives, culture media, and many others. For each of these solutions, this book gives detailed directions for its preparation and use, with additional information about its keeping qualities, methods of storage, sensitivity, and other pertinent facts. To facilitate the use of this book, the solutions are arranged in alphabetical order, with their other commonly-used names fully indexed. Large numbers of references to the periodical literature are included.

WILKINSON, JOHN ANDERSON

Calculations in quantitative chemical analysis. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 154 p. 21 cm. (International chemical series) \$1.75. 928

Contents: Calculations from equations. Chemical factors. Calculation of the formula of a compound from its analysis. Calculation of per cent from a gravimetric analysis. Amount of reagent required to bring about a certain reaction. Calculation to a dry base. Calculation of the per cent composition of mixtures of solids. Mixtures of liquids. Indirect analysis. Cost of reagents. Calculation in errors in gravimetric analysis. Standard solutions. Agreement of results in standardization. Calculation of per cent from volumetric analysis. Normal solutions: Acids and bases calculation of the per cent using normal solutions. Factor weights in volumetric analysis. Differential titration of alkalies. Normal solutions. Precipitation reactions. Balancing equations normal solutions. Oxidation-reducing reactions. Standardization of oxidation-reduction solutions. Calculation of per cent from oxidation-reduction titrations.

Note: This book shows that quantitative calculations are essentially of but few types, easy of solution when recognized and classified by the student. Each chapter takes up a given type of problem and shows the different ways in which this presents itself and how these problems may be reworded to bring out the type.

WILLARD, HOBART HURD, AND HARVEY DIEHL

Advanced quantitative analysis, a companion volume to Elementary quantitative analysis, by Hobart H. Willard and N. Howell Furman. New York: D. Van Nostrand Company, Inc., 1943. 457 p. illus. 22 cm. \$4.75. 929

Contents: Notes to students. The general operations of quantitative analysis. The analysis of iron ore, iron, and steel. The analysis of alloy steels. The determination of alkali metals. The determination of the elements. The determination of atomic weights. Author index. Subject index.

Note: This college textbook begins with a concise review of the general methods and techniques of quantitative analysis. Then it presents the analytical chemistry of several representative and important materials, with detailed laboratory directions for every operation and procedure in each determination. Finally, there is an individual discussion of the analytical chemistry of all of the common elements and most of the rarer elements. These discussions give the principal methods used for separating the particular element from common interfering substances, and the methods for its determination by gravimetric, volumetric, or colorimetric means.

WILLARD, HOBART HURD, AND N. HOWELL FURMAN

Elementary quantitative analysis; theory and practice. Third edition. New York: D. Van Nostrand Company, Inc., 1940. 531 p. illus. 22 cm. \$3.25. 930

Contents: Introduction. Introduction to laboratory work. The general operations of quantitative analysis. The balance—weighing—calibration of weights. A simple quantitative experiment. Scientific measurements. Fundamental laws and theories. The general principles of volumetric analysis—calibration of apparatus. Acidimetry and alkalimetry, or neutralizations—theoretical considerations. Acidimetry and alkalimetry—procedures. Volumetric precipitations—complex formation—theory and procedures. Oxidation-reduction reactions—introduction and theoretical considerations. Oxidations with potassium permanganate. Oxidations with potassium bichromate. Oxidations with ceric sulfate. Oxidation and reduction processes involving iodine. Gravimetric analysis—precipitation—washing—ignition—calculations. Simple gravimetric determinations. Quantitative separations. Gravimetric separations. Theory of electrolytic precipitations and separations. Analysis of alloys. Electrolytic determinations and separations. Colorimetric analysis. Appendix. Author index. Subject index. Table of atomic weights.

Note: This college textbook explains in detail the principles and apparatus used in quantitative analysis. Then it takes up, one by one, the specific methods of analysis. For each method it gives a concise general outline; a discussion of the sources of error, covering the points of procedure with which the student is most likely to have trouble; an account of the other important applications of the particular method in analytical work; a step-by-step statement of the details of procedure; the calculations, with worked-out examples; and review questions and problems. An abbreviated version designed for shorter courses is Hobart H. Willard and others, *A short course in quantitative analysis*, New York: D. Van Nostrand Company, Inc., 1943, 253 p., \$2.50. *Advanced quantitative analysis*, by Hobart H. Willard and Harvey Diehl, described above, is a companion book designed for second courses in the subject.

YOE, JOHN HOWE

Chemical principles, with particular application to qualitative analysis. New York: John Wiley and Sons, Inc., 1937. 311 p. illus. (part col.) 23 cm. \$2.75. 931

Contents: Introduction. Fundamental laws. Atoms and molecules. Atomic and molecular weights. Electrons, protons and quanta. Elements, compounds and mixtures. The changes of matter. Mass, weight, and density. Oxidation-reduction reactions. Gases. Liquids. Solids. Solutions. Solutions of electrolytes. Homogeneous equilibrium. Heterogeneous equilibrium. Units of weight, volume, and concentration used in equilibria calculations. Equilibria calculations. Solubility-product calculations. Dissolving of precipitates. The coordination theory. Complex ions. The pH scale. Neutralization and hydrolysis. Oxidation-reduction equilibria. Chemical kinetics. Thermochemistry, electrochemistry, and photochemistry. Electrical theory of matter, radioactivity, and atomic structure. Colloids. Appendix. Index.

Note: This book deals particularly with the application of physico-chemical principles to qualitative analysis, and in consequence, the physical chemistry of precipitation, the dissolution of precipitates, and ionic equilibria in general are considered in some detail. Topics such as radioactivity and the structure of the atom, which have no direct bearing on qualitative analysis, are, however, included at somewhat shorter length. A very useful feature of the book is the large number of numerical examples. Answers are given in almost every case.

YOE, JOHN HOWE, AND LANDON A. SARVER

Organic analytical reagents. New York: John Wiley and Sons, Inc., 1941. 339 p. illus. 23 cm. \$4.00. 932

Contents: Part I, Descriptive and theoretical: Introduction. Classification of organic analytical reagents. Organic solvents and wash liquids. Organic acids and bases. Oxidizing and reducing agents. Indicators. Primary standards in volumetric analysis. Valence and complex compounds. The salinogenic reagents. Photometric aids. Miscellaneous organic reagents. Part II, Glossary and bibliography: Introduction. Organic reagents employed

for the detection or determination of various elements. Glossary of reagents. Bibliography. Index.

Note: This comprehensive treatise on organic compounds is of interest to all chemists engaged in making chemical analyses or in directing such work. Of especial importance are the theoretical sections: Chapter II on the classification of organic analytical reagents, Chapter XIII on organic reagents employed for the detection or determination of various elements, Chapter XIII giving a glossary of reagents, and the extensive bibliography containing more than 2400 references.

Analytical Chemistry, Chromatographic

STRAIN, HAROLD HENRY

Chromatographic adsorption analysis. With 37 illustrations. New York: Interscience Publishers, Inc., 1942. 222 p. illus. (part col.) 23 cm. (Chemical analysis, a series of monographs on analytic chemistry and its applications. Vol. II) \$3.75. 934

Contents: Historical introduction. Applications of chromatographic adsorption methods. Apparatus and procedure. Adsorbents. Solvents and eluants. Location of colorless adsorbed substances. Chromatography of inorganic compounds. Chromatography of organic compounds. Industrial uses. Bibliography. Author index. Subject index.

Note: A summary of the knowledge extant in 1941 of the chromatographic adsorption method for the detection, isolation, and purification of numerous compounds not preparable by other methods. Emphasis is placed upon experimental procedure and upon the application of the method to new problems and to the detection and preparation of new compounds. Reference is made throughout the book to most of the published investigations in the field, and the extensive bibliography contains approximately 800 titles of American and foreign publications which appeared largely between 1931 and 1941. Apparatus used by various investigators has been redrawn in simplified form to emphasize the novel feature introduced by the original author.

Analytical Chemistry, Colorimetric

SANDELL, ERNEST BIRGER

Colorimetric determination of traces of metals. New York: Interscience Publishers, Inc., 1944. 487 p. illus. 23 cm. (Chemical analysis, a series of monographs on analytical chemistry and its applications. Vol. III) \$7.00. 935

Contents: General part, Colorimetric trace analysis: Trace analysis. Methods for the separation and isolation of traces of substances. Colorimetry and spectrophotometry in trace analysis. General colorimetric reagents. Special part, Procedures for the determination of traces of metals: Explanatory notes. Aluminum. Antimony. Arsenic. Barium. Beryllium. Bismuth. Cadmium. Calcium. Cerium. Chromium. Cobalt. Columbium and tantalum. Copper. Gallium. Germanium. Gold. Indium. Iridium. Iron. Lead. Lithium. Magnesium. Manganese. Mercury. Molybdenum. Nickel. Osmium. Palladium. Platinum. Potassium. The rare earth elements. Rhenium. Rhodium. Ruthenium. Scandium. Silver. Sodium. Thallium. Tin. Titanium. Tungsten. Uranium. Vanadium. Zinc. Zirconium. Appendix. Author index. Subject index.

Note: A collection of modern methods in the field of colorimetric determination of traces of elements, especially of metals, covering the advances of recent years. The work is not intended as an encyclopedia of methods but rather as a description of a limited number of methods which at the present time (1944) appear to be best suited for dealing with traces of metals. Since no one reagent is necessarily the best for the determination of an element in all kinds of samples or under all conditions, two or three methods are sometimes described in greater or less detail for a number of the metals. A few fluorimetric methods are included. The treatment is based largely on the author's own experience. References are given in footnotes.

SNELL, FOSTER DEE, AND CORNELIA T. SNELL

Colorimetric methods of analysis; including some turbidimetric and nephelometric methods. New York: D. Van Nostrand Company, Inc., 1937. 2 v. illus. 23 cm. Vol. I, \$9.50; Vol. II, \$9.50. 935a

Contents (abridged): Volume I, Inorganic: Colorimetric methods. Apparatus. Artificial liquid standards. Accuracy. Nephelometry, photometry, and turbidimetry. Calculations. Carbon. Carbon monoxide. Carbon dioxide. Cyanides. Oxygen. Hydrogen peroxide and ozone. Copper and cadmium. Mercury. Lead. Thallium. Bismuth. Arsenic. Antimony. Tin. Aluminum. Chromium. Iron. Nickel. Cobalt. Manganese. Zinc. Titanium. Vanadium. Tungsten. Molybdenum and rhenium. Uranium. Beryllium. Columbium. Gold. Silver. Platinum. Rhodium. Iridium. Palladium. Potassium. Sodium. Lithium. Calcium and barium. Magnesium. Phosphorus. Silica. Boron. Chlorides. Chlorine. Bromides. Iodine. Fluorides. Chlorates and perchlorates. Sulphides. Selenium, tellurium and thiocyanates. Sulphites and sulphates. Nitrates. Nitrites. Ammonia. Hydrogen ion. Volume II, Organic: Hydrocarbons. Alcohols. Sterols. Aliphatic aldehydes. Cyclic aldehydes. Ketones. Unsubstituted monobasic aliphatic acids and their esters. Substituted monobasic aliphatic acids. Polybasic aliphatic acids. Bilirubin. Bile acids. Carbocyclic acids. Uric acid and purines. Tyrosine and tyramine. Tryptophane. Histamine, histidine and derivatives. Cystine, cysteine, glutathione, sulphhydryls and disulphides. Miscellaneous amino and imino acids. Hemoglobin and related compounds. Phenols and cresols. Urea, guanidine and guanine. Nitrogen. Creatine and creatinine. Glucose. Miscellaneous pentoses and hexoses. Polysaccharides. Complex carbohydrates. Opium and nux vomica alkaloids. Cinchona and ergot alkaloids. Synthetic alkaloids and glucosides. Halogen derivatives. Compounds with inorganic radicals. Pepsin and trypsin. Miscellaneous enzymes. Hormones. Vitamins. Measurement of bleaching and decolorizing power. Color of petroleum oils. Estimations on non-petroleum oils. Color of extracts, solutions, sugars and sugar solutions, and solids.

Note: These books were compiled by a systematic search of the entire chemical literature. For each method all available particulars are furnished regarding the equipment used, the operations in preparing the solution for analysis, the color standards needed, the procedure, calculations, and interpretation of results. The methods cover the entire range of inorganic and organic chemistry, with particular attention to those applied in metallurgy, medicine, biology, and other specific fields. Of particular value are the full details of the many variations of each method that have been reported for particular kinds of samples, and the discussion of the other general methods of analysis allied to colorimetry, such as nephelometry, photometry, and turbidimetry. The previous edition of this work was published in one volume, and did not include organic and biological applications.

Analytical Chemistry, Polarographic

KOLTHOFF, IZAAK MAURITS, AND J. J. LINGANE

Polarography: polarographic analysis and voltammetry, amperometric titrations; with 141 illustrations. New York: Interscience Publishers, Inc., 1941. 510 p. illus. 23 cm. \$6.00. 936

Contents (abridged): Part I, Introduction: General principles of polarographic (voltammetric) analysis. Part II, Theoretical principles: Theory of diffusion currents and the Ilkovic equation for the diffusion current with the dropping mercury electrode. Evaluation of diffusion coefficients. The migration current. The electrocapillary curve of mercury. Maxima in polarographic current-voltage curves. Interpretation of the polarographic waves of organic substances. Part III, Apparatus and general technique: Electrical equipment. Fabrication of the dropping electrode. Polarographic cells and general technique. Calibration of the dropping electrode. Part IV, Inorganic polarographic analysis: Metals. Oxygen, hydrogen peroxide, and sulfurous acid. Nitrate, nitrite, nitric oxide, cyanogen, bromate, and iodate. Halides and other ions which depolarize the dropping mercury anode. Part V, Organic polarographic analysis: Reduction of organic compounds. Carbonyl compounds. Unsaturated acids. Nitrogen compounds. The cysteine-cysteine system. Part VI, Biological applications of polarography: Catalytic waves of cysteine and other sulphydryl containing compounds and proteins. Applications to the serologi-

cal detection of cancer. Part VII, Voltammetry with platinum microelectrodes. Part VIII, Amperometric titrations. Appendix: Potentials of common reference electrodes. Half-wave potentials of inorganic substances. Author index. Subject index.

Note: A monograph on the theory and technique of polarographic analysis, with an account of its practical applications correlated and systematized from the pertinent literature in United States and foreign journals. Nearly half of the book deals with the theory of the polarographic method, the remainder being divided into a detailed account of how the method is applied to specific analysis in organic and inorganic chemistry, and the applications in the analysis of biological materials. The characteristics of polarographic current-voltage curves are treated extensively, not being limited to the immediate needs of the practical analytical chemist but also suggesting applications to the study of electrode reactions, overvoltage, electrokinetics, and electrochemistry.

Analytical Chemistry, Spectroscopic

AMERICAN SOCIETY FOR TESTING MATERIALS

Index to the literature on spectrochemical analysis, 1920-1939. By William F. Meggers and Bourdon F. Scribner. Second edition. Philadelphia: The American Society for Testing Materials, 1941. 94 p. 22 cm. Paper, \$1.00. 937

Note: This bibliography, based on a part of the card catalogue maintained by the United States Bureau of Standards, is arranged in chronological order from 1920 to 1939 inclusive, and in alphabetical order of author within each calendar year. No abstracts are given but each entry is followed by references to abstracts already published. There is also a detailed cross-index by subject which indicates all the literature pertaining to any particular application or instrument. The second edition increases the number of entries from 956 to 1467 by including material published between 1937-39.

BRODE, WALLACE REED

Chemical spectroscopy. Second edition. New York: John Wiley & Sons, Inc., 1943. 677 p. illus. (part col.) 22 cm. \$7.50. 938

Contents: Introduction. Atomic and molecular spectra. Emission spectra (apparatus). Qualitative analysis, spectrum tables, and standard samples. Quantitative analysis. Resonance and chemical structure. Absorption spectra (apparatus and methods). Relation between molecular structure and absorption spectra. Application of absorption spectra data. Infrared and raman spectra. Colorimetry and fluorimetry. Laboratory experiments. Theory and practice of photography. Equipment and arrangement of a spectrographic laboratory. Bibliography and references. Tables. Charts. Index.

Note: For those dealing with spectrographic analysis of materials and other applications of emission and absorption spectroscopy. While written primarily from the chemical standpoint, it will be found useful also by workers in physics, the biological sciences, metallurgy, and engineering. The book constitutes a practical working guide for the laboratory analyst. In the second edition, the lists of spectrum tables and data for both emission and absorption spectra have been expanded. There has been a complete revision of all numerical (spectrum data) tables, with wavelength values based on the Harrison M. I. T. *Wavelength tables* (New York: Wiley, 1939). This book includes the first published spectrum lines by elements based on these tables. The section on theoretical spectra has been carefully revised to conform with accepted modern notation. The section on quantitative emission spectra has been revised and expanded. Some new tables have been added, including persistent lines, lines for analysis, and conversion tables for transmission/extinction and wavelength/frequency. The bibliography has been expanded to include more recent references.

Organic Chemistry

ADAMS, ROGER, AND JOHN R. JOHNSON

Elementary laboratory experiments in organic chemistry. Third edition. New York: The Mac-

millan Company, 1940. 420 p. illus. 22 cm. \$2.00. 939

Note: A laboratory manual designed for the use of beginning students in organic chemistry and prepared by professors of organic chemistry at the University of Illinois and Cornell University. Review questions are given at the end of each experiment and an appendix lists the materials and time needed for the experiments.

ARNOW, LESLIE EARLE, AND HENRY C. REITZ

Introduction to organic and biological chemistry. St. Louis: The C. V. Mosby Company, 1943. 736 p. illus. 22 cm. \$4.25. 940

Contents: Part I, Chemical fundamentals in review: Chemical facts and theories. Particles in solution. Part II, Organic chemistry: Saturated aliphatic hydrocarbons. Halogen derivatives of saturated aliphatic hydrocarbons. Unsaturated aliphatic hydrocarbons. Alcohols. Ethers. Aldehydes and ketones. Saturated monobasic acids and their derivatives. Dibasic acids. Substituted organic acids. Lipids. Amines and miscellaneous nitrogen compounds. Sugars. Polysaccharides and related compounds. Aromatic hydrocarbons. Oxygen derivatives of the aromatic hydrocarbons. Aromatic amines and dyes. Heterocyclic compounds. Alkaloids. Proteins and amino acids. Part III, Biological chemistry: Enzymes. The chemistry of respiration. Carbohydrate metabolism. Lipid metabolism. Protein metabolism. Inorganic metabolism. Hormones. Vitamins. Summary of nutritional requirements. Appendix. Author index. Subject index.

Note: An elementary college textbook designed for students in premedical, pre dental, home economics, agriculture, dietetics, and physical education courses, combining a survey of organic chemistry and biochemistry in one volume. A brief review of chemical fundamentals for home study is given in Part I, but the bulk of the work is an elementary treatment of general organic chemistry, with references to its applications in manufactured products. A brief summary of the nine important phases of metabolism and nutrition is given in the final section. Study questions and bibliographies follow each chapter.

BRANCH, GERALD EYRE KIRKWOOD, AND MELVIN CALVIN

The theory of organic chemistry, an advanced course. New York: Prentice-Hall, Inc., 1941. 523 p. illus. 23 cm. (Prentice-Hall chemistry series; W. M. Latimer, editor) \$5.35. 941

Contents (abridged): The development of structural chemistry: Valence. Structural isomerism. Structural iteration. Stereoisomerism. Atomic structure: Nuclear atom. Lewis atom. Quantum theory of the atom. The Bohr atom. The wave mechanical atom. Molecular structure: Electronic structural formulas. Co-ordination number. Bond dipole. Group interaction. Steric hindrance. Polarity and induction. Physical properties. Bond distances. Bond moments. Dipole moment and resonance. Raman spectra and force constants. Acid-base indicators. Equilibrium—acid strength. Acids without resonance. Fatty acids. Aromatic acids. Miscellaneous acids. Energy relationships in some other reactions. Valence bond resonance and heat of formation. Tautomerism. Oxidation reduction potentials. Free radicals. The rate factor in chemical behavior. Temperature coefficient of reaction rate. Eyring-Polanyi method. Reactions of acids and bases with neutral substances—three center reactions. Mechanisms of the reactions. Strength of the reacting acid or base. Reactions of the double bond. Ethylenic double bond. Carbonyl double bond. Fourcenter reactions. Author index. Subject index.

Note: A textbook for use in advanced college courses. It is especially concerned with applications of electrostatic induction and resonance to organic reactions. Chemical properties are treated in terms of equilibria and the rate of approach to equilibrium.

BURRELL, ROBIN CHARLES

Organic chemistry. New York: McGraw-Hill Book Company, Inc., 1936. 331 p. illus. 21 cm. (McGraw-Hill eutheics series, Annie L. Macleod, consulting editor) \$2.75. 942

Contents: Definition and scope of organic chemistry. Methods of organic chemistry. Structural formulas. The classification of organic compounds. Organic nomenclature. Hydrocarbons. Oxygen derivatives of acyclic hydrocarbons. Structural anhydrides of

acids and alcohols. Fats and related compounds. (Lipides.) Derivatives of acyclic hydrocarbons which contain more than one characteristic atom or radical. Carbohydrates. Nitrogen containing derivatives of acyclic hydrocarbons. The proteins. Derivatives of cyclic hydrocarbons. Heterocyclic compounds. Natural products of complex or imperfectly known molecular configuration.

Note: Although primarily designed as a textbook of organic chemistry for students of home economics, this text also includes the fundamental concepts of organic chemistry which form the necessary prerequisite for a further study of physiological chemistry and of various applied courses in agriculture and biological sciences.

CALDWELL, WILLIAM THOMAS

Organic chemistry. Boston, New York: Houghton Mifflin Company, 1943. 763 p. illus. 24 cm. \$4.25. 943

Contents: Introduction. Saturated hydrocarbons. Unsaturated hydrocarbons; olefins, acetylenes. Alcohols. Ethers. Aldehydes and ketones. Monocarboxylic acids, acyl halides, and amides. Esters. Polyhydric alcohols, fats, and soaps. Amines. Electronic formulas and some physical characteristics. Acetoacetic ester and malonic ester. Organometallic compounds. Halogenated acids, hydroxy acids and olefinic acids; geometrical isomerism; ketenes. Unsaturated alcohols, aldehydes and ketones; conjugated double bonds. Polycarboxylic acids. Stereochemistry. The carbohydrates. Urea and the ureides. Compounds containing sulfur. The amino acids, polypeptides and proteins. Aromatic series; benzene and its homologues. Aromatic halogen derivatives, sulfonic acids and nitro compounds. Reduction products of nitro compounds. Diazo compounds and azo dyes. Phenols, amino phenols, quinones and aromatic alcohols; free radicals. Aromatic aldehydes and ketones. Aromatic acids. Polynuclear aromatic hydrocarbons. Alicyclic compounds. Isoprene, terpenes, and camphors. Polyterpenes, natural polycene pigments, sterols and related vitamins and hormones. Heterocyclic compounds with five-membered rings. Compounds with six-membered heterocyclic rings. Condensed heterocyclic rings; indole, quinoline and isequinoline. The alkaloids. Synthetic dyes. Literature of organic chemistry.

Note: This text presents the fundamental principles of organic chemistry for college students. The body of the text is introduced by a chapter which reviews briefly the general principles of chemistry and concludes with a chapter which instructs the students concerning the nature of advanced work. Attention is paid to the most recent accomplishments of the organic chemist in various fields—industrial, biochemical, theoretical.

CHERONIS, NICHOLAS DIMITRIUS

Organic chemistry; an introduction to the carbon compounds. New York: Thomas Y. Crowell Company, 1941. 728 p. illus. 23 cm. \$4.00. 944

Contents: Introduction. Purification and analysis of organic compounds. Structure of atoms and molecules. Structure and classification of carbon compounds. The hydrocarbons. Saturated hydrocarbons. Properties of saturated hydrocarbons. Unsaturated hydrocarbons. Cyclic unsaturated hydrocarbons. Monohalogen compounds. Monohydroxy compounds. Cyclic monohydroxy compounds, phenols, and ethers. The amines. Theories of organic chemistry. Nitro compounds. The polyhalides. Aldehydes and ketones. Important aldehydes and ketones. The cyanides or nitriles. Carboxylic acids. Important carboxylic acids. Derivatives of acids. Dicarboxylic acids. Halogen and hydroxy acids. Polyhydroxy compounds: fats and oils. The carbohydrates. Polyfunctional carbonyl compounds. Carbonic acid derivatives: urea and ureides. Amino acids. Proteins. Diazonium compounds. Compounds containing sulfur, arsenic, and metals. Polyfunctional aromatic compounds. Polynuclear aromatic compounds. Alicyclic compounds and terpenes. Heterocyclic compounds. Physiologically active compounds. Dyes. Synthetic polymers. Index.

Note: An introductory text in which the author has aimed at an approach clearer and more logical than the traditional method. The first four chapters provide a brief orientation and overview of the field. In the following chapters the hydrocarbons and the simpler groups of organic compounds are studied as a whole without the usual separation into aliphatic and aromatic. The study of benzene is introduced early in connection with the study of the cyclic unsaturated hydrocarbons.

CONANT, JAMES BRYANT

The chemistry of organic compounds; a year's course in organic chemistry. Revised with the

assistance of Max Tishler. New York: The Macmillan Company, 1939. 658 p. illus. 22 cm. \$4.00. 945

Contents: The alcohols. Alkyl halides, esters, ethers. Saturated hydrocarbons, petroleum. Unsaturated hydrocarbons. Organic acids. Aldehydes and ketones. Polyhalogen compounds—determination of structure and synthesis of simple compounds. Derivatives of ammonia—amides, nitriles, amines. Polyhydric alcohols, fats and oils. Dibasic acids. Hydroxy acids. Optical isomerism. Acetoacetic ester and malonic ester. Derivatives of carbonic acid. Compounds containing sulfur. Unsaturated alcohols, acids and carbonyl compounds. Carbohydrates. The hydrocarbons from coal tar. Aryl halides, sulfonic acids and phenols. Aromatic nitro compounds, amines and diazonium salts. Polyhydroxy compounds and aminophenols. Aromatic aldehydes and ketones. Aromatic acids. Aromatic carbinols and aryl derivatives of aliphatic hydrocarbons. Naphthalene, anthracene and phenanthrene. Alicyclic compounds. Natural products containing alicyclic rings—terpenes, sterols, sex hormones. Heterocyclic compounds. Natural and synthetic drugs. Synthetic dyes from coal tar. The amino acids and proteins. Plant and animal pigments. Advanced topics in stereochemistry. Index.

Note: A textbook for the year's course in organic chemistry. The new edition includes discussions of the new developments in theoretical chemistry such as resonance, new material on sterols and other compounds related to phenanthrene, and revised material on vitamins, hormones, and protein chemistry to bring these topics up to date. There is also a new presentation of the essential facts in regard to heterocyclic compounds and the relation of these facts to compounds of biological significance, and a complete revision of all the material on carbohydrates to cover recent work in this field. Full attention is given to the latest developments in organic chemistry, and some emphasis has been put on biochemistry to give the pre-medical student a good foundation in this subject. With each topic discussed exercise material is provided. A pamphlet of supplementary questions and problems is provided free with each copy of this text. A shorter book organized on the same plan is the author's *Organic chemistry, a brief introductory course*, second edition, New York: The Macmillan Company, 1936, 293 p., \$3.25.

DEGERING, EDWARD FRANKLIN, AND OTHERS

The quadri-service manual of organic chemistry, including: 1. semi-micro laboratory experiments, 2. theoretical introductions to the experiments, 3. objective tests for review and self-measurement, 4. duplicate notebook-report sheets; by Edward F. Degering and associate editors, under the general editorship of Herman T. Briscoe. Boston: Houghton Mifflin Company, 1942. 221 p. illus. 28 cm. Paper, \$2.50. 945a

Contents: General introduction. Physical constants. The hydrocarbons. Halogen compounds. Alcohols and ethers. Aldehydes and ketones. The acids. Substituted acids. Acid derivatives. Review exercises. Carbohydrates. Sulfur compounds. Organic nitrogen compounds. Halogenation. Condensation. Nitration. Oxidation. Reduction. Hydrogenation. Sulfonation. Diazotization. Emulsification, soaps, lotions. Qualitative organic analysis. Behavior of organic compounds toward certain typical reagents.

Note: This laboratory manual differs from the usual type of guide in that it offers the student the combination of features indicated in the subtitle. By including a duplicate notebook system it has been possible to reduce both the number and total cost of the books that the student must buy to meet the usual requirements in his course in organic chemistry. The student turns in the original copy of the duplicate pages and retains the carbon in the manual for future reference. The 1942 printing contains some new procedures, new questions, and additional references to the current literature.

DESHA, LUCIUS JUNIUS

Organic chemistry; the chemistry of the compounds of carbon. New York: McGraw-Hill Book Company, Inc., 1936. 750 p. illus. 21 cm. (International chemical series, J. F. Norris, consulting editor) \$3.75. 946

Note: This textbook is designed for use in one-year college courses offered to students who do not plan to take further work in the subject. The author has attempted to emphasize the fundamental principles and to arrange the material in such a way as to maintain the student's interest. The accompanying laboratory manual is the author's *Experiments in organic chemistry*, New York: McGraw-Hill Book Company, Inc., 1938, 233 p., \$1.75.

EGLOFF, GUSTAV

Physical constants of hydrocarbons. Vol. I-II. New York: Reinhold Publishing Corporation, 1939-40. 2 v. 23 cm. (American Chemical Society monograph series. No. 78) Vol. I, \$9.00; Vol. II, \$12.00. 947

Contents (abridged): Volume I. Description of the tables. Geometrical isomerism. Critical evaluation of the data and calculation of the most probable values. Alkanes or paraffins. Alkenes or olefins. Alkenes or monoolefins. Alkadienes or diolefins. Alkatrienes or triolefins. Alkatetraenes or tetraolefins. Alkape-
taenes or pentaolefins. Alkahexaenes or hexaolefins. Alkynes or acetylenes. Alkadiynes or diacetylenes. Mixed alkene-alkynes of the aliphatic series. Volume II. Structure of alicyclic hydrocarbons. Critical evaluation of the data and calculation of the most probable values. Description of the tables. Cyclanes and cycloparaffins. Dicyclanes or dicycloparaffins. Tri, tetra, and penta cyclanes. Bicyclanes or bicycloparaffins. Tricyclanes—endocyclic. Polycyclanes or polycycloparaffins (fused rings). Cyclenes or cycloolefins. Cyclodienes or cyclodiolefin. Cyclotrienes or cyclotriolefins (exclusive of aromatics). Dicyclenes or dicycloolefins. Bicyclenes or bicycloolefins. Bicyclodienes or bicyclodiolefins. Dibicyclenes or dibicycloolefins. Polycyclenes. Cyclenes. Spiranes. Alicyclic hydrocarbons of known but unclassified structures. Alicyclic hydrocarbons of undetermined structure (thought to belong to the naphthene or cyclic series).

Note: Following a brief introduction, each volume in this reference work is devoted to tables giving the melting point, boiling point, specific gravity, and refractive index of pure hydrocarbons. The tables are accompanied by extensive footnotes. It is written for the workers in hydrocarbon chemistry, which covers petroleum, natural and manufactured gas, chemical, rubber, plastics, and pharmaceutical industries. Three volumes of the series are still in preparation.

EGLOFF, GUSTAV

The reactions of pure hydrocarbons. New York: Reinhold Publishing Corporation, 1937. 897 p. illus. 23 cm. (American Chemical Society monograph series. No. 73) \$16.75. 948

Contents: Introduction. Reactions of paraffin hydrocarbons. Reactions of olefin hydrocarbons. Reactions of acetylene hydrocarbons. Reactions of aromatic hydrocarbons. Reactions of cycloparaffins and cycloolefins. Reactions of terpene hydrocarbons. Bibliography. Indexes.

Note: A reference book for the research chemist summarizing and describing the research work being carried out in many parts of the world on the reactions of pure hydrocarbons. Quantitative and qualitative analyses of the various products of reaction are tabulated in the text; their properties and commercial significance are also discussed. Extensive bibliographies are appended to each chapter.

FIESER, LOUIS FREDERICK

The chemistry of natural products related to phenanthrene. Second edition, with an appendix. New York: Reinhold Publishing Corporation, 1937. 456 p. 23 cm. (American Chemical Society monograph series. No. 70) \$7.00. 949

Contents (abridged): The chemistry of phenanthrene and some instances of the occurrence of phenanthrene and hydrophenanthrene derivatives. Resin acids. Cancer-producing hydrocarbons. Sterols and bile acids. Sex hormones. Heart poisons. Saponins. Appendix. Indexes.

Note: Known advances in phenanthrene chemistry are consolidated in this work for the chemist and biochemist. Historical investigations of phenanthrene and its derivatives are discussed as well as recent experimentation. An appendix and additional bibliographical footnotes bring the material in this second edition up to January 1, 1937.

FIESER, LOUIS FREDERICK

Experiments in organic chemistry. Second edition. Boston: D. C. Heath and Company, 1941. 498 p. illus. \$2.80. Part I, 305 p. illus. \$2.00; Part II, 199 p. illus. \$1.50. 950

Contents (abridged): Introduction, in case of accidents. Part I, Experiments 1-52. Part II, Suggestions for advanced work. Apparatus and methods. Determination of melting points. Manipulation of small quantities of material. Chromatographic adsorption. Glass blowing, by E. B. Hershberg. Solvents, reagents, and gases—solvents, drying agents, alkylating agents, acylating agents, other reagents. Inorganic gases. Reactions—acylation, the Grignard reaction, the Friedel and Crafts reaction, reduction, oxidation, catalytic hydrogenation, dehydrogenation. The semimicrodetermination of carbon and hydrogen. Index.

Note: For a first college course, this text reflects the author's less orthodox view that some of the reactions of aliphatic chemistry can be illustrated perfectly well, and to considerable advantage, with the use of aromatic compounds. Attempting to answer rather than ask questions of the student, prefaces introducing and explaining the experimental procedure are included. One of the functions of the prefaces is to emphasize the value of test reactions in identification work and in the separation of mixtures. Special experiments and alternate preparations are included for specially interested and gifted students. In this edition the experiments designed for a first course in organic chemistry have been revised in certain details and extended by the inclusion of directions for the preparation of sulfanilamide, for the synthesis of vitamin K₁ and related compounds, and for the isolation of the principal acid constituent of rosin. The material of a more advanced character included in the second part of the book has been expanded considerably, and Parts I and II are now available in separate printings.

FIESER, LOUIS FREDERICK, AND MARY FIESER
Organic chemistry. Boston: D. C. Heath and Company, 1944. 1091 p. illus. 24 cm. \$8.00. 951

Contents: The nature of organic compounds. Saturated hydrocarbons (alkanes). Ethylenic hydrocarbons (alkenes). Acetylenic hydrocarbons (alkynes). Petroleum. Alcohols. Halogen compounds. Carboxylic acids. Aldehydes and ketones. Amines. Stereochemistry. Ring formation. Rubber. Carbohydrates. Fats and waxes. Proteins. Microbiological processes. Role of carbohydrates in biological processes. Metabolism of fats. Metabolism of proteins and amino acids. Structure of benzene. Aromatic hydrocarbons. Aromatic substitutions. Nitro compounds. Sulfonic acids. Aromatic amines. Phenols. Aromatic halogen compounds. Aromatic carboxylic acids. Aromatic aldehydes and ketones. Quinones. Naphthalene. Polynuclear hydrocarbons. Dyes. Synthetic fibers. Synthetic plastics and resins. Steroids. Isoprenoid compounds. Accessory dietary factors. Advances in chemotherapy. Index.

Note: A comprehensive text for first college courses in the subject. Special features include "essay" chapters dealing with the applications of organic chemistry to technology and to the biological and medical sciences. These chapters treat both the historical aspects and present-day concepts and applications. Reading references follow each chapter. An abridged edition, Boston: D. C. Heath and Company, 1944, 710 p., \$4.00, intended for shorter courses omits certain chapters on biological aspects and presents other of the "essay" chapters in condensed form.

FUSON, REYNOLD CLAYTON, AND H. R. SNYDER
Organic chemistry. New York: John Wiley & Sons, Inc., 1942. 506 p. 23 cm. \$3.50. 952

Contents: Part I, Introduction. The structure of molecules. Saturated hydrocarbons. Unsaturated hydrocarbons. Petroleum. Aromatic hydrocarbons. Alcohol. Aldehydes and ketones. Carboxylic acids. Amines. Polyfunctional acids. Phenols. Optical isomerism. Amino acids and proteins. Carbohydrates. Valence. Isomerism. Industrial alcohols. Part II, Organic halogen compounds. Organometallic compounds. The synthesis of carbonyl compounds. Reactions of the carbonyl group. Substitution and condensation reactions of carbonyl compounds. Unsaturated carbonyl compounds. Compounds which contain two or more carbonyl groups. Ring formation. Polymerization and polymers. Nitro compounds. The preparation and properties of amines. Organic sulfur compounds. Aromatic compounds. Polynuclear aromatic hydrocarbons. Aromatic heterocyclic compounds. Synthetic dyes from coal tar. Appendixes: Notes on nomenclature and pronunciation. Problems and questions for review. Index.

Note: Part I of this book gives the principal types of organic compounds, and Part II, the more advanced aspects of these

compounds, with particular emphasis on the use of organic reactions in synthesis. Modern industrial practice is stressed throughout, as in the treatment of synthetic rubbers, such as the Buna rubbers, Butyl rubber, Thiokol, Neoprene, and Koroseal; of explosives; of the sulfa drugs; of Plexiglas and Lucite, and safety glass; of new textiles, such as rayon, Nylon, and Vinyon; of detergents, such as Dreft and Vel; of paints and lacquers; and of the manufacture of alcohol, glycerol, and TNT from petroleum.

GILMAN, HENRY, EDITOR, AND OTHERS

Organic chemistry; an advanced treatise. Editorial board: Henry Gilman, editor-in-chief, Roger Adams, Homer Adkins [and others]. Second edition. New York: John Wiley & Sons, Inc., 1943. 2 v. illus. 23 cm. \$7.50 per volume. 953

Contents: Volume I: The reactions of aliphatic hydrocarbons, by Gustav Egloff. Alicyclic compounds and the theory of strain, by Reynold C. Fuson. Theory of the structure and reactions of aromatic compounds, by Louis F. Fieser. Stereoisomerism, by Ralph L. Shriner, Roger Adams, and C. S. Marvel. Organometallic compounds, by Henry Gilman. Free radicals, by Werner E. Bachmann. Unsaturation and conjugation, by C. F. H. Allen and A. H. Blatt. Synthetic polymers, by C. S. Marvel and E. C. Horning. Catalytic hydrogenation and hydrogenolysis, by Homer Adkins and Ralph L. Shriner. Organic sulfur compounds, by Ralph Connor. Aliphatic fluorides, by Albert L. Henne. Molecular rearrangements, by Everett S. Wallis. Comparison of chemical reactivity, by Homer Adkins. Index. Volume II: Natural amino acids, by H. T. Clarke. Alkaloids, by Lyndon Shull. The chemistry of the porphyrins, by Alphonse H. Corwin. Chlorophyll, by Catherine C. Steele. The anthocyanins and the flavones, by Karl Paul Link. The steroids, by William H. Strain. Carbohydrates I, by Melville L. Wolfrom. Carbohydrates II, by Albert L. Raymond. Carbohydrates III: Cellulose, by Emil Haeuser. Constitution and physical properties of organic compounds, by J. A. Leermakers and A. Weissberger. The redistribution reaction, by George Calingaert and Harold A. Beatty. Modern electronic concepts of valence, by John R. Johnson. The significance of resonance to the nature of the chemical bond and the structure of molecules, by Linus Pauling. Index.

Note: This revision was prepared to include subjects not covered in the first edition, and to bring the material already given into line with current developments. Of the 26 chapters now offered, eight are new: the reactions of aliphatic hydrocarbons; synthetic polymers; catalytic hydrogenation and hydrogenolysis; organic sulfur compounds; aliphatic fluorides; the chemistry of the porphyrins; chlorophyll; and the redistribution reaction. The remaining chapters were revised to include recent data. A duplicate index is given in each volume. Volume I deals with the more general and fundamental aspects of organic chemistry. The rapidly developing fields of natural products, relationship between physical properties and chemical constitution, valence, and resonance have been grouped in the second volume.

GROGGINS, PHILIP HERKIMER, EDITOR

Unit processes in organic synthesis. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 769 p. illus. 23 cm. (Chemical engineering series) \$6.00. 954

Contents: Nitration. Amination by reduction. Diazotization and coupling. Halogenation. Sulfonation. Amination by ammonolysis. Oxidation. Hydrogenation. Alkylation. Esterification. Hydrolysis. The Friedel and Crafts reaction. Polymerization.

Note: Intended for advanced students in industrial chemistry and chemical engineering, this book presents an outline of the industrial technique generally employed in attacking problems involving organic synthesis. Attention is directed not only to the chemistry and products of reaction but also to the contributing factors which lead to efficient operation. The term *unit processes* in the title is used to represent the embodiment of all factors in the technical application of an individual chemical reaction in organic synthesis. Design, construction, and operation of various plants are discussed, and bibliographic notes for further research are given in the text. The second edition has been enlarged to include the progress in the synthetic organic chemical industry in the United States from 1934 to 1938, and each chapter has been revised in keeping with new developments.

HILL, GEORGE ALBERT, AND LOUISE KELLEY

Organic chemistry. Philadelphia: The Blakiston Company, 1943. 919 p. illus. 23 cm. \$4.00. 955

Contents (abridged): Saturated hydrocarbons, alkanes. Unsaturated hydrocarbons, alkenes, alkadienes, alkynes. Petroleum. Monohydroxy, saturated polyhydroxy alcohols. Ethers. Halogen derivatives of hydrocarbons. Aldehydes and ketones. Saturated monocarboxylic acids, acid halides. Acid anhydrides. Esters. Amines. Amides. Nitrogen derivatives of carboxylic acid. Cyanogen. Sulfur compounds. Dicarboxylic, unsaturated, halogenated, hydroxy, aldehyde, keto, oxo acids. Fats. Amino acids, proteins. Carbohydrates. Organometallic compounds. Benzene. Nitro derivatives. Aromatic amines, cyanides, isocyanides. Diazonium salts. Aromatic sulfonic acids, halogen compounds. Phenols. Aromatic alcohols, ethers, aldehydes, ketones, carboxylic acids. Polynuclear hydrocarbons. Condensed polynuclear aromatic hydrocarbons. Dyes. Alicyclic compounds. Terpenes, camphors. Heterocyclic compounds. Alkaloids. Steroid group, plant pigments, vitamins. Polymerization.

Note: A rigorous college course in organic chemistry. The first chapter deals with the nature of atoms, the types of linkages, and the activation of molecules for reaction. This theoretical material is referred to frequently throughout the book and utilized in explaining the behavior of different types of compounds. The aim of the book is to develop a balanced presentation of the theoretical aspects of organic chemistry, of the properties, methods of preparation, and reactions of organic compounds, of the I.U.C. system of nomenclature and its relation to earlier systems, and of the physiological effects and uses of organic substances.

HUNTRESS, ERNEST HAMLIN

A brief introduction to the use of Beilstein's *Handbuch der organischen Chemie*. Second edition, revised. New York: John Wiley & Sons, Inc., 1938. 44 p. 23 cm. \$1.00. 956

Note: Provides a simplified explanation in English of the Beilstein method of classification of organic compounds as presented in the fourth and latest edition of the *Handbuch*. It is based on the comprehensive and useful system developed by Prager and Jacobson, and offers an elementary exposition of this system. Treatment is brief and compact, condensing the fundamentals of the scheme of classification into four charts with accompanying explanation, illustrative examples, and problems.

LEVENE, PHOEBUS AARON THEODORE, AND LAWRENCE W. BASS

Nucleic acids. New York: Reinhold Publishing Corporation, 1931. 337 p. illus. 24 cm. (American Chemical Society monograph series. No. 56) \$4.50. 957

Contents (abridged): Introduction. Part I, Components of the nucleic acids: Sugars. Imidines, imido esters, and imidazoles. Pyrimidines. Uric acid and purine. Purine bases. Nucleosides. Nucleotides. Part II, The nucleic acids: Discovery of nucleic acids and of their components. Structure of nucleic acids. Nucleic acids of higher order. Nucleases. Index.

Note: Abandoned theories as well as those upheld today are given in this specialized text for chemists. The historical experimentation and probable structure are given for many nucleic acids. Further references are provided in bibliographical footnotes.

LOWY, ALEXANDER, AND BENJAMIN HARROW

An introduction to organic chemistry. Fifth edition. New York: John Wiley & Sons, Inc., 1940. 400 p. illus. 23 cm. \$3.00. 957a

Contents (abridged): Part I, Aliphatic series: Hydrocarbons. Alcohols. Ethers. Aldehydes and ketones. Acids. Salts and esters of inorganic and organic acids. Fats and oils, waxes and lipids. Acid anhydrides, acyl halides and acid amides. Halogen substituted acids and hydroxy acids. Amines or organic bases. Amino acids and proteins. Nucleoproteins, purines, uric acid and pyrimidines. Cyanides, isocyanides and other nitrogen compounds. Carbohydrates and related compounds. Sulfur, phosphorus, arsenic and organo-metallic compounds. Part II, Aromatic series. Part III, General topics: Plant and animal pigments. Enzymes, vitamins and hormones. Nomenclature of organic compounds. Appendix: Glossary. Boiling and melting points of a number of organic compounds. Dissociation constants of acids and bases. Latin and Greek roots in chemical terminology. General reference books. Index.

Note: The fifth edition of this book has been revised and enlarged to include the following new features: questions at the

1936
ends of chapters, a page of models of organic molecules, a fairly complete system of group and ring nomenclature, and an additional table indicating Latin and Greek derivations in chemical terminology. The list of reference books has also been revised. The same publisher offers a companion volume written by Alexander Lowy and W. E. Baldwin, entitled *A laboratory book of elementary organic chemistry*, second edition, 1934, 182 p., \$2.50.

LUCAS, HOWARD JOHNSON

Organic chemistry. New York: American Book Company, 1935. 692 p. illus. 22 cm. \$3.75.

958

Note: This introductory college textbook explains physical and chemical properties of organic compounds in terms of the electron theory, and simple aliphatic and aromatic compounds are taken up before the more difficult topics of acetoacetic ester, proteins, and carbohydrates. Among the topics discussed are valence and molecular structure, the relationship between properties of compounds and their polar nature, the strain theory of rings, organo-metallic compounds, ethers, esters, and anhydrides as a group, principles of substitution, benzene ring, the resonance theory as applied to benzene substitution, stability of free radicals, enols, and application of bond energy values and thermodynamic data to the pyrolysis of the hydrocarbons.

LYNN, ELDIN VERNE

Organic chemistry, with applications to pharmacy and medicine. Philadelphia: Lea & Febiger, 1941. 410 p. illus. 24 cm. \$4.50.

959

Contents: Preface. Introduction. The methane series. Halogen derivatives. Unsaturated hydrocarbons. Alcohols. Derivatives of alcohols. Polyhydric alcohols. Aldehydes. Ketones. Acids. Acid derivatives. Fats and soaps. Hydroxy-acids and related compounds. Dibasic acids. Hydroxy-polybasic acids. Amines. Other nitrogen derivatives. Sulfur derivatives. Derivatives of other elements. Derivatives of carbonic acid. Carbohydrates. Alicyclic compounds. Benzene and homologues. Direct substitution products. Amines and diazo compounds. Phenols. Polyhydric phenols. Aromatic alcohols. Aldehydes and ketones. Aromatic acids. Phenolic acids. Condensed nuclei. Condensed alicyclic. Volatile oils. Heterocyclic—five member. Heterocyclic—six member. Pyrimidine. Alkaloids. Dyes. Glycosides and resins. Proteins. Enzymes.

Note: A textbook designed to give the basic reactions in organic chemistry and their application to substances used in medicine and pharmacy. It covers general principles and properties and the reactions that are common to large groups.

MACY, RUDOLPH

Organic chemistry simplified. Brooklyn, N.Y.: Chemical Publishing Co., Inc., 1943. 431 p. illus. 23 cm. U.S., \$3.75; foreign countries, \$4.15.

960

Contents (abridged): Part I, The unique position of the carbon atom in chemistry: valence. North poles and south poles. Part II, The architecture of carbon compounds: methone and the structure theory. Carbon chains and rings. Double bonds and triple bonds. Stereochemistry and isomerism. From partial valence to resonance. The benzene ring. The nucleus and the side chain. Part III, The classification of carbon compounds: the common methods of classification. Alkyl radicals and aryl radicals. Halogen compounds. Primary, secondary, and tertiary compounds. Oxygen compounds: alcohols, phenols, ethers, aldehydes and ketones, carboxylic acids, and mixed types. Nitrogen compounds. Part IV, Special topics in organic chemistry: structures of complex compounds. Heterocycles and condensed cycles. Proteins. Carbohydrates. Dyes. Drugs. Hormones and vitamins. Isotopic chemistry. Giant molecules. Index.

Note: A compact and simplified textbook intended both for college students and for persons who are concerned with organic chemistry in industry. It is suitable also as a home-study book.

ORGANIC REACTIONS. VOLUME II. Roger Adams, editor-in-chief. New York: John Wiley & Sons, Inc., 1944. 461 p. illus. 23 cm. \$4.50.

961

Contents: The Claisen rearrangement. The preparation of aliphatic fluorine compounds. The Cannizzaro reaction. The formation of cyclic ketones by intramolecular acylation. Reduction with aluminum alkoxides. The preparation of unsymmetrical biaryls by the diazo reaction and the nitrosoacetylamine reaction.

Replacement of the aromatic primary amino group by hydrogen. Periodic acid oxidation. The resolution of alcohols. The preparation of aromatic arsenic and arsenic acids by the Bart, Bechamp, and Rosenmund reactions. Index.

Note: The second volume of a series, the first of which appeared in 1942. Additional volumes are intended to appear at approximately yearly intervals, each following the same general plan and scope but incorporating the results of the latest research with each publication. The purpose is to provide the advanced student and the research worker in organic chemistry with a description of the method, and a critical evaluation of the results, of the various synthetic organic reactions. Each chapter is devoted to a single reaction and the subjects are presented from the preparative viewpoint, particular attention being given to limitations, interfering influences, effects of structure, and the selection of experimental techniques; each chapter includes several detailed procedures illustrating the significant modifications of the method. Tables are also given listing compounds which have been prepared by or subjected to the reaction, accompanied by bibliographic notes for further study.

ORGANIC SYNTHESSES: An annual publication of satisfactory methods for the preparation of organic chemicals. Nathan L. Drake, editor-in-chief. Volume 24. New York: John Wiley and Sons, Inc., 1944. 119 p. illus. 23 cm. \$2.00.

962

Contents: Acenaphthenequinone. Aminoacetal. 4-amino-2,6-dimethylpyrimidine. dl- α -amino- α -phenylpropionic acid. 4-amino-1,2,4-triazole. Benzoyl cyanide. Benzoylformic acid. *tert*-butyl acetate. *o*-chlorobromobenzene. ω -chloroisonitrosoacetophenone. 2-chlorolepidine. 1-chloromethylnaphthalene. Coumaric acid. Cyclopropanecarboxylic acid. *nor*-desoxycholic acid. 3,12-diacetoxy-bisnor- γ -cholanyldiphenylethylene. γ -di-*n*-butylaminopropylamine. 2,6-dichloroaniline and 2,6-dibromoaniline. Diphenyldiazomethane. Ethyl diazoacetate. Ethyl hydrazinecarboxylate and diaminobiuret. Ethyl *N*-tricarboxylate. Glyoxal bisulfite. 4(5)-hydroxymethylimidazole hydrochloride. 4-methylcarbostyryl. 4-methylcoumarin. Methyl pyruvate. *o*-nitrobenzaldehyde. *p*-nitrobenzyl acetate. *p*-nitrobenzyl alcohol. Phenylmethylglycidic ester. 1-phenylnaphthalene. α -phenylpropionaldehyde. Selenophenol. Sorbic acid. Undecyl isocyanate. Vinylacetic acid. Subject index for volumes 20-24.

Note: This series has been published annually since 1921. The listing and table of contents given above pertain only to Volume 24, but they are typical of the series. For each substance, convenient laboratory methods are given, the apparatus is described and, if necessary, illustrated, and a bibliography containing references to all the published methods for the production of the substance is given. The directions are for the preparation of the substances in one-half to five-pound lots, and in most cases they are adaptable to large-scale development. Before publication, each experiment is carried out in at least two laboratories. See the descriptions of *Collective volume 1* and 2 below.

ORGANIC SYNTHESSES. Collective volume 1; being a revised edition of annual volumes I-IX. Henry Gilman, editor-in-chief. Second edition, edited by A. H. Blatt. New York: John Wiley & Sons, Inc., 1941. 580 p. illus. 23 cm. \$6.00.

963

— Collective volume 2; a revised edition of annual volumes X-XIX. Edited by A. H. Blatt. New York: John Wiley & Sons, Inc., 1943. 654 p. illus. 23 cm. \$6.50.

964

Note: These collective volumes contain in revised form the material which appeared in the first 19 annual volumes. In the revision of the material, errors found in the original printings have been corrected; calculations and references have been checked; modifications and improvements in procedures, which were noted in appendixes in the annual volumes, have been incorporated in the text; new and improved procedures have been added and the material rearranged in the alphabetical order of the names of the substances. Whenever a compound whose preparation is described can be purchased for about five dollars or less per kilogram, the directions for its preparation have been marked with an asterisk to indicate this fact.

PATTERSON, AUSTIN McDOWELL, AND LEONARD T. CAPELL

The ring index; a list of ring systems used in organic chemistry. Under the direction of a

joint committee of the American Chemical Society and the National Research Council with the cooperation of the International Union of Chemistry. New York: Reinhold Publishing Corporation, 1940. 661 p. 23 cm. (American Chemical Society monograph series. No. 84) \$8.00. 965

Contents: Preface. How to use the ring index. Introduction. Historical. Scope of the ring index. Arrangement. Serial number. Structural formula. The fundamental form. Condensed formula. Names. Other states of hydrogenation. Standard numbering. Rules numbering vs. genetic numberings. Other numberings. References. Other features of the entry. Nomenclature. Class A₁ (simple carbocyclic rings). Class A₂ (simple heterocyclic rings). Class B (ordinary fused systems). Class C₁ (bridged systems related to Class B). Class C₂ (bridged systems related to Class B). Class C₃ (complex bridged systems). Class D₁ (simple spiro systems). Class D₂ (complex spiro systems). Abbreviations and symbols. Ring index. (Systems containing from one to nineteen rings). Index of names.

Note: This is a compilation of over 4,000 parent ring systems, that have been reported in the literature of organic chemistry up to and in 1939. The purpose of the index is to provide a convenient classification of organic ring structures along with a standard and authoritative system for their numbering and nomenclature. The entries in the index are classified first according to the number of rings present in the structure (from 1 to 19) and then according to the number of atoms in the component rings. For each entry, there are given: (1) a structural formula showing the standard method of numbering the component atoms of the rings; (2) a serial number to serve as a method of identifying the system in references to it; (3) the systematic name of the entry; (4) any generally accepted name which takes precedence over the systematic name (in bold-face type); (5) any other trivial names which are more or less generally accepted (in italics); (6) other names which appear in literature; (7) one or more original literature references, usually including the earliest work giving the structure with certainty; (8) a volume and page reference to the fourth edition of Beilstein's "Handbuch" (if the system appears there; more than half of the systems are too recent to be found in Beilstein); (9) other methods of numbering, different from the standard method, but used to appreciable extent in literature. Research chemists engaged in synthesis or in structure proof, teachers and advanced students of chemistry will use it as a rapid means of checking the known chemical relations of compounds encountered in their work. The book also provides a useful shortcut in literature searching, since there is no other one place where all these systems may be found.

PORTER, CHARLES WALTER

The carbon compounds; a textbook of organic chemistry. Third revised edition. Boston: Ginn and Company, 1938. 495 p. illus. 24 cm. \$4.00. 966

Contents (abridged): Introduction. Aliphatic compounds: Hydrocarbons. Alcohols. Alkyl halides and paraffin polyhalides. Ethers. Aldehydes and ketones. Monobasic acids and their derivatives. Optical isomerism. Polybasic acids and their derivatives. Aliphatic amines. Cyanides and cyanates. The carbohydrates. Enzymes. Aromatic compounds: Hydrocarbons. Hydrocarbon derivatives. Aromatic amines. Phenols. Alcohols, aldehydes, and ketones. Aromatic acids and their derivatives. Orientation and steric influences of substituents. Free radicals. Dyes. The proteins. Vitamins, purines and pyrimidines. The alkaloids. Essential oils. General organic reactions: Hydrolysis. Oxidation. Reduction. Conjugation and resonance. Condensation processes. Structural rearrangements. Appendix: Formulas, molecular weights, vapor pressure, boiling point and freezing point, osmotic pressure. Questions and problems. Index.

Note: An elementary course in organic chemistry for colleges. Three main divisions—aliphatic compounds, aromatic compounds, and general organic reactions—develop the science of organic chemistry on the basis of general reactions without undue emphasis on the specific properties of compounds. Over twenty tables of physical constants tend to correlate to some extent the relation between structure and physical properties.

PORTER, CHARLES WALTER, AND T. D. STEWART

Organic chemistry. Boston: Ginn and Company, 1943. 577 p. illus. 22 cm. \$4.00. 967

Contents: Introduction. Aliphatic hydrocarbons. Aliphatic alcohols, mercaptans, and ethers. Aliphatic halides and polyhalogen compounds. Aliphatic aldehydes and ketones. Aliphatic monobasic acids and their derivatives. Aliphatic dibasic acids and their derivatives. Aliphatic amines. Hydroxy acids and keto acids. Carbon dioxide and its derivatives. Cyanides, isocyanides, isocyanates, and fulminates. Esters of inorganic acids. The carbohydrates. Aromatic hydrocarbons. Aromatic halides, nitro compounds, and sulfonic acids. Aromatic amines, diazonium compounds, and hydrazines. Phenols and related compounds. Aromatic alcohols, aldehydes, and ketones. Aromatic acids and their derivatives. Proteins and amino acids. Optical isomerism. Natural and synthetic dyes. Heterocyclic compounds. The terpenes. Sterols, vitamins, and hormones. Enzymes. Supplementary notes. Appendix. Questions and problems. Index.

Note: In this college textbook more than usual attention is given to hydrocarbons. Recent work on isomerization, polymerization, alkylation, and cracking is included. The Markownikoff and Kharasch orientations of addition to alkenes are presented and correlated with the directing influence of groups in benzene substitution. There are full discussions of carbohydrates (including mechanisms of photosynthesis and of fermentation), proteins and amino acids, vitamins, sterols, hormones, and enzymes. The authors have written also *Organic chemistry for the laboratory*. Boston: Ginn and Company, 1943, 222 p., \$2.00, which provides directions for experiments for either year or half-year courses, and may be used with this text.

POST, HOWARD WILLIAM

The chemistry of the aliphatic orthoesters. New York: Reinhold Publishing Corporation, 1943. 188 p. 23 cm. (American Chemical Society monograph series. No. 92) \$4.00. 968

Contents: General introduction. Introduction. Preparation and general properties. Reactions with or catalyzed by inorganic acidic substances. Reactions with organic acids. Anhydrides and halides. Reactions with nitrogen compounds. Reactions with organo-metallic compounds. Carbohydrate orthoesters and orthoacids. Miscellaneous reactions. Silicoorthoesters: Preparation and physical properties. Chemical properties of silicoorthoesters. Polyalkoxides of other elements of the fourth column. Physical properties of orthoesters. Author index. Subject index.

Note: The existing literature in the field has been coordinated and presented in concentrated form for the chemist. The treatment is mainly descriptive. Extensive bibliographies accompany all but the first chapter.

RAY, FRANCIS EARL

Organic chemistry. Chicago: J. B. Lippincott Company, 1941. 706 p. illus. 23 cm. \$4.00. 969

Contents: Aliphatic compounds: Paraffin or alkane series. Olefins (alkenes) and acetylenes (alkynes). Alcohols and glycols. Aldehydes and ketones. Acids. Acyl halides, anhydrides, and amides. Esters and ethers. Polyfunctional esters and acids. Stereoisomerism. Sulfur compounds. Amines. Amino acids and proteins. Carbohydrates. Aromatic compounds: Benzene. Aromatic halogen compounds. Sulfonic acids. Aromatic nitro compounds. Aromatic amines. Diazonium compounds. Phenols. Aromatic alcohols, aldehydes, and ketones. Aromatic acids and their derivatives. Phenolic and hydroxy acids. Polynuclear hydrocarbons. Quinones. Dyes and indicators. Heterocyclic compounds. Alkaloids and related drugs. Organometallic compounds. Terpenes. Index.

Note: A general college text intended for students intending to specialize in chemistry, chemical engineering, medicine, or pharmacy. The aim is to lead the student from the most elementary beginnings of the subject to the point where he can read with profit much of the current literature. Methods of science are emphasized rather than results, special consideration being given to the correlation of methods of synthesis which are used in the elucidation of properties. Applications to each of the above mentioned professions are described and illustrated.

REMICK, ARTHUR EDWARD

Electronic interpretations of organic chemistry. New York: John Wiley & Sons, Inc., 1943. 474 p. illus. 22 cm. \$4.50. 970

Contents: Pre-electronic theories of chemical affinity. Early applications of the electron theory to problems of organic reactivity. Application of the Lewis theory to problems of molecular structure. The generalized concept of oxidation-reduction. Outline of the electronic theory of the English school. Some con-

tributions from the field of chemical physics. Some contributions from the field of kinetics. Electrochemical studies of organic oxidation-reduction reactions. Electron-pairing reactions. The role of the solvent. Electron-sharing displacement reaction. Appendix. Index.

Note: Shows how electronic theories of organic chemistry may be combined with such modern developments in physical chemistry as the quantum-mechanical concept of resonance and the transition-state theory of reaction rates. The book presents those developments in the field of physical and theoretical chemistry that offer new methods of attacking the problems of preparative organic chemistry. There is ample critical discussion of evidence on which growing theories are based, and all ramifications of the English theory are given in detail.

RICE, FRANCIS OWEN, AND K. K. RICE

The aliphatic free radicals. With a foreword by F. A. Paneth. Baltimore: The Johns Hopkins Press, 1935. 204 p. illus. 23 cm. \$4.50. 971

Contents: Introduction. Early history. Historical: 1912-1934. Preparation and identification. Properties and reactions. Activation energies of elementary reactions. Paraffin hydrocarbons. Ketones and aldehydes. Ethers. Olefinic hydrocarbons. Other organic compounds. Larger molecules. Alicyclic compounds. Reactions in the liquid phase. Appendixes. Index of names. Index of subjects.

Note: An account of the preparation and properties of those aliphatic free radicals which were discovered during the few years prior to 1934, together with a presentation of hypothetical free radical mechanisms for the thermal decomposition of numerous aliphatic compounds. The work is based largely on a summary of the pertinent literature of the field, and is intended as an aid to those physical, organic, and biologic chemists working in this and related fields. References are given in footnotes.

RICHTER, GEORGE HOLMES

Textbook of organic chemistry. Second edition. New York: John Wiley & Sons, Inc., 1943. 759 p. illus. 23 cm. \$4.00. 972

Contents: Introduction. Saturated hydrocarbons. Unsaturated hydrocarbons. Acetylenic hydrocarbons. Alcohols. Ethers. Aldehydes and ketones. Monobasic acids—geometrical isomerism. Halogen derivatives—Grignard reaction. Acyl halides—acid anhydrides. Esters—oils—fats—waxes. Acid amides. Cyanides and nitro compounds. Amines. Compounds of sulfur. Polybasic acids. Halogenated acids—hydroxy acids—optical isomerism. Aldehydic and ketonic acids—tautomerism. Aromatic compounds. Chemistry of the simple aromatic hydrocarbons. Aryl amines. Phenols and aminophenols. Aromatic arsenic derivatives. Aromatic alcohols, aldehydes and ketones. Aromatic acids. Polynuclear aromatic compounds. Coal tar dyes. Carbohydrates. Amino acids—proteins. Natural products, terpenes—sterols. Heterocyclic systems. Ureides and purines. Alkaloids. Index.

Note: An elementary treatment of the subject. Among the many changes in the second edition, these in particular should be noted: the chapters on amino acids, proteins, sugars and purines now follow the survey of the aromatic series; the material on natural products, hitherto scattered throughout the early chapters, has been collected in a chapter on the subject and appears in a later part of the book; an entirely new section on the terpenes has been added; the derivations of several mathematical equations involving the calculus have been deleted; the concept of resonance is introduced in chapter I and applied to the structure of nitro compounds, benzene and free radicals; the chapters on aliphatic hydrocarbons have been enlarged; special attention has been devoted to the inclusion of new material on plastics. A laboratory manual designed for use with this text is the author's *Laboratory manual of elementary organic chemistry*, New York: John Wiley & Sons, Inc., 1940, 128 p., \$1.25.

STRAIN, HAROLD HENRY

Leaf xanthophylls. With a foreword by H. A. Spoehr. Washington, D.C.: Carnegie Institution of Washington, 1938. 147 p. illus. (part col.) 25 cm. (Carnegie Institution of Washington. Publication no. 490) Paper, \$2.00; cloth, \$3.00. 974

Contents (abridged): Separation of leaf xanthophylls. Molecular structure of carotenes. Molecular structure of xanthophylls. Physiological functions of leaf xanthophylls. State of xanthophylls in

leaves. Oxidation of xanthophylls in killed leaves. Carotenoids and their principal properties: Carotenes. Xanthophylls. Xanthophyll esters. Carotenoid acids. Unclassified carotenoids. Experimental methods: Extraction and separation of leaf xanthophylls. Determination of properties. Experimental results: Isolation, separation, and properties of leaf xanthophylls. Oxidation of carotenoid pigments in killed leaves. Formation and nature of pigments in leaves at various stages of development. Summary. Bibliography. Indexes.

Note: A report of investigations made from 1934 to 1937.

SUTER, CHESTER MERLE

The organic chemistry of sulfur, tetravalent sulfur compounds. New York: John Wiley & Sons, Inc., 1944. 858 p. 22 cm. \$10.00. 975

Contents: Esters of sulfuric acid. Aliphatic sulfonic acids. The preparation of aromatic sulfonic acids. Properties and reactions of aromatic sulfonic acids. Derivatives of aromatic sulfonic acids, 1: Sulfonyl halides, esters, and anhydrides. Derivatives of aromatic sulfonic acids, 2: Sulfonamides and related compounds. Sulfones. Index.

Note: The practical value of compounds is considered as well as their chemical properties. Numerous references to the patent literature are given. Chemists in petroleum products and dye-stuff laboratories, and those dealing with surface active agents in soaps or textile processing, will find this book of wide scope and usefulness. Many compounds of biological or medicinal interest are described, including saccharin, sulfonamides, sulfones, sulfonephthaleins and aminosulfonic acids.

THOMAS, CHARLES ALLEN, AND OTHERS

Anhydrous aluminum chloride in organic chemistry, by Charles Allen Thomas, in collaboration with Mary Baluk Moshier, Herbert E. Morris, and Ross W. Moshier. New York: Reinhold Publishing Corporation, 1941. 972 p. illus. 23 cm. (American Chemical Society monograph series. No. 87) \$15.00. 976

Contents (abridged): Introduction. Historical sketch of Charles Friedel and James Mason Crafts. Physical properties of anhydrous aluminum chloride. Mechanism of reactions catalyzed by anhydrous aluminum chloride. Friedel-Crafts syntheses. Addition reactions. Aldehyde syntheses. Aromatic halogenation. Dehydrating condensations. Dehydrogenating condensations and reduction phenomena. Aromatic rearrangements and migrations. Effect of anhydrous aluminum chloride on aromatic compounds. Anhydrous aluminum chloride in aliphatic chemistry. Polymerization. Anhydrous aluminum chloride in the petroleum industry. Preparation, manufacture, and purification of anhydrous aluminum chloride. Notes on application of anhydrous aluminum chloride. Patent index. Author index. Subject index.

Note: Both theory and application are included in this advanced work for research and industrial chemists. The material is treated in detail and supplemented by bibliographical footnotes and references at the end of some chapters.

WERTHEIM, EDGAR

Introductory organic chemistry, with certain chapters of biochemistry. Philadelphia: The Blakiston Company, 1942. 482 p. illus. 23 cm. \$3.00. 977

Contents (abridged): Saturated hydrocarbons. Unsaturated. Halogen derivatives. Aliphatic alcohols. Ethers. Aldehydes and ketones. Aliphatic monocarboxylic acids. Acid chlorides, anhydrides. Esters. Hydroxy acids. Dicarboxylic acids. Amides, urea, amines. Carbohydrates. Aromatic hydrocarbons. Aromatic nitro compounds, amines, diazo compounds, alcohols, phenols, aldehydes, ketones, acids. Terpenes, dyes, heterocyclic compounds. Amino acids, proteins. Glycosides, enzymes, hormones, vitamins. Digestion, absorption of foods. Metabolism. Nutrition. Foods and dietary necessities.

Note: This textbook was written for the use of students in applied organic courses such as home economics, agriculture, premedical, and pre dental. The introductory chapter is devoted to the orientation of organic chemistry to other sciences and to daily life. The relationship of organic chemicals to agricultural products is stressed. The structure of various typical compounds is worked out to show the value of the graphic formulas and

how they are determined for simple compounds. The subject of correct nomenclature receives adequate treatment in the various chapters and a helpful list of name endings is given in the appendix. The vitamins are given careful study; formulas for vitamins known up to September, 1941 are included. Fats, carbohydrates and proteins are given extended treatment in preparation for courses in nutrition and biochemistry.

WERTHEIM, EDGAR

Textbook of organic chemistry. Philadelphia: The Blakiston Company, 1939. 830 p. illus. 24 cm. \$4.00. 978

Contents (abridged): Part I, Aliphatic compounds: Methane series of hydrocarbons. Unsaturated compounds. Halogen derivatives of hydrocarbons. Alcohols. Ethers. Aldehydes, ketones. Monobasic acids. Acid derivatives. Substituted, dicarboxylic acids. Urea. Thiourea. Guanidine. Uric acid. Purines. Nitriles. Isonitriles. Amines. Compounds of arsenic, phosphorus, sulfur, metals. Optical activity. Carbohydrates. Part II, Aromatic compounds: Hydrocarbons. Halogen derivatives. Sulfonic acids. Nitro compounds. Aromatic amines. Diazo compounds. Aromatic alcohols, acids, aldehydes, ketones, quinones. Grignard and Friedel-Crafts reactions. Glycosides. Aromatic arsenic. Naphthalene. Terpenes. Dyes. Alicyclic, heterocyclic compounds. Alkaloids. Proteins. Chemistry in human body. Identification of organic compounds.

Note: This book presents material for a two-semester beginning course in the theory of organic chemistry. It is intended to serve the needs of students who will major in chemistry or specialize in organic chemistry, also those who are enrolled in premedical or chemical engineering courses. The importance of the graphical formula as a key to chemical behavior is emphasized by comment and liberal use. Every legitimate aid is offered the student for assimilation and review of the data by using study questions, reaction charts, review outlines, summaries, and numerous illustrations. A laboratory manual designed for use with this book and with other texts in the subject is the author's *A laboratory guide for organic chemistry*, second edition, Philadelphia: The Blakiston Company, 1940, 560 p., \$2.00.

WHELAND, GEORGE WILLARD

The theory of resonance and its application to organic chemistry. New York: John Wiley and Sons, Inc., 1944. 316 p. illus. 22 cm. \$4.50. 979

Contents: The theory of resonance. The nature of valence. Resonance energy. Steric effects of resonance. Resonance and dipole moments. Resonance and molecular spectra. Resonance and chemical equilibrium. Resonance and chemical reaction. Interatomic distances in organic molecules. Author index. Subject index.

Note: A survey of the development of the theory of resonance, particularly as it applies to organic chemistry. The book has grown out of a course of lectures presented by the author to advanced graduate and beginning graduate students at the University of Chicago. The treatment is largely non-mathematical, but the author has not over-simplified the discussion.

WHITMORE, FRANK CLIFFORD

Organic chemistry. New York: D. Van Nostrand Company, Inc., 1937. 1080 p. illus. 22 cm. \$7.50. 980

Contents (abridged): Part I, Aliphatic compounds: Hydrocarbons. Halides. Alcohols. Ethers. Esters of inorganic acids. Amines and related compounds. Compounds of the phosphorus family. Aldehydes and ketones. Derivatives of acids. Hydroxyacids. Polybasic acids. Purines and derivatives. Carbohydrates. Amino acids. Proteins. Part II, Alicyclic compounds: Cyclopropane. Cyclobutane. Cyclopentane. Cyclohexane. Terpenes. Carotenoids. Cholane series. Part III, Aromatic compounds: Benzene. Polynuclear hydrocarbons and derivatives. Naphthalene. Part IV, Heterocyclic compounds: 5-membered rings. 6-membered rings. Alkaloids. Index.

Note: This college textbook has been designed for advanced courses in organic chemistry. It covers systematically all the major groups of organic compounds, and the important members of each group, giving their sources, methods of preparation, properties, and reactions. One of the features of this book is the data it supplies on the percentage yields of various chemical reactions, which give the student a valuable criterion of the practical usefulness of the reactions in plant and laboratory.

WILLIAMS, ROGER JOHN

An introduction to organic chemistry. Fourth edition. New York: D. Van Nostrand Company, Inc., 1941. 628 p. illus. 22 cm. \$4.00. 981

Contents (abridged): Paraffin hydrocarbons. Halogen substitution products of paraffins. Unsaturated hydrocarbons. Alcohols. Ethers. Aldehydes and ketones. Acids. Grignard reagents. Acyl halides, anhydrides of fatty acids. Esters and amides. Amines. Cyanides, cyanates, and other nitrogen compounds. Sulfur compounds. Complex and mixed aliphatic compounds. Alcohols with more than one hydroxyl group and their derivatives. Dicarboxylic acids. Hydroxy acids. Unsaturated acids. Ketonic acids. Amino acids, proteins and related substances. Carbohydrates. Alicyclic compounds. Benzene and its homologs. Halogen substitution products of benzene and its homologs. Aromatic nitro derivatives and sulfonic acids. Aromatic amino derivatives. Diazo and related compounds. Phenols. Aromatic alcohols, aldehydes and ketones. Aromatic carboxylic acids. Quinones. Naphthalene and its derivatives. Anthracene and its derivatives. Dyes—indicators. Heterocyclic aromatic ring compounds. Alkaloids. Physical and chemical tools in organic chemistry. Index.

Note: This college textbook presents organic chemistry from the point of view of electronic configurations, and thus achieves a close correlation between the various formulas and reactions of inorganic and organic chemistry. The features of this fourth edition include new synthetic products of industry and medicine, more recent developments in theory, and the use of isotopes and other present-day tools of fundamental research.

WINCHELL, ALEXANDER NEWTON

The optical properties of organic compounds. Madison: The University of Wisconsin Press, 1943. 342 p. illus. 26 cm. \$5.00. 982

Contents: Acyclic compounds. Isocyclic compounds. Heterocyclic compounds. Natural products not assigned places in the three preceding groups.

Note: This useful tool, for the chemist whose work involves the identification of organic compounds, gives all the data available to the author on the crystallography and optical properties of about 1500 organic compounds. Substances are classified in accordance with the scheme used in Beilstein's *Handbuch der organischen Chemie* and each entry is accompanied by references to the sources of the data presented. More than 150 diagrams illustrate the optical properties or crystal forms of various compounds. Included also is a chart which permits the identification, by means of the measurements given, of more than 1000 organic substances. An introductory section of the book discusses critically the relative accuracy of the measurements of optical properties obtained by researchers during the past forty years. There is a ten-page bibliography and an index.

Cellulose Chemistry

HEUSER, EMIL

The chemistry of cellulose. New York: John Wiley & Sons, Inc., 1944. 660 p. illus. 22 cm. \$7.50. 983

Contents: Introduction. Morphology of the fiber and composition of the cell walls. Reactions of cellulose with water. The reaction of cellulose with aqueous alkalis. Reactions of cellulose with organic bases, ammonia, and concentrated salt solutions. The action of cuprammonium hydroxide on cellulose. Cellulose esters. Cellulose xanthates. Cellulose ethers. The oxidation of cellulose. The decomposition of cellulose by acids. The thermal decomposition of cellulose. The decomposition of cellulose by biological processes. The chain structure of cellulose. The molecular weight of cellulose. Author index. Subject index.

Note: This book supplies the reader with a compendium and critical digest of the literature on the chemistry of cellulose up to the present time, with due consideration of the microscopic and submicroscopic structure of the cellulose fiber. Emphasis is placed on the scientific aspect of the subject. The format is designed so that through the use of different sized types the reader can readily distinguish between essential subject matter, illustrative material, and those references that pertain to industrial applications. An excellent guide for industrial, research laboratory, and younger chemists.

OTT, EMIL, EDITOR

Cellulose and cellulose derivatives. A monograph prepared by a staff of specialists under the editorship of Emil Ott. New York: Interscience Publishers, Inc., 1943. 1176 p. illus. 23 cm. (High polymers: a series of monographs on the chemistry, physics and technology of high polymeric substances. Vol. v) \$15.00. 984

Contents: Introduction, by Emil Ott. Occurrence of cellulose, by K. Ward. Chemical nature of cellulose and its derivatives, by C. B. Purves and others. Structure and properties of cellulose fibers, by W. A. Sisson and others. Carbohydrates normally associated with cellulose in nature, by A. G. Norman. Lignin and other noncarbohydrates, by F. E. Brauns. Preparation of cellulose from its natural sources, by C. M. Koon and others. Bleaching and purification of cellulose, by R. S. Hatch. Derivatives of cellulose, by H. M. Spurlin and others. Physical properties of cellulose and its derivatives, by H. M. Spurlin and others. Technical applications, by W. E. Gloor. Author index. Subject index.

Note: This book is a critical review of the published literature, with a comprehensive treatment of available facts and theories. The text follows cellulose from its vegetable sources through the laboratory research, which has determined its properties, into the industrial problems such as isolation and purification, derivative formation, and technical applications. An extensive bibliography, cross references, and author and subject indexes are included.

STAMM, ALFRED JOAQUIM

Colloid chemistry of cellulosic materials. Washington, D.C.: Government Printing Office, 1936. 91 p. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 240) Paper, \$0.10. 984a

Contents: Introduction. Chemical structure. Micellar theory. Optical properties. Micro-structure. Capillary structure. Mechanical properties. Dispersion media. Degree of dispersion. Electrical conductivity. Electrokinetic phenomenon. Adsorption of solutes. Sorption of gases and vapors. Swelling. Summary. Literature cited. Appendix: Symbols and equations. Numerical data.

Note: The purpose of this publication is to make available a connected review of the colloid chemistry of cellulosic materials in the effort to stimulate further researches and discovery. Because of the vast scope of the subject, the review is confined to the studies of natural cellulosic materials and to the cellulose isolated therefrom. Cellulose derivatives are considered only where corresponding data on cellulose are lacking and where the information gained therefrom is of value in interpolating properties of cellulose itself.

Polymers and Polymerization

BURK, ROBERT EMMETT, AND OLIVER GRUMMITT, EDITORS

The chemistry of large molecules. New York: Interscience Publishers, Inc., 1943. 313 p. illus. 23 cm. (Frontiers in chemistry. Vol. 1) \$3.50. 985

Contents: The mechanism of polyreactions, by H. Mark. The investigation of high polymers with X-rays, by H. Mark. The colloidal behavior of organic macromolecular materials, by Elmer O. Kraemer. The ultracentrifuge and its application to the study of organic macromolecules, by Elmer O. Kraemer. Elastic-viscous properties of matter, by Arthur Tobolsky and others. The electrical properties of high polymers, by Raymond M. Fuoss. Organic chemistry of vinyl polymers, by C. S. Marvel. Chemistry of cellulose and cellulose derivatives, by Emil Ott. Index.

Note: A collection of eight lectures given at Western Reserve University, intended to present to the specialist and the trained research worker the most recent developments in specialized fields of organic chemistry such as the mechanism of polymerization, the identification of organic compounds, the electrical and physical properties of long-chain molecules, and related subjects.

There is a considerable amount of mathematical theory presented in each paper, together with graphic formulas and other chemical data. Bibliographies are given after each paper.

CAROTHERS, WALLACE HUME

Collected papers by Wallace Hume Carothers on high polymeric substances, edited by H. Mark, and G. Stafford Whitby. With 35 illustrations. New York: Interscience Publishers, Inc., 1940. 459 p. illus. 23 cm. (High polymers; a series of monographs on the chemistry, physics and technology of high polymeric substances. Vol. 1) \$8.50. 986

Contents: Preface. Biography. Studies on polymerization and ring formation. Acetylene derivatives and synthetic rubber. Miscellaneous papers. Bibliography and list of patents. Subject index. Author index.

Note: This volume presents in systematic order, with critical comments, all the classical papers of W. H. Carothers on polymerization and acetylene derivatives which led to the discovery of nylon and neoprene. The first part of the book is concerned essentially with condensation polymers. The second part deals with polymers produced by the self-addition of conjugated systems, and considerable attention is also given to the chemical reactions of vinylacetylene and divinylacetylene. A complete bibliography includes a list of Carothers' 52 patents.

MARK, HERMANN FRANZ, AND R. RAFF

High polymeric reactions, their theory and practice. Translated from the manuscript by Luise Harris Weissberger and I. P. Irany, with 49 illustrations. New York: Interscience Publishers, Inc., 1941. 476 p. illus. 23 cm. (High polymers; a series of monographs on the chemistry, physics and technology of high polymeric substances. Vol. III) \$6.50. 987

Contents: Part I, General: Structure of high polymers. Experimental methods. Fundamentals of reaction kinetics. The general theory of the mechanism of polyreactions. Degradation reactions and removal of substituents. Part II, Special: Polymerizations of organic and inorganic compounds. Polycondensations. Indexes.

Note: This volume describes the present state of our knowledge concerning the mechanism of chemical processes during which high polymers are formed. The first or general part of the book presents all important general relationships in a quantitative manner, while the second or special part collects the literature on the subject arranged according to the classification usual in organic chemistry. The special aim of the authors is to show how far physico-chemical measurements allow a quantitative description of the mechanism of polyreactions at the present time. The footnotes throughout the text contain numerous references to the literature of the field. This is the only edition of this work. No edition of it in German was published.

MARK, HERMANN FRANZ

Physical chemistry of high polymeric systems. Translated from the manuscript by K. Sinclair. Revised by J. Edmund Woods. With 99 illustrations. New York: Interscience Publishers, Inc., 1940. 345 p. illus. 23 cm. (High polymers; a series of monographs on the chemistry, physics and technology of high polymeric substances. Vol. II) \$6.50. 987a

Contents: The geometry of molecules. The internal motions of molecules. Primary and secondary valences. Crystal structure, lattice forces and chemical structure of the unit cell. Molecular arrangement in liquids and the investigation of very minute crystals. The behavior of mixtures. Kinetic phenomena in high polymer chemistry. Author index. Subject index.

Note: In this volume an attempt has been made to treat the relationships between structure and properties of the individual representatives of the high polymers and their material properties. Those parts of general and physical chemistry particularly necessary to the study are first outlined, followed by a detailed dis-

cussion of the physical and chemical methods which have proved necessary and effective in the preparation, purification, examination, and elucidation of the high polymers. The book was essentially completed when the author was Professor of Chemistry at the University of Vienna, but this translation, made when he became Professor of Organic Chemistry at Polytechnic Institute, Brooklyn, N.Y., marks the first appearance of the book in print.

Protein Chemistry

ABRAMSON, HAROLD ALEXANDER, AND OTHERS

Electrophoresis of proteins and the chemistry of cell surfaces, by Harold A. Abramson, Lawrence S. Moyer, and Manuel H. Gorin. New York: Reinhold Publishing Corporation, 1942. 341 p. illus. 23 cm. \$6.00. 988

Contents: General principles of electric migration in liquids. Experiments in the nineteenth century. Methods. Dissolved and adsorbed proteins and related surfaces. Electrokinetic theory and migration of charged particles. Electric mobility and the calculation of the net charge. Serum and plasma. Antibodies, antigens and their reactions. Interactions of proteins in mixtures. Interactions of proteins at surfaces. Enzymes and hormones. Miscellaneous electrophoretic investigations of biological interest. Latex. Surface chemistry of cells. Name index. Subject index.

Note: The principles described apply to many diverse fields: to the treatment of allergies, which is the particular interest of the authors; to the study of blood and skin chemistry, which is of concern to dermatologists, physicians and cosmeticians; as well as to such industrially practical substances as wool, rubber latex, and other complex molecules in which proteins are involved.

ANSON, MORTIMER LOUIS, AND JOHN T. ED-SALL, EDITORS

Advances in protein chemistry. Volume I. New York: Academic Press, Inc., 1944. illus. 23 cm. \$5.50. 989

Contents: Lipoproteins, by Erwin Chargaff. Structural proteins of cells and tissues, by Francis O. Schmitt. Some contributions of immunology to the study of proteins, by Henry P. Trefers. The interaction between the alkali earth cations, particularly calcium, and proteins, by David M. Greenberg. The purification and properties of certain protein hormones, by Bacon F. Chow. Soybean protein in human nutrition, by Donald S. Payne and L. S. Stuart. Nucleoproteins, by Jesse P. Greenstein. The proteins of skeletal muscle, by Kenneth Bailey. Indexes.

Note: This first volume of a projected series of contributions to the study of protein chemistry is devoted mainly to a discussion of proteins as they occur in nature as components of complex biological systems. The various papers cover the later techniques developed for the study of specific problems and outline the industrial and medical applications of protein chemistry. There are rather extensive bibliographies after most of the papers.

COHN, EDWIN JOSEPH, AND OTHERS

Proteins, amino acids and peptides as ions and dipolar ions, by Edwin J. Cohn and John T. Edsall, including chapters by John G. Kirkwood, Hans Mueller, J. L. Oncley, and George Scatchard. New York: Reinhold Publishing Corporation, 1943. 686 p. illus. 23 cm. (American Chemical Society monograph series. No. 90) \$13.50. 990

Contents (abridged): Spectroscopy and dipolar ionic structure. Dipolar ions and acid-base equilibria. Dielectric constants and dipole moments of dipolar ions. Apparent molal volume, heat capacity, compressibility and surface tension of dipolar ions in solution. Interactions between organic solvents and dipolar ions. Interactions between amino acids, peptides and related substances. The theoretical interpretation of the properties of solutions of dipolar ions. The structural basis of the protein molecule. Translational diffusion of amino acids and proteins. Sedimentation and diffusion in centrifugal fields. The shape of protein

molecules as determined from viscosity and double refraction of flow. The electric moments and the relaxation times of proteins as measured from the influence upon the dielectric constants of solutions. The interactions of proteins with ion and dipolar ions. The theory of electrophoretic migration. Appendix: Dielectric increments of ellipsoidal molecules of different axial ratios. Subject index.

Note: Physical and chemical characteristics are discussed in a group of papers intended for specialists. Documented by footnote references, the work is further enhanced by a number of useful tables.

SCHMIDT, CARL LOUIS AUGUST, EDITOR

The chemistry of the amino acids and proteins, with addendum, inclusive of some of the advances since 1937. Second edition. Springfield, Ill.: Charles C. Thomas, 1944. 1290 p. illus. 25 cm. \$10.00, including Addendum; the Addendum as a separate volume, \$5.00. 991

Contents: Chemical statics of amino acids and proteins: Historical. The constitution and synthesis of the amino acids. The isolation of the amino acids from proteins. The preparation of amino acids and proteins. Methods of analysis and reactions of the amino acids and proteins. Relation of the amino acids to products of biochemical importance. Peptides, peptidases, and diketopiperazines. The chemical constitution of the proteins. Molecular weights of the proteins. Certain chemical and physical characteristics of the proteins—coagulation, surface tension and films, elasticity, cohesion, viscosity, protein gels, hydration, properties of crystals, magnetic and diamagnetic properties, thixotropy, anisotropy. Optical properties of amino acids and proteins. Chemical dynamics of amino acids and proteins: Amphoter properties of amino acids and proteins. Electrochemistry of amino acids and proteins. Combination of amino acids and proteins with acids, bases, heavy metals, and other compounds. Membrane equilibria. Some thermodynamical considerations of amino acids, peptides, and related substances. Dipolar ionic structure and solubility of amino acids, peptides, and proteins—amino acids, peptides, and proteins as dipolar ions, solubility of amino acids, peptides, and related substances, solubility of proteins. Relation of proteins to immunity. The role of proteins in nutrition. Appendix. Addendum.

Note: The second edition of this work presents a review by eighteen collaborating authors of the physical, chemical, and biological properties of the amino acids and proteins. Part I is an exact reprinting of the original 1938 volume, which covered the subject matter to 1937; it contains 1057 pages, 144 tables, 259 figures, and 2957 references to the literature. In the same volume follows Part II, the Addendum, which presents the advances from 1937 into 1942. With its chapter contents geared to the 1938 volume, but with a separate index, it consists of 270 pages, 32 tables, 41 figures, and 880 references. Its pagination continues that of the first edition.

Physical Chemistry

BIRCHER, LOUIS JACOB

Physical chemistry; a brief course with laboratory experiments. New York: Prentice-Hall, Inc., 1940. 429 p. illus. 23 cm. (Prentice-Hall chemistry series; W. M. Latimer, editor) \$4.00. 992

Contents: The structure of atoms and valence. Molecules and crystals. Theory of polarity and ionization. The gas laws and certain properties of gases, liquids, and solids. Escaping tendency of gases, liquids, and solids. Solubility and solutions: vapor pressures from solutions. Dilute solutions: vapor pressure, freezing point, boiling point, and osmotic pressure. Surface energy and the colloidal state. Reversibility of reactions—the mass law—the phase law. Free energy—a measure of chemical affinity; electromotive force and oxidation potentials. Estimation of hydrogen ion concentrations and pH values. Hydrogen ion concentration in certain aqueous solutions. Acids and bases. Hydrolysis. Buffered solutions. Indicators. Thermochemistry and thermodynamics. Reaction velocity and catalysis. Physical chemistry experiments. Index.

Note: A brief text designed for pre-medical, biology, agriculture, and engineering students. A knowledge of calculus is not required. There are chapter bibliographies.

BRUNAUER, STEPHEN

The adsorption of gases and vapors. Volume 1: Physical adsorption. Princeton: Princeton University Press, 1943. 520 p. illus. 23 cm. \$7.50. 993

Contents: Introduction. The data of adsorption. Experimental methods. The adsorption isotherm I. The adsorption isotherm II. The heat of adsorption I. The heat of adsorption II. The surface of the adsorbent I. The surface of the adsorbent II. The pore structure of the adsorbent. The adsorbate. The kinetics of physical adsorption. Mixed adsorption. Index.

Note: The first volume of a projected two-volume work. Treating adsorption as a branch of physical chemistry, it examines the facts yielded by adsorbents about the phenomenon of adsorption itself, and discusses in detail all theories to date. It also investigates what adsorption reveals about the structure of the adsorbent, analyzing surface and pore structure of all the important adsorbents. For physical chemists, either academic workers studying further theoretical developments, or industrial workers intent on immediate practical application to gas purification, separation and recovery of gases, or catalysis.

DANIELS, FARRINGTON

Chemical kinetics. Ithaca, N.Y.: Cornell University Press, 1938. 273 p. illus. 23 cm. (The George Fisher Baker Non-resident Lectureship in Chemistry at Cornell University. Vol. 17) \$3.25. 994

Contents: Introduction. General principles. Theories of uni-molecular reactions. Gas phase reactions. Chemical kinetics of reactions in solution. Photochemistry. Electrical activation. Infrared spectroscopy. Theoretical calculation of activation energies. Isotopic tracers. Index.

Note: A monograph presenting the recent advancements, together with the results of the author's own investigations in the speed and mechanisms of chemical reactions. This field of investigation is a relatively recent development in chemistry and few exact laws or generalizations existed at the time of writing. The author has taken the study of reactions in gases as the simplest approach from a theoretical standpoint, but discusses reactions in solutions also. Most of the material was delivered first as lectures at Cornell University in 1935 but new material was added into 1937.

DANIELS, FARRINGTON, AND OTHERS

Experimental physical chemistry by Farrington Daniels, J. Howard Mathews and John Warren Williams. Third edition. New York: McGraw-Hill Book Company, Inc., 1941. 460 p. illus. 23 cm. (International chemical series; L. P. Hammett, consulting editor) \$3.50. 995

Contents: Part I, Laboratory experiments: Gases. Liquids. Opticochemical measurements. Solutions. Thermochemistry. Colloid chemistry. Homogeneous equilibrium. Heterogeneous equilibrium. Chemical kinetics. Electrical conductance. Electromotive force. Electrode phenomena. Dielectric constant. Isotopes and exchange reactions. Photochemistry. Part II, Apparatus: Physical properties of gases. Physical properties of liquids. Opticochemical measurements. Solutions. Thermochemistry. Colloid chemistry. Electrical conductance. Electromotive force. Electrode phenomena. Capacity. Isotopes. Photochemistry. Part III, Miscellaneous operations: Calibration. Thermostats. Thermometers and their calibration. Vacuum tubes. Glass blowing. The use of indicators in the determination of hydrogen-ion concentration. Purification of materials. Errors. Appendix. Index.

Note: A college text book of methods and procedures in laboratory technique. Some of the experiments described are new, some based on researches described by other writers, and some are classical. The book devotes a section to advanced laboratory work for those interested in specialized research. The third edition contains new and revised experiments based on the latest developments in the field. Bibliographies are presented under each chapter.

DAVIES, EARL CLAUDIUS HAMILTON

Fundamentals of physical chemistry. Second

edition. Philadelphia: The Blakiston Company, 1940. 447 p. illus. 22 cm. \$3.50. 996

Contents: Gases. Liquids. Osmosis. Solutions. Electrolytes. Vapor. Mass action and equilibrium. Law of mass action applied to ions. Periodic law. Radioactivity. Composition of matter. Atomic structure. Hydrogen ion concentration of water and hydrolysis. Colorimetric method, electrical methods for pH. Colloids. Catalysis. Proteins and body catalysts. Energetics. Appendix. Author and subject index.

Note: This text provides a one-semester non-mathematical course in modern physical chemistry. The material has been chosen to give the necessary background for applications of physical chemistry to biological problems. Photographs of outstanding men with brief biographical notes are included. Suitable exercises and problems have been prepared for the book, and a list of laboratory experiments is included in the appendix. This edition has been revised to include new material on the applications of isotopes and artificial radioactivity to chemical changes in animals and plants, and applications in connection with rubber, cellophane, fruit, and food. The chapters on catalysis and proteins have also been rewritten and expanded.

DIETZ, VICTOR R.

Bibliography of solid adsorbents; an annotative bibliographical survey of the scientific literature on bone char, activated carbons, and other technical solid adsorbents for the years 1900 to 1942 inclusive; a contribution from the United States Cane Sugar Refiners and Bone Char Manufacturers and the National Bureau of Standards. Washington, D.C.: United States Cane Sugar Refiners and Bone Char Manufacturers, 1944. 877 p. 26 cm. \$12.00. 997

Contents (abridged): Industrial sponsors of the project. Research committee members. History of commercial adsorbents in relation to the sugar refining industry. Adsorption of gases and vapors on solid adsorbents. Adsorption from solutions on solid adsorbents. Thermal effects in adsorption processes. Theories of adsorption. Refining of sugars and other applications of adsorbents. General information on adsorbents and special methods of investigation. Preparation of carbon adsorbents. Sources of bibliography. Author index. Subject index.

Note: The main part of this work is a classified bibliography of the world literature on solid adsorbents. Six thousand and two periodical articles, United States and foreign, are cited, and for each is given the author's name, the title, the name, volume number, pagination and year of the periodical in which it appeared; and, in most cases, an abstract copied from *Chemical abstracts*. The bibliography is preceded by a substantial historical chapter. Included in the latter are tabular lists by trademark of adsorbents manufactured in the United States and foreign countries.

EYRING, HENRY, AND OTHERS

Quantum chemistry, by Henry Eyring, John Walter, and George E. Kimball. New York: John Wiley & Sons, Inc., 1944. 394 p. 22 cm. \$5.00. 998

Contents: Introduction: The old quantum theory. The principles of classical mechanics. The principles of quantum mechanics. The differential equations of quantum mechanics. The quantum mechanics of some simple systems. The hydrogen atom. Approximate methods. Time-dependent perturbations: Radiation theory. Atomic structure. Group theory. Electronic states of diatomic molecules. The covalent bond. Resonance and the structure of complex molecules. The principles of molecular spectroscopy. Elements of quantum statistical mechanics. The quantum of mechanical theory of reaction rates. Electric and magnetic phenomena. Special topics. Appendix. Index.

Note: This book is neither an exhaustive treatise on quantum mechanics nor an expanded introduction to the subject; rather, it is a consistently condensed and mathematical presentation of almost all those aspects of the science which are of particular interest to chemists. In addition to the subjects usually treated in an introductory work in quantum mechanics, this book includes four or five other major fields. Reaction rates, optical activity, molecular structure, spectroscopy, and the methods of group theory are developed and employed extensively. The book

is devoted to a great extent to applications in the field of quantum chemistry and is written at an advanced level.

GETMAN, FREDERICK HUTTON, AND FARRINGTON DANIELS

Outlines of physical chemistry. Seventh edition, by Farrington Daniels. New York: John Wiley and Sons, Inc., 1943. 691 p. illus. 23 cm. \$3.75. 999

Contents: Table of important constants. Fundamental concepts. Crystals. Physical properties and molecular structure. Work, heat and heat capacity. Thermochemistry. Thermodynamics. Liquids. Solutions. Solutions of non-volatile solutes. Colloids. Equilibria in chemical reactions. Phase diagrams. Chemical kinetics. Electrical conductance and electrolysis. Electromotive force. Ionic equilibria. Chemical thermodynamics. Quantum theory. Photochemistry. Nuclear structure. Atomic structure. Valence and molecular calculations. Appendixes: Table of atomic weights. Table of exact physical and chemical constants. Index.

Note: This book was formerly known as *Outlines of theoretical chemistry*. The seventh edition has been thoroughly modernized. It offers a somewhat more advanced treatment, particularly in the first part of the book, than did the preceding edition. The chapter on phase diagrams has been considerably expanded. A different approach to thermodynamics is used; the material has been divided into three chapters to facilitate understanding. The conventions for electrochemistry have been simplified. And, finally, many new problems and worked-out examples to illustrate principles and calculations are included.

GILLESPIE, LOUIS JOHN

Physical chemistry, an elementary text, primarily for biological and pre-medical students. New York: McGraw-Hill Book Company, Inc., 1931. 287 p. illus. 21 cm. (International chemical series, J. F. Norris, consulting editor) \$2.75. 1000

Contents (abridged): The phase rule. A simple theory of gases. General properties of liquids and solids. Surface tension. Phase relations of gases with liquids and solids for pure substances. The vapor pressure of liquid solutions. Osmotic pressure. The colligative properties of solutions of electrolytes. Theory of the conduction of electricity through aqueous solutions. Thermodynamics and free energy. Liquid junction potentials. Chemical cells. The law of mass action. Amphoteric electrolytes. Buffers and titration curves. Donnan equilibrium, membrane and interfacial potentials. The velocity of chemical reactions. Index.

Note: This short text has been developed mainly from lecture notes used in a course given by the author at the Massachusetts Institute of Technology.

GLASSTONE, SAMUEL

Text-book of physical chemistry. New York: D. Van Nostrand Company, Inc., 1940. 1289 p. illus. 23 cm. \$10.00. 1001

Contents: Atomic structure and atomic spectra. Radioactivity and isotopes. The first and second laws of thermodynamics. The gaseous state. The solid state. Changes of state. The liquid state. Physical properties and molecular structure. Dilute solutions. Phase equilibria. Chemical equilibrium. Electrochemistry. Chemical kinetics. Surface phenomena.

Note: A college textbook designed for the more comprehensive courses. It takes up the various branches of physical chemistry in the usual order, and in each case it describes the experimental methods as well as the scientific principles. Very little mathematics is used. The more recent developments in this science, especially in atomic and molecular structure and in thermodynamics, are correlated with those other facts and relationships which have been taught in colleges for many years.

GLASSTONE, SAMUEL

Theoretical chemistry, an introduction to quantum mechanics, statistical mechanics, and molecular spectra for chemists. New York: D. Van Nostrand Company, Inc., 1944. 515 p. illus. 23 cm. \$5.00. 1002

Contents: Introduction: quantum numbers. Quantum mechanics. Quantum theory of valence. Molecular spectra: diatomic molecules. Molecular spectra: polyatomic molecules. The electronic configurations of diatomic molecules. Statistical mechanics. Statistical thermodynamics. Intermolecular forces. Index.

Note: An elementary knowledge of calculus, including differential equations, is a prerequisite for this advanced text for graduate chemists. Dissociation accompanying light adsorption, valence force constants, and bond distances are a few of the topics discussed. Supplemental references are provided in the preface and as footnotes.

GLASSTONE, SAMUEL, AND OTHERS

The theory of rate processes; the kinetics of chemical reactions, viscosity, diffusion and electrochemical phenomena, by Samuel Glasstone, Keith J. Laidler, and Henry Eyring. New York: McGraw-Hill Book Company, Inc., 1941. 611 p. illus. 23 cm. (International chemical series; L. P. Hammett, consulting editor) \$6.00. 1002a

Contents: Introduction. Quantum mechanics. Potential-energy surfaces. Statistical treatment of reaction rates. Homogeneous gas reactions. Reactions involving excited electronic states. Heterogeneous processes. Reactions in solution. Viscosity and diffusion. Electrochemical processes.

Note: Representing a new approach to the subject of reaction rates, this book describes the development and application of a general theory of the kinetics of physical and chemical processes, usually known as the "theory of absolute reaction rates." The authors explain the fundamental bases, and consider homogeneous and heterogeneous gas reactions, reactions in solution, viscosity, diffusion, and electrochemical phenomena in terms of the theory.

GUCKER, FRANK THOMSON, AND WILLIAM BUELL MELDRUM

Physical chemistry. New York: American Book Company, 1942. 683 p. illus. 22 cm. \$4.00. 1003

Contents: Introduction. The composition of matter. The structure of atoms and molecules. The ideal gas. The behavior of real gases. Liquids. Solids. Thermochemistry. Solutions of nonelectrolytes. Osmosis and osmotic pressure. Reaction kinetics. The ionic theory. Ionic equilibria. Electrolytic conductance. Electromotive force. Hydrogen ion concentration and pH. Indicators. Adsorption. Colloids. Catalysis. Enzymes. The phase rule. Thermodynamics and mathematical derivations. Appendix. Index.

Note: This text is intended for use in the first year of the study of physical chemistry in colleges. Presented as simply as possible, the treatment gives a thorough consideration to the principles and applications of the subject. Physical concepts rather than mathematical equations are analyzed so that the student may acquire a clear mental picture of the makeup and behavior of matter. The book is written from the experimental point of view. The use of logarithms, graphical methods of presenting data, and the principles of the calculus are taken up briefly in the first chapter. Illustrative problems and exercises follow each chapter together with critical bibliographies and references for supplementary reading. Many of the topics and illustrations relate to biological science and thus are particularly suitable for pre-medical students.

HAMMETT, LOUIS PLACK

Physical organic chemistry; reaction rates, equilibria, and mechanisms. New York: McGraw-Hill Book Company, Inc., 1940. 404 p. illus. 21 cm. (International chemical series; J. F. Norris and L. P. Hammett, consulting editors) \$4.00. 1004

Contents: Table of symbols and of values of constants. Structural theory: nonelectrolytes. Structural theory: electrolytes. Equilibrium and energy of reaction. Reaction rates and mechanism: energies, free energies, and entropies of activation. The displacement reaction. Stereochemistry of the displacement reaction. The effect of structure of reactivity. Enolization and related reactions. The quantitative study of acids and bases. Carbonium-ion reactions. Carbonyl-addition reactions. Atom and radical reactions: other redox reactions.

Note: Dealing with the borderline field between physical chemistry and organic chemistry, this important book presents the results of the application of physical chemical methods to the problem of equilibrium, the rate, and the reactions of organic chemistry; that is, to the prediction of the direction and the yield of the organic chemist's procedures.

HITCHCOCK, DAVID INGERSOLL

Physical chemistry for students of biology and medicine. Third edition. Springfield, Ill.: Charles C. Thomas, 1940. 264 p. illus. 23 cm. \$3.50. 1005

Contents: Introduction. Gases. Liquids and gases. Solutions. Solutions of electrolytes; the law of mass action. Hydrogen ions, indicators, and buffers. Electromotive force and activity coefficients. Concentration cells with salt bridges; determination of pH. Colloid chemistry. Membrane equilibrium and membrane potentials. Equilibria in blood. Reaction velocity and enzyme action. Transformations of energy. Laboratory experiments. Problems. Bibliography.

Note: Attempts to present simply and clearly those fundamentals in physical chemistry which are of concern and use to students who wish to use physical chemistry in biological and medical work.

KASSEL, LOUIS S.

The kinetics of homogeneous gas reactions. New York: Reinhold Publishing Corporation, 1932. 330 p. illus. 23 cm. (American Chemical Society monograph series. No. 57) \$6.50. 1006

Contents (abridged): Introduction. Part I, Theory: Elementary reactions and their energy of activation. Statistical mechanical interlude. Bimolecular reactions. Trimolecular reactions. Unimolecular reactions. Complex reactions. Part II, Experiment: Experimental methods of reaction rate measurement. Second order reactions. Third order reactions. First order reactions. Complex reactions: Part I, Complex reactions. Part II, Branching chains. Appendixes: The radiation hypothesis. Heats of dissociation. Index.

Note: Both theoretical and experimental material on reaction kinetics are included in this highly specialized text designed for advanced students, chemists, and mathematical physicists. Numerous footnotes give additional sources of information.

LIVINGSTON, ROBERT STANLEY

Physico chemical experiments. New York: The Macmillan Company, 1939. 257 p. illus. 21 cm. \$2.25. 1007

Contents: Measurements, errors, and computations. The gaseous state. The liquid state. The solid state. The structure of atoms. Physical properties and molecular constitution. Solutions. Thermochemistry. Equilibrium. Heterogeneous equilibrium. Chemical kinetics. Electrical conductance. Equilibria involving ions. Electromotive force. Electrolysis and polarization. Photochemistry. The colloidal state. Appendix. Index.

Note: This book contains directions for 41 experiments illustrating the basic principles of physical chemistry. Frequent references are made to MacDougall's *Physical chemistry* (see Index), and to Kolthoff and Sandell's *Textbook of quantitative inorganic analysis* (see Index) but the book can be used with any good modern text on physical chemistry.

MAASS, OTTO, AND E. W. R. STEACIE

An introduction to the principles of physical chemistry. Second edition. New York: John Wiley & Sons, Inc., 1939. 395 p. illus. 23 cm. \$3.00. 1008

Contents: Introduction. The structure of matter. The gaseous state of aggregation. The transition from the gaseous to the liquid state. The liquid state of aggregation. The solid state of aggregation. Atomic structure. Energy and the structure of matter. Mixtures, solutions, and compounds. Solutions. Colloidal systems. The theory of solutions. The phase rule. Chemical equilibria. The rate of chemical reactions. Electrolytic dissociation. Applications of the ionic hypothesis. Thermochemistry. Appendixes. Index.

Note: This book is intended for a first course in physical chemistry for students who have had elementary college courses in chemistry, physics, and mathematics, and who intend to major

in chemistry, chemical engineering, medicine, or biology. The object is to develop an understanding of the basic principles of the subject in as rigorous a manner as possible without the use of calculus or higher algebra. Emphasis is placed on the need for exact application of the scientific method as opposed to the mere collection of rule-of-thumb knowledge. The second edition incorporates new material on atomic structure, phase rule, colloidal systems, and electrochemistry.

MACDOUGALL, FRANK HENRY

Physical chemistry. Revised edition. New York: The Macmillan Company, 1943. 722 p. illus. 22 cm. \$4.25. 1009

Contents: Introduction. Atomic theory. Energy and the first law of thermodynamics. The gaseous state. The liquid state. The solid state. The structure of atoms. Physical properties and molecular constitution. The second law of thermodynamics. Solutions. Solutions of electrolytes. Thermochemistry. Equilibrium. Heterogeneous equilibrium and applications of the phase rule. Chemical kinetics. Electrical conductance. Equilibria involving ions. Electromotive force. Electrolysis. Photochemistry. The colloidal state. Index of authors. Index of subjects.

Note: A rigorous text for the first college course in physical chemistry. New material in this edition includes a section on liquid crystals and glasses, and one on the theory and use of the glass electrode. The discussion of nuclear reactions and artificial radioactivity has been simplified, and a more exact derivation of the Gibbs adsorption equation has been presented. *E* has been substituted for *U* to represent the energy of a system. Values given for fundamental physical and chemical constants are up to date.

MARSH, JOHN SAMUEL

Principles of phase diagrams. With a foreword by John Johnston. New York: For the Engineering Foundation, by McGraw-Hill Book Company, Inc., 1935. 193 p. illus. 23 cm. (Alloys of Iron Research, Monograph series, F. T. Sisco, editor) \$3.00. 1010

Contents: Fundamentals: The atomistic view. Outline of basic thermodynamics. Some exact statements of basic thermodynamics. Further thermodynamic aspects and some atomistic considerations. Systems of one and two components: Systems of one component (singular systems). Systems of two components (binary systems). Systems of three components (ternary systems): Preliminary—the isobaric section. The components exhibit complete intersolubility in the liquid mode of aggregation and no evidence of stable compound formation. Stable compounds are formed. The components are not completely inter-soluble in the liquid mode of aggregation. Further remarks on the ternary isobaric section. Conclusion: Systems of more than three components. Examples of real diagrams.

Note: A generalized treatment of the principles of phase theory and a discussion of the ternary diagrams for the use of students, chemists, metallurgists, and any others confronted with a problem of heterogeneous equilibrium.

MILLARD, EARL BOWMAN

Physical chemistry for colleges; a course of instruction based upon the fundamental laws of chemistry. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1941. 600 p. illus. 23 cm. (International chemical series; L. P. Hammett, consulting editor) \$3.75. 1010a

Contents: Introduction. Properties of substances in the gaseous state. Properties of substances in the liquid state. Crystalline solids. Solutions. Solutions of ionized solutes. Thermochemistry. Equilibrium in homogeneous systems. Heterogeneous equilibrium. Kinetics of homogeneous reactions. Radiation and chemical change. Periodic law of the elements. Radioactive changes. Atomic structure. Colloids. Surface chemistry. Free energy of chemical changes. Electromotive force of cells.

Note: The present edition of this standard textbook presents the facts and theories of physical chemistry in a form not too difficult for beginners, and with special emphasis upon the quantitative correctness of these theories as shown by experimental data. The treatment of thermodynamics has been greatly expanded, with much more attention given to the second law. The chapter on thermochemistry is wholly new.

MOULTON, FOREST RAY, EDITOR

Recent advances in surface chemistry and chemical physics. Publication committee: Farrington Daniels, chairman, Neil E. Gordon, Harold C. Urey. Washington, D.C.: Published for the American Association for the Advancement of Science by the Science Press, 1939. 133 p. illus. 26 cm. (Publications of the American Association for the Advancement of Science. No. 7) \$3.00. 1011

Contents: Overturning and anchoring of monolayers, by I. Langmuir. Surface chemistry fundamentals for biology, by W. D. Harkins. Arrangement of molecules in unimolecular and multimolecular layers, by L. H. Germer. Mono- and polymolecular films of physiologically active substances, by H. Sobotka. Influence of hydrogen ion concentration on formation of insulin and protamine films, by G. H. A. Clowes. Separation of isotopes, by H. C. Urey. Electron diffraction investigations of structure of gas molecules, by J. Y. Beach. Dipole moments, by C. P. Smyth. Chemical thermodynamics, by M. Randall. Band spectroscopy of polyatomic molecules, by H. Spöner. The Raman effect, by J. H. Hibben. Rates of chemical reactions, by A. Sherman.

Note: The papers of this symposium are divided into two groups, those relating to the application of surface chemistry in biology and those outlining recent advances in chemical physics. At the time of publication the first group of papers dealt with a field which had only recently been explored. They report on investigations into the properties of unilayer and multilayer films with a view to explaining the processes of exchange of materials through the surface of living cells. Section two discusses the structures and properties of elements and compounds, the separation of the isotopes of the elements, and the theories of chemical thermodynamics. The number of references cited at the end of each paper ranges from three or four to more than forty.

MOULTON, FOREST RAY, EDITOR

Surface chemistry. Washington, D.C.: American Association for the Advancement of Science, 1943. 160 p. illus. 26 cm. (Publication of the American Association for the Advancement of Science. No. 21) Paper, \$2.75; cloth, \$3.25. 1012

Contents: Interactions of biologically significant substances in surface films, by G. H. A. Clowes. Rates of evaporation of water through compressed monolayers on water, by Irving Langmuir and V. J. Schaefer. Intermolecular forces and two-dimensional systems, by William D. Harkins. Some thermodynamic properties and rate processes at surfaces, by H. Eyring, J. Walter and A. E. Stearn. Contribution to the surface tension of organic compounds in relation to their polarity, by E. A. Hauser and A. J. Grossman. Problem of elasticity of rubber and rubberlike materials, by E. Guth. Some aspects of the properties of solid surfaces, by C. E. Boyd. Intermolecular attraction between macromolecules, by F. London. Intrinsic viscosities and diffusion constants of protein molecules, by H. B. Bull and J. A. Cooper. Phase transitions in monolayers due to hindered molecular rotation, by J. G. Kirkwood.

Note: These papers are based on a symposium held in September, 1941 in connection with the celebration of the fiftieth anniversary of the founding of the University of Chicago. While the material presented is of a theoretical nature it does have practical application in such problems as lubrication, the adhesion of protective coatings to surfaces, and the dispersal of pigments throughout the media which carry them. Each paper includes a bibliography making a total of approximately 200 references.

NOYES, ARTHUR AMOS, AND MILES S. SHERRILL

A course of study in chemical principles. Second edition, rewritten. New York: The Macmillan Company, 1938. 554 p. illus. 22 cm. \$5.00. 1013

Contents: Introduction. Chemical substances in general. General principles relating to the energy of substances. The properties of gases and the molecular and kinetic theories. The properties of solutions and the molecular theory. The electrical

properties of solutions and the ionic theory. The rate of chemical changes. The equilibrium of chemical change. The equilibrium of chemical systems in relation to the phases present. Systematization of free energy values. Index of authors. Index of subjects.

Note: The purpose of the text is to offer students who have had the usual preliminary course in chemistry, physics, and mathematics, and are preparing for professional careers in chemistry or the allied sciences, a more intensive training in the principles and applications of physical chemistry than is possible with the descriptive type of physical chemistry text. This edition has been rewritten and considerably expanded to provide detailed discussion of modern theory.

PAULING, LINUS CARL

The nature of the chemical bond, and the structure of molecules and crystals; an introduction to modern structural chemistry. Second edition. Ithaca, N.Y.: Cornell University Press, 1940. 450 p. illus. 23 cm. (The George Fisher Baker non-resident lectureship in chemistry at Cornell University. Vol. 18) \$4.50. 1014

Contents: Resonance and the chemical bond. The partial ionic character of covalent bonds and the relative electronegativity of atoms. The directed covalent bond, bond strengths and bond angles. The magnetic criterion for bond type. The resonance of molecules among several valence-bond structures. Interatomic distances and their relation to the structure of molecules and crystals. Types of resonance in molecules. The structure of molecules and complex ions involving bonds with partial double-bond character. The one-electron bond and the three-electron bond. The hydrogen bond. The sizes of ions and the structure of ionic crystals. The metallic bond. A summarizing discussion of resonance and its significance for chemistry. Index of names. Index of subjects.

Note: A study of the theory of valence and chemical bond, intended for advanced or postgraduate chemistry students, with a correlated study of the structure of molecules and crystals. The author considers three general extreme types of chemical bonds: electrostatic, covalent, and metallic. Included in the category are not only the directed valence bond of the organic chemist but also the bonds such as those between ions in the sodium chloride crystal and the mesh bonds of other inorganic substances. The discussion on structural chemistry is presented without the use of the mathematics of quantum mechanics. The second edition contains minor changes and about five pages of new material.

PEASE, ROBERT NORTON

Equilibrium and kinetics of gas reactions; an introduction to the quantum-statistical treatment of chemical processes. Princeton: Princeton University Press, 1942. 236 p. illus. 23 cm. \$3.75. 1014a

Contents: Thermodynamics and equilibrium. The Nernst heat theorem and the third law of thermodynamics. The quantum-statistical calculation of free energy. The quantum-statistical treatment of reaction rate. Reactions of simple order. Quasi-unimolecular reactions. Chain reactions. Gaseous oxidation reactions. Branching chains. Surface-catalyzed reactions. Index.

Note: Designed as an elementary introduction to the application of statistical methods to chemical reactions. Procedures are outlined by which the direction and yield, and the rate of such reactions may be estimated without recourse to direct experiment. While the theoretical background is given consideration, more than half of the book is devoted to an examination of the data on particular gas reactions. Both "cracking" and combustion of petroleum hydrocarbons have been given special emphasis. For instructors, graduate students, and men in the industrial field.

PRUTTON, CARL FREDERIC, AND SAMUEL H. MARON

Fundamental principles of physical chemistry. New York: The Macmillan Company, 1944. 780 p. illus. 22 cm. \$4.50. 1014b

Contents: Preface. Introduction. Gases. Thermodynamics. Liquids. The solid state. Solutions. Colligative properties of solutions of nonelectrolytes. Solutions of electrolytes. Surface phenomena and colloids. Thermochemistry. Entropy. The free

energy. Homogeneous chemical equilibrium. Heterogeneous equilibrium. Electrolytic transference and conductance. Ionic equilibria. The electromotive force of cells. Electrolysis and polarization. Kinetics of homogeneous reactions. Kinetics of heterogeneous gas reactions. Atomic structure and radioactivity. Molecular structure. Physical properties and the structure of molecules. Index.

Note: A textbook designed for students of chemistry and chemical engineering. The presentation is advanced, with use made of calculus and thermodynamics. References are given at the end of each chapter.

RICE, OSCAR KNEFLER

Electronic structure and chemical binding with special reference to inorganic chemistry. New York: McGraw-Hill Book Company, Inc., 1940. 511 p. illus. 23 cm. \$5.00. 1015

Contents: Development of the atomic theory in chemistry. The constitution of matter. Wave and corpuscular properties of radiation and matter. Elementary quantum theory. The hydrogen atom. Electron spin. Angular momentum, and magnetic moment. Many electron atoms and the periodic system. Some properties of the elements and their connection with electron structure. Molecular potential energy curves and molecular motion. The hydrogen molecule. Theories of valence. Transition from covalent to ionic binding in simple gaseous compounds. The nature of the solid state. Ionic crystals. Further properties of covalent bonds. Complex compounds and complex crystals, including atomic crystals. Molecular crystals. Metallic crystals. The structure of water, hydrates, and aqueous solutions.

Note: Lays a foundation in atomic physics of the depth and scope most likely to be useful for chemists in general and capable of being used as an introduction for those who wish later to specialize more particularly in the field. On the basis of this foundation, the book classifies the chemical compounds and discusses problems in chemistry dealing especially with the nature of chemical binding.

RODEBUSH, WORTH HUFF, AND ESTHER KITTREDGE RODEBUSH

An introductory course in physical chemistry. Second edition. New York: D. Van Nostrand Company, Inc., 1938. 468 p. illus. 22 cm. \$3.75. 1017

Contents: The atom and the molecule. The kinetic theory of matter. Gases. The kinetic theory of matter. Liquids. The crystalline state of matter. Laws of chemical equilibrium. Equilibrium between different phases of a pure substance. Solutions. Surface chemistry and solutions. Conduction. The second and third laws of thermodynamics. Equilibria involving ions in solution. Electrode potentials. Physical properties and molecular constitution. The rate and mechanism of chemical reaction. The atom. The molecule. The activation of atoms and molecules.

Note: This college textbook emphasizes the fundamental principles of physical chemistry, and their derivation and methods of application. The discussion of the applications themselves has been held to a minimum. In this way a comprehensive coverage of the basic laws and fundamental methods has been furnished in a book of less than 500 pages.

SLATER, JOHN CLARKE

Introduction to chemical physics. New York: McGraw-Hill Book Company, Inc., 1939. 521 p. illus. 23 cm. (International series in physics; F. K. Richtmyer, consulting editor) \$5.00. 1019

Contents (abridged): Part I, Thermodynamics, statistical mechanics, and kinetic theory: Heat as a mode of motion. Statistical mechanics. The Maxwell-Boltzmann distribution law. The Fermi-Dirac and Einstein-Bose statistics. The kinetic method and the approach to thermal equilibrium. Part II, Gases, liquids, and solids: Thermodynamic and statistical treatment of the perfect gas and mixtures of gases. The molecular structure and specific heat of polyatomic gases. Chemical equilibrium in gases. The equilibrium of solids, liquids, and gases. The equation of state of solids. Debye's theory of specific heats. Phase equilibrium in binary systems. Phase changes of the second order. Part III, Atoms, molecules, and the structure of matter: Radiation and matter. Ionization and excitation of atoms. Interatomic and intermolecular forces. The homopolar bond and molecular compounds. Organic molecules and their crystals. Homopolar bonds

in the silicates. Thermionic emission and the volta effect. The electronic structure of metals.

Note: In this unified presentation of material common to the fields of physics and chemistry, the author offers a treatment of thermodynamics and statistical mechanics, including their application to solids, liquids, and gases. There is also a discussion of atomic structure and the resulting interatomic and intermolecular forces, with application to the different types of chemical substances, and to their thermal and mechanical properties.

TAYLOR, HUGH STOTT, AND H. AUSTIN TAYLOR

Elementary physical chemistry. Third edition. New York: D. Van Nostrand Company, Inc., 1942. 551 p. illus. 22 cm. \$3.75. 1020

Contents: The atomic concept of matter. Energy in chemical systems. The gaseous state, I: The energy of motion and of intermolecular attraction. The atomic concept of energy—energy quanta. The gaseous state, II: The liquid state. The crystalline state. The direction of chemical change. Solutions. Chemical equilibrium. Phase equilibria. Electrical conductance and ionization. Ionic equilibria: Weak electrolytes. Strong electrolytes. Chemical kinetics. Photochemistry. Colloid chemistry. Appendixes. Index.

Note: A textbook for use in introductory courses in physical chemistry, adapted from Hugh S. Taylor, editor, *Treatise on physical chemistry*, the third edition of which is described below. The treatment presupposes a knowledge of differential and integral calculus as well as the fundamentals of general physics and chemistry. The concepts of collision frequency and of varying velocities of gas molecules are emphasized from the standpoint of their importance in chemical reactions. The thermodynamic treatment of solutions is introduced, based on the principles of ionization with which the student is assumed to be already familiar. The third edition contains a larger treatment of the atomic concept of matter and the statistical basis of the second law of thermodynamics, plus new material on the solid state, phase equilibria, and ionic equilibria.

TAYLOR, HUGH STOTT, AND SAMUEL GLASTONE, EDITORS

A treatise on physical chemistry; a co-operative effort by a group of physical chemists. Third edition, in five volumes. Vol. I. New York: D. Van Nostrand Company, Inc., 1942. illus. 23 cm. \$7.50. 1021

Contents: The atomic concept of matter, by Hugh S. Taylor. Quantum theory of atomic spectra and atomic structure, by Saul Dushman. The first and second laws of thermodynamics, by Hugh S. Taylor. The third law of thermodynamics and statistical mechanics, by John G. Aston. Appendix: Values of physical constants. Index.

Note: This work is planned as a comprehensive presentation of the present status of physical chemistry. It is designed to cover not only fundamental principles, but to indicate their applications to problems that confront the modern chemist whether he is working in research or in industry. A detailed historical background is included so that the account of a topic proceeds from the older knowledge to recent developments. The treatment is for advanced students and professional chemists. Volumes II to V of this edition are still in preparation. The second edition of the work was issued in two volumes in 1931 by the same publisher.

WEBB, THOMAS JEFFERSON

Elementary principles in physical chemistry; with special reference to the state of equilibrium in a chemical reaction and to the rate of attainment of the state of equilibrium. New York: D. Appleton-Century Company, Incorporated, 1936. 344 p. illus. 23 cm. (The Century chemistry series. James Kendall, editor) \$4.00. 1022

Contents: Introduction. The kinetic theory. The first law of thermodynamics. Chemical equilibrium. The second law of thermodynamics. Equilibrium between phases. The thermodynamic properties of strong electrolytes. The rates of chemical reactions. The quantum theory.

Note: The content of this textbook for introductory college courses in physical chemistry revolves around the two fundamental problems of theoretical chemistry: the state of equilibrium in a chemical reaction, and the rate of attainment of this state. The emphasis throughout the book is placed on chemical reactions themselves and on the macroscopic and molecular properties of matter which may be regarded as primary data needed for the solution of the two fundamental problems.

WEST, EDWARD STAUNTON

Physical chemistry for students of biochemistry and medicine. New York: The Macmillan Company, 1942. 368 p. illus. 24 cm. \$4.00. 1023

Contents: Introduction. The structure of matter and some fundamental chemical principles. Gases and solutions. Osmotic pressure. Electrolytic dissociation and the mass law. Acids, bases, and buffers. The determination of pH. The colloidal state and membrane phenomena. Oxidation and reduction. The velocity of reactions. Appendix: Logarithms. Index of subjects. Table of atomic weights.

Note: The primary aim of this book is to present the selected phases of physical chemistry recognized as basic to an understanding of biological phenomena. It is directed at students of pre-medicine, medicine, and biology, with special emphasis on the necessary mathematics so that the student may understand and apply his knowledge rather than memorize equations. Research workers in biology and medicine will find it useful for review and reference. It is sufficiently broad in scope to meet the needs of students of zoology, general physiology, and general chemistry. It includes a comprehensive tabulation of chemical literature.

Catalysis

ADKINS, HOMER BURTON

Reactions of hydrogen with organic compounds over copper-chromium oxide and nickel catalysts. Madison, Wis.: The University of Wisconsin Press, 1937. 178 p. illus. 24 cm. \$3.00. 1024

Contents: Catalysts, hydrogen pressure, and solvents. Apparatus and procedure. Reactions with hydrogen. Selective hydrogenation and hydrogenolysis. Literature cited. Index.

Note: This volume correlates and summarizes recent work in the development of high-pressure hydrogenation as a tool in synthetic organic chemistry. The book is based upon more than forty papers from the author's laboratory which have been concerned with the reactions of hydrogen at 100-400 atmospheres and 250°-260° over nickel and copper-chromium oxide with quantities of from 1 g. to 1 kg. of typical organic compounds. Particular attention is given to the preparation of alcohols and amines through hydrogenation and hydrogenolysis.

BERKMAN, SOPHIA, AND OTHERS

Catalysis, inorganic and organic, by Sophia Berkman, Jacque C. Morrell and Gustav Egloff. New York: Reinhold Publishing Corporation, 1940. 1130 p. illus. 23 cm. \$18.00. 1025

Contents: The phenomenon of catalysis. Adsorption and catalysis. Heterogeneous and homogeneous catalysis. The activity of the catalyst. Inhibitors in catalysis. Promoters and poisons in catalysis. Carriers in heterogeneous catalysis. Catalytic reactions. Physical conditions in catalytic reactions. Classification of catalysts with respect to type of reaction (tables). Catalysis in the petroleum industry. Indexes.

Note: An exhaustive and thoroughly documented treatise on the theory and practical application of catalysts. The physical, chemical, and thermodynamic aspects of the subject are discussed at length, and a collection of detailed tables occupying 350 pages is devoted to classification and description of thousands of specific reactions. Each chapter contains an extensive bibliography.

NATIONAL RESEARCH COUNCIL. COMMITTEE ON CATALYSIS

Twelfth report. New York: John Wiley and Sons, Inc., 1940. 388 p. illus. 23 cm. \$5.00. 1026

Contents: Recent developments in the theory of chemical bonds and reaction rates, by George E. Kimball. Free radicals and surface reactions, by F. O. Rice. Activated adsorption, by Hugh S. Taylor. Active centers, by Hugh S. Taylor. Physical adsorption in the study of the catalyst surface, by P. H. Emmett. The role of ions in surface catalysis, by P. H. Emmett and Edward Teller. Contact catalysis in the hydrogenation of coal, coal tar and oil, by H. H. Storch. Catalytic dehydrogenation of oxo-gano compounds, by E. C. Williams and M. de Simo. Dehydrogenation of hydrocarbons, by E. C. Williams and M. de Simo. Hydrogenation of hydrocarbons, by E. C. Williams and O. Beeck. Hydrogenation of the oxides of carbon, by Wilbur A. Lazier. Progress in the catalytic hydrogenation of fats and oils, by Wilbur A. Lazier. The synthesis of ammonia, by P. H. Emmett. Catalytic oxidation, by L. F. Marek. Catalysis in polymerization, by Robert E. Burk. Retardation of chemical reactions, by E. C. Williams and M. W. Tamele. The hydration, dehydration, and hydrolysis of organic compounds, by B. W. Howk and Wilbur A. Lazier. Halogenation and hydrohalogenation reactions by catalytic processes, by E. C. Williams and W. E. Vaughan. Halide catalysts, by Robert E. Burk. Biochemical catalysis, by Dean Burk. Reviews of recent books on catalysis. Index.

Note: A critical summary of the state of progress of catalysis as of 1939, based on a survey of the world literature of the field by a committee composed of academic and industrial specialists. A special section on the growth of definite knowledge in biochemical catalysis is also included, and there are several papers stressing theoretical considerations. The book contains detailed reviews of 15 American and foreign books on catalysis published between 1936 and 1939, and there are extensive bibliographies after each of the papers.

SCHWAB, GEORG MARIA

Catalysis from the standpoint of chemical kinetics. Translated from the first German edition with additions from the recent literature by the author, by Hugh S. Taylor and R. Spence. New York: D. Van Nostrand Company, Inc., 1937. 357 p. illus. 23 cm. \$4.25. 1027

Contents: Historical introduction. General introduction. Catalysis of homogeneous gas reactions. Homogeneous catalysis in solution. Negative catalysis in solution. Heterogeneous catalysis—general introduction. Adsorption. The kinetics of heterogeneous catalysis. Activation and the mechanisms of catalysis. Selective catalysis and poisons. The state of a catalyst. Mixed catalysts, supported catalysts and promoter action. Heterogeneous chain reactions. Catalysis in solid systems. Micro-heterogeneous and bio-catalysis. Index.

Note: This book gives the chemist a logically integrated survey of the subject of catalysis. By regarding all reactions from the point of view of chemical kinetics, the authors have prepared a coordinated account of the fundamentals of catalysis, in which the various theories and principles are shown in direct relation to the experimental data from which they have been developed. An extensive bibliography of the periodical literature is included.

Solubility

HILDEBRAND, JOEL HENRY

Solubility of non-electrolytes. Second edition. New York: Reinhold Publishing Corporation, 1936. 203 p. illus. 23 cm. (American Chemical Society monograph series. No. 17) \$4.50. 1030

Contents (abridged): Introductory. The ideal solution. Deviations from Raoult's law. Polarity. Forces between non-polar molecules. Solvation and association. Vapor pressure of liquid mixtures. Solubilities of gases. Solubilities of liquids in liquids. Solubilities of solid non-electrolytes. Metallic solutions. Partition of solutes between immiscible liquids. Solubility and various related phenomena. Appendix. Author index. Subject index.

Note: The theory of non-ionic solutions is given in outline. The material is advanced and the treatment is technical. The first edition included material on electrolytes which has been omitted in the present edition. A list of papers prepared by the author and co-workers pertaining to solubility referred to in the text is included.

SEIDELL, ATHERTON

Solubilities of inorganic and metal organic compounds; a compilation of quantitative solubility data from the periodical literature. Third edition. New York: D. Van Nostrand Company, Inc., 1941. 2 v. 24 cm. Vol. I, \$12.00; Vol. II, \$10.00. 1031

Contents: Volume I, Solubilities of inorganic and metal organic compounds. Volume II, Solubilities of organic compounds.

Note: These books present the published data from the chemical literature on the solubilities of chemical compounds. The tables given include the solubilities of the various substances in water, alcohol, ether and other single solvents, and also the solubilities in mixtures of solvents, in solutions of salts, and in various other multi-component systems. In each case, these books give all the pertinent information from the original reference, including the conditions under which the solubilities were determined, such as temperatures, partial pressures (of gases) and other variables; as well as the names of the investigators and the date of the report. For convenient reference, these books are arranged in order of the chemical structure of the solutes, and are fully indexed. The previous edition consisted of a 756-page volume published in 1919 and a supplementary volume of 500 pages published in 1928. The incorporation of new material in this edition has resulted in a two-volume work of more than 2,200 pages.

Colloid Chemistry

ALEXANDER, JEROME

Colloid chemistry; principles and applications. Fourth edition. New York: D. Van Nostrand Company, Inc., 1937. 505 p. illus. 23 cm. \$4.50. 1032

Contents: Historical and introductory. Material units and the forces dominating them. A simple principle underlying the colloidal state—forces affecting colloids. Classification of colloids. Consequences of subdivision. Optical properties of colloids—the ultramicroscope. Determination of the size and mass of colloidal particles. General properties of colloids. Practical applications of colloid-chemical principles. Proteins and carbohydrates. Biology and medicine. Genetics. Hormones and vitamins. Physiology and pathology. Digestion. Bioelectricity. Experimental suggestions or laboratory manual. Bibliography. Glossary. Author index. Subject index.

Note: This book surveys the field of colloid chemistry and its related subjects, referring particularly to the applications of colloid chemistry in science, industry, medicine, and daily life. The style is non-technical.

ALEXANDER, JEROME, EDITOR

Colloid chemistry, theoretical and applied, by selected international contributors, collected and edited by Jerome Alexander. New York: Reinhold Publishing Corporation, 1926-44. 5 v. illus. 23 cm. Vol. I, \$14.50; Vol. II, \$15.50; Vol. III, \$10.50; Vol. IV, \$11.50; Vol. V, \$20.00. 1032a

Contents (abridged): Volume I: Theory and methods (sixty papers). Volume II: Biology and medicine (fifty-seven papers). Volume III: First series of papers on technological applications (forty-two papers). Volume IV: Second series of papers on technical applications (forty-two papers). Volume V: Theory and methods, biology and medicine (sixty papers).

Note: A collection of 261 technical papers by various international specialists on all phases of the subject of colloid chemistry. As far as possible the contributions are arranged into more or less coherent groups, so that while each paper is an entity in itself, the interrelations between them cover practically the entire field. There are diverse and even conflicting views presented, and in many cases the editor takes occasion in footnotes or in separate paragraphs to indicate his own or other dissenting opinions. The wide variety of topics considered and the different modes of approach to the same or interrelated subjects are intended to give the practicing chemist and specialist a broader and more integrated view of natural phenomena than is obtain-

able from treatises of limited scope. The volumes contain a large number of photographs, drawings, charts, and tables, and there are generally extensive bibliographies after each paper. Subject and author indexes are provided in each volume.

BANCROFT, WILDER DWIGHT

Applied colloid chemistry, general theory. Third edition. New York: McGraw-Hill Book Company, Inc., 1932. 544 p. illus. 21 cm. (International chemical series) \$4.00. 1033

Contents: Adsorption of gas or vapor by solid. Chemical reactions. Adsorption of vapor by liquid and of liquid and solid by solid and liquid. Adsorption from solution. Surface tension—Brownian movement. Coalescence. Preparation of colloidal solutions. Properties of colloidal solutions. Electrical properties of colloids. Stability of colloidal solutions. Gelatinous precipitates and jellies. Emulsions and foams. Non-aqueous colloidal solutions. Fog. Smoke. Gases and solids. Thickness of surface films. Literature references. Author index. Subject index.

Note: A discussion of the basic theory of colloid chemistry, with emphasis on adsorption and surface tension and the preparation and properties of colloidal solutions. This third edition contains revisions in some sections, reflecting advances in knowledge between the second edition in 1926 and the publication of this one.

FISCHER, MARTIN HENRY, AND MARIAN O. HOOKER

The lyophilic colloids (their theory and practice). Springfield, Ill.: Charles C. Thomas, 1933. 246 p. illus. 24 cm. \$4.50. 1033a

Contents: Part I, The general nature of the lyophilic colloid: Historical remarks. A general theory of the lyophilic colloid. Some critical remarks. Some characteristics of mutually soluble systems. The changes in electrical resistance registered by gelling lyophilic colloids. On the theory of solvation in colloids. Further differences between solutions of x in a solvent and those of the solvent in x . On the cooling curves of gelling colloids. Application of the theory of the lyophilic colloid to some specific instances. Part II, Chemical applications: The place of the lyophilic colloid system in chemistry. On the greases. On the "livering" of paints. Part III, Biological applications: Criticism of the osmotic concept of the cell. The colloid-chemical theory of water absorption. Edema as a problem in colloid chemistry. On the nature of the relation between the proteins, the electrolytes and the water of the cell. On "acidosis" and "alkalosis." Evidence that protoplasm is not a dilute solution of x in water. Proof that protoplasm is a solution of water in x . On the so-called "permeability" of living cells. Synthesis in living matter. On pharmaceutical preparation. Bibliography. Author index. Subject index.

Note: This book summarizes the work of the authors. Their theory of the lyophilic colloids is restated and new experimental evidence in support of it is introduced. The observations on mutually soluble systems find direct application to problems in pure and applied chemistry, biology, and medicine.

HARTMAN, ROBERT JAMES

Colloid chemistry. Boston: Houghton Mifflin Company, 1939. 556 p. illus. 24 cm. \$5.25. 1034

Contents: Introduction. Part I, Surface chemistry: Subdivision of mass. General characteristics of adsorption. Quantitative aspects of adsorption. Theories of adsorption. Some applications and occurrences of adsorption. Contact catalysis. Part II, Lyophobic colloidal systems: Colloidal systems. Preparation of lyophobic colloidal systems. Physical properties of lyophobic colloidal systems. Lyophobic colloidal systems and light phenomena. Electrical properties of lyophobic colloidal systems. The stability of lyophobic colloidal systems. Dialysis and ultrafiltration. Aerosols. Emulsions and foams. Unusual lyophobic colloidal systems. Part III, Lyophilic colloidal systems: Chemical and physical properties of lyophilic colloidal systems. Gels. Swelling-shrinking and diffusion. Part IV, The biocolloids and some colloidal aspects of organisms: Some chemical and colloidal aspects of the biocolloids. Biocolloidal constituents of foods. The biocatalysts; distribution of materials as affected by the biocolloids. Colloidal factors influencing growth and movements of organisms. Some colloidal aspects of blood and the nervous system. Some colloidal medicines. List of reference books. Name index. Subject index.

Note: This text covers comprehensively for the college undergraduate the field of colloid chemistry and its applications.

HAUSER, ERNST ALFRED

Colloidal phenomena; an introduction to the science of colloids. New York: McGraw-Hill Book Company, Inc., 1939. 294 p. illus. 23 cm. \$3.00. 1035

Contents: The science of colloids—historical development. The disperse state of matter—the colloidal state, a generality. Terminology and definitions. Diffuse systems. Form and shape of matter. The peculiarity of the colloidal state. The production of colloidal systems. Kinetics of colloidal particles. Electrical properties of colloidal systems. Surface phenomena. Protection and sensitization of colloidal systems. Dispersion (peptization). Coagulation and dissolution. The influence of particle shape—the optics of colloidal systems. Aggregates bonded by primary forces. Aggregates bonded by secondary forces. Colloidal aggregates.

Note: Presents as simply as possible the modern viewpoints in colloidal science and shows where and why they must differ from those applied in physicochemistry. Bibliographies and bibliographical footnotes are included.

HAUSER, ERNST ALFRED, AND J. EDWARD LYNN

Experiments in colloid chemistry. New York: McGraw-Hill Book Company, Inc., 1940. 178 p. illus. 23 cm. \$2.00. 1036

Contents: Historical experiments. Preparation of colloidal systems. Dialysis. Electrokinetics. Surface phenomena. Coagulation and dissolution. Protection and sensitization. Optics of colloids. Gels and gelation. Emulsions and emulsification. Viscosity. Particle-size determination. Rubber latex and crude rubber as ideal systems for various demonstrations. Miscellaneous.

Note: The purpose of this laboratory manual is to present a varied collection of experiments covering the most important phenomena in colloid chemistry. Each chapter is preceded by a brief introduction containing basic information. The experiments dealing with rubber latex are noteworthy. An effort has been made throughout the book to select the demonstrations in accordance with average college equipment and budget.

HOLMES, HARRY NICHOLLS

Laboratory manual of colloid chemistry. Third edition, rewritten and reset. New York: John Wiley & Sons, Inc., 1934. 229 p. illus. 24 cm. \$3.25. 1037

Contents: Particle size. Dialysis, diffusion, and ultrafiltration. Condensation methods of preparation. Dispersion methods of preparation. Electrical properties. Coagulation or flocculation. Protective colloids. Surface tension—interfacial tension. Films and froths. Emulsions. Solvated colloids or gels. Soaps. The colloid chemistry of proteins. Reactions in gels. Viscous and plastic flow. Non-aqueous colloidal systems. Adsorption from liquids. Adsorption from gases. Catalysis and colloid chemistry. Clays, soils, and dusts. Bibliography. Indexes.

Note: This manual has been prepared especially for the graduate chemist who wishes to follow a self-study course in colloid chemistry in a private laboratory. To this end a large amount of text material is included in the present volume and there are a considerable number of bibliographic references in footnotes and at the end of each chapter, plus an additional list of 47 titles at the end of the book. There are 240 experiments described in detail, together with interpretative comment.

KRAEMER, ELMER OTTO, EDITOR

Advances in colloid science, edited by Elmer O. Kraemer, in collaboration with Floyd E. Bartell and S. S. Kistler. Volume I. New York: Interscience Publishers, Inc., 1942. 446 p. illus. 23 cm. \$5.50. 1038

Contents: The measurement of the surface areas of finely divided or porous solids by low temperature adsorption isotherms, by P. H. Emmett. Frictional and thermodynamic properties of large molecules, by Henry Eyring and R. E. Powell. The permeability method for determining specific surface of fibers and powders, by K. L. Hertel and R. R. Sullivan. Solubilization and other factors in detergent action, by James W. McBain. Recent results in starch chemistry, by Kurt H. Meyer. Synthetic ion-exchange resins, by Robert J. Myers. A new method of adsorp-

tion analysis and some of its applications, by Arne Tiselius. The creaming of rubber latex, by G. E. Van Gils and G. M. Kraay. The constitution of inorganic gels, by Harry B. Weiser and W. O. Milligan. Particle size and shape by streaming birefringence, by John T. Edsall. Exceptions to Gibbs' theorem relating adsorption and surface tension of solutions, by Ernst A. Hauser. Application of electron microscope, by Thomas F. Anderson.

Note: Represents the first of a projected series of volumes intended to provide a medium in which advances in colloid chemistry may be presented in a comprehensive and unified fashion.

THOMAS, ARTHUR WALDORF SPITTELL

Colloid chemistry. New York: McGraw-Hill Book Company, Inc., 1934. 512 p. illus. 21 cm. (International chemical series, J. F. Norris, consulting editor) \$4.00. 1039

Contents: Introduction. Clouds and smokes. Optics—Brownian movement. Liquid dispersed systems. Dialysis and ultrafiltration. Preparation of colloidal solutions. The nature of micelles. Precipitation by electrolytes—hydrophobic and intermediate dispersions. Electrokinetics. Surface phenomena—gas-liquid and liquid-liquid interfaces—wetting. Sorption. Proteins. Carbohydrate colloids. Soap solutions. Foams. Emulsions. Mutual reactions. Gels and jellies.

Note: A clear treatment which aims, as far as possible, to account for colloid interactions on a simple crystalloid basis. The text covers the biocolloids as well as inorganic dispersions. Everyday techniques are carefully reviewed; chapters on soaps and carbohydrate colloids are included; and the chapters on proteins and emulsions are extensive.

WEISER, HARRY BOYER

Colloid chemistry (a textbook). New York: John Wiley & Sons, Inc., 1939. 428 p. illus. 23 cm. \$4.00. 1040

Contents: The colloidal state. Adsorption: Surface tension and adsorption. Adsorption by solid i: general characteristics of adsorption of gas or vapor. Adsorption by solid ii: mechanism of the adsorption of gas or vapor. Adsorption by solid iii: adsorption of liquid by solid—wetting. Adsorption by solid iv: adsorption from solution of non-electrolytes and weak electrolytes. Adsorption by solid v: adsorption from solution of strong electrolytes. Adsorption of liquid by liquid. Spreading of liquid on liquid. Molecular orientation. Sols: Formation of sols i: condensation methods. Formation of sols ii: dispersion methods. Purification of sols; permeability of membranes; dialysis; ultrafiltration. The optical properties of sols. The kinetic properties of sols. The constitution of sols. The electrical double layer. Electrokinetic and electrochemical properties of sols. Stability of hydrophobic sols i: coagulation by electrolytes. Stability of sols ii: mutual coagulation and protection. Stability of hydrophilic sols. Gels. Emulsions and foams. Aerosols and solid sols. Applications of colloid chemical principles to contact catalysis, dyeing, and clay. Index.

Note: This book gives the foundations of colloidal chemistry and the role that the classical experiments have played in the development of modern theories. It formulates and correlates the theories underlying colloid chemical behavior, and illustrates the widely diversified applications of the principles of colloid chemistry in such fields as the industrial arts, agriculture and biology.

WEISER, HARRY BOYER

Inorganic colloid chemistry. New York: John Wiley & Sons, Inc., 1933-38. 3 v. illus. 23 cm. Vol. I, \$4.50; Vol. II, \$4.75; Vol. III, \$6.00. 1041

Contents (abridged): Volume I, The colloidal elements: The formation of colloidal elements. The metallic elements: colloidal gold, colloidal silver, colloidal copper and mercury, colloidal non-noble metals; adsorption of gases by metals; colloidal metals as contact catalysts. The non-metallic elements: colloidal carbon, colloidal sulfur, colloidal selenium and tellurium, colloidal iodine. Index. Volume II, The hydrous oxides and hydroxides: Hydrous oxide sols and gels. The hydrous oxides of iron, aluminum, gallium, indium, and thallium. Hydrous oxides and hydroxides of copper, cobalt, nickel, silver and gold. The hydrous oxides and hydroxides of beryllium, magnesium, zinc, calcium, and mercury. The hydrous oxides of tin and lead. The hydrous oxides and hydrates of molybdenum, tungsten and uranium. The hydrous oxides of manganese. The hydrous oxides of the platinum family. Mordants. Color lakes of the hydrous oxides. Mineral tanning. Coagulants in water purification. Index. Volume III, The colloidal salts: The colloidal sulfates and related compounds—col-

loidal barium sulfate; colloidal sulfates of lead and strontium; colloidal calcium sulfate, plaster of Paris; colloidal carbonates, phosphates, chromates, and arsenates. The colloidal halides of silver, lead, mercury. The silver halides in photography. The colloidal sulfides: colloidal arsenic trisulfide, colloidal arsenic trisulfide: stability of sol; the colloidal sulfides of antimony, bismuth, tin and lead; colloidal sulfides of copper, silver, gold and the platinum family; the colloidal sulfides of zinc, cadmium, mercury; lithopone and other sulfide pigments. The colloidal ferrocyanides and ferricyanides: colloidal ferrocyanides and ferricyanides, general properties; colloidal copper ferrocyanide, the sol, the membranes, prussian blue and related products. The colloidal silicates: silicate sols and gels, thixotropy, base-exchange in silicate gels, inorganic soil colloids, cement. Index.

Note: A critical survey of the colloidal behavior of the elements and their inorganic compounds with particular reference to the role they have played in the development of the theories and applications of colloid science. Intended as a reference for practicing chemists as well as a textbook for the student of inorganic chemistry. Covers the method of formation, properties, and applications of the elements in the colloid state, the oxides, and the colloidal inorganic salts, and indicates their industrial significance. Numerous bibliographic references appear in the text.

Thermochemistry

BICHOWSKY, FRANCIS RUSSELL, AND FREDERICK D. ROSSINI

The thermochemistry of the chemical substances. The assembly of a self consistent table of "best" values for the heats of formation of the chemical substances (except carbon compounds containing more than two carbon atoms), including heats of transition, fusion, and vaporization. New York: Reinhold Publishing Corporation, 1936. 460 p. 23 cm. \$7.00. 1042

Note: A revision and expansion of material which appeared originally in the section on thermochemistry of the *International Critical Tables*. The authors have attempted to bring together published works relating to the heats of formation of all chemical substances, with the exception of carbon compounds containing more than two carbon atoms. In section one the values of heats of formation for the various chemical substances are arranged in tabular form. In section two the published thermochemical data concerning reactions which can be utilized to compute the heat of formation are cited. Section three contains a list of 3,730 references bearing on thermochemistry which are discussed in section two, and includes all publications covered by *Chemical abstracts* up to January, 1931. There is an index to the elements.

BURK, ROBERT EMMETT, AND OLIVER GRUMMITT, EDITORS

The chemical background for engine research. New York: Interscience Publishers, Inc., 1943. 297 p. illus. 23 cm. (Frontiers in chemistry. Vol. II) \$3.50. 1043

Contents: Survey of combustion research, by Ernest F. Fick. Chemical thermodynamics of hydrocarbons, by Frederick D. Rossini. Synthetic methods for hydrocarbons, by Frank C. Whitmore. Kinetics of flame and combustion, by Guenther von Elbe. Experimental side of combustion research in engines, by Bernard Lewis. Some physicochemical aspects of lubrication, by O. Beeck. Index.

Note: A collection of six lectures, by experts in the field of combustion and engine research, originally presented at Western Reserve University. The book is designed for the specialist and trained research worker. Portraits and brief biographical sketches of each author are included. A bibliography is given at the end of each paper.

BURTON, ELI FRANKLIN, AND OTHERS

Phenomena at the temperature of liquid helium, by E. F. Burton, H. Grayson Smith, and

J. O. Wilhelm. New York: Reinhold Publishing Corporation, 1940. 362 p. illus. 23 cm. (American Chemical Society monograph series. No. 83) \$6.00. 1044

Contents: General introduction. Preface. Historical introduction. The liquefaction of gases. The measurement of temperature. The physical properties of liquid and solid helium. Superconductivity. Specific heats at low temperatures. Temperatures below 1°K. Electrical and thermal conductivities. The nature of the superconducting state. The λ transformation in liquid helium and the nature of helium II. Appendix. Author index. Subject index.

Note: The experimental work discussed in this book was performed at the McLennan Laboratory at the University of Toronto, one of the best equipped physical laboratories in the world. Bibliographies of the literature are included.

Electrochemistry

CREIGHTON, HENRY JERMAIN MAUDE, AND W. A. KOEHLER

Principles and applications of electrochemistry. New York: John Wiley & Sons, Inc., 1943-44. 2 v. illus. 21 cm. \$5.00 per volume. 1045 ✓

Contents (abridged): Volume I, Principles of electrochemistry by H. J. Creighton. Faraday's laws of electrolysis. The theory of electrolytic dissociation. The migration of ions. Electrokinetic phenomena. Electromotive force. Polarization and electrolysis. Theories of strong electrolytes. Homogeneous equilibria. The dissociation of water. Hydrolysis. The avidity of acids and bases. The theory of neutralization indicators and its application to volumetric analysis. Ampholytes. Heterogeneous equilibria. The electrochemistry of gases. Index of names. Index of subjects. Volume II, Applications of electrochemistry, by W. A. Koehler. Economics of power generation. Primary cells. Secondary cells or storage batteries. Electroplating. Electrowinning of metals. Electrometallurgy. Electrolysis of alkali halides. Electrolytic oxidation and reduction. Electroanalysis. Electric furnaces. Electronics. Miscellaneous electrochemical processes. Index of names. Index of subjects.

Note: A study of the principles and theory underlying electrochemistry and their application in industrial practice. Volume I is in its fourth edition, and contains new sections concerning the structure and properties of the electric double layer, streaming potentials, polarographic analysis, the Wien effect, and glow discharge analysis, as well as revision of the sections dealing with fused electrolytes, overvoltage, electrochemical reduction, and electrochemical action in gases. Volume II, of which the latest edition is the second, includes revision of the material on electroplating, nickel-cadmium alkaline storage battery, continuous tin strip plating, magnesium from sea water, hydrogen peroxide manufacture, new carbon bisulphide furnace, new phosphorus furnace, and fluorescent lamps.

DOLE, MALCOLM

Principles of experimental and theoretical electrochemistry. New York: McGraw-Hill Book Company, Inc., 1935. 549 p. illus. 21 cm. (International chemical series, J. F. Norris, consulting editor) \$5.00. 1046

Contents (abridged): Preface. Historical introduction. The Arrhenius dissociation theory. Electrolysis. Theoretical interpretation of the conductance of electrolytes. Methods of measuring transference numbers of solutions. Theoretical interpretation of transference numbers. Methods of measuring the dielectric constant. Dielectric constants and electric moments. Molecular rays. The measurement of electrical potential difference. Fundamentals of thermodynamics. The thermodynamics of cells without liquid junctions. Theoretical interpretation of the activity coefficients of electrolytes. Concentration cells with liquid junctions. Homogeneous ionic equilibria: the mass action law. Phase-boundary and semipermeable-membrane potentials. Oxidation and reduction cells. Potentiometric methods of analysis. The glass electrode. Electrokinetic phenomena. Electrocatalytic phenomena. Irreversible electrode phenomena. Quantum mechanics and electrochemistry. Appendix. Index.

Note: A textbook for college courses.

GLASSTONE, SAMUEL

An introduction to electrochemistry. New York: D. Van Nostrand Company, Inc., 1942. 557 p. illus. 23 cm. \$5.00. 1047

Contents: Introduction. Electrolytic conductance. The theory of electrolytic conductance. The migration of ions. Free energy and activity. Reversible cells. Electrode potentials. Oxidation-reduction systems. Acids and bases. The determination of hydrogen ions. Neutralization and hydrolysis. Amphoteric electrolytes. Polarization and over-voltage. The deposition and corrosion of metals. Electrolytic oxidation and reduction. Electrokinetic phenomena.

Note: In this textbook many topics in electrochemistry are explained from the standpoint of current ideas. The treatment is based upon four great developments of recent years: the activity concept, the interionic attraction theory, the proton-transfer theory of acids and bases, and the treatment of electrode reactions as rate processes. Upon this foundation the author has built a presentation of overvoltage, passivity, corrosion, deposition of metals, and other matters important in applied electrochemistry, as well as the material commonly treated in theoretical work. A selection of problems accompanies each chapter.

GLOCKLER, GEORGE, AND S. C. LIND

The electrochemistry of gases and other dielectrics. New York: John Wiley & Sons, Inc., 1939. 469 p. illus. 23 cm. \$6.00. 1048

Contents: Part I, Typical reactions in various forms of discharge: Chemical reaction in the glow discharge. Chemical reaction in silent electrical discharge. Chemical reaction in corona, electrodeless discharge and arc. Chemical effects of cathode rays. Reactions caused by electrons of known speed. Atoms and radicals in discharge tubes. Part II, The chemical reaction in electrical discharges: Hydrogen and hydrocarbons (1 to 1.6). Hydrogen-carbon compounds containing other elements (1.6.7 to 1.6.80). Hydrogen compounds containing elements other than carbon (1.7 to 5.17). Carbon compounds containing nitrogen, oxygen, sulphur and halogens (6 to 6.17). Nitrogen compounds with oxygen, phosphorus and halogens (7 to 7.15). Active nitrogen. Oxygen, ozone and compounds of elements with atomic number greater than eight. General topics. Part III, The physical and theoretical aspects of discharge reactions: Electron affinity of atoms and molecules. Mobility of ions. Ions produced from molecules in electrical discharges. Ionization produced during chemical reaction. Cathodic sputtering of metals and gas disappearance in discharge tubes. Mechanism of chemical reactions in electrical discharges. Indexes.

Note: The generally accepted elements of the theory of the subject are presented, and the authors have given their findings such partial interpretation as is possible in the light of present knowledge of the structure of matter and the nature of the forces involved. In the development there ensues a competent correlation of the authoritative research in the field of physical and chemical behavior of gases and other dielectrics under the influence of electric stress and discharge. Over 1300 published papers are reviewed.

HARNED, HERBERT SPENCER, AND BENTON B. OWEN

The physical chemistry of electrolytic solutions. New York: Reinhold Publishing Corporation, 1943. 611 p. illus. 23 cm. (American Chemical Society monograph series. No. 95) \$10.00. 1049

Contents (abridged): General thermodynamic introduction. General statement of the interionic attraction theory and properties of ionic atmospheres. Theory of the thermodynamic properties of electrolytic solutions. The theory of irreversible processes in electrolytic solutions. Numerical compilations of physical constants, characteristic slopes, and mathematical functions. Experimental investigation of irreversible processes in solutions of strong electrolytes. Conductance, transference numbers, viscosity and diffusion. Coulomb forces and ion association. Weak electrolytes. Frequency and field effects. Thermochemical quantities. Partial molal volumes, and the coefficients of expansion and compressibility. The calculation of activity and osmotic coefficients from freezing points, boiling points and vapor pressures. The thermodynamics of galvanic cells. Hydrochloric acid. Strong 1-1 electrolytes in aqueous solution. Polyvalent electrolytes in

aqueous solution. Mixtures of strong electrolytes. The ionization and thermodynamic properties of weak electrolytes. Index.

Note: This highly specialized text is written for chemists and advanced students. The presentation is technical and demands a thorough comprehension of mathematics as well as chemistry. The text is well documented with extensive bibliographical footnotes. References are given also in the appendix, which consists of tables drawn from experimental data.

MACINNES, DUNCAN ARTHUR

The principles of electrochemistry. New York: Reinhold Publishing Corporation, 1939. 478 p. illus. 23 cm. \$6.00. 1050

Contents (abridged): Coulometers and Faraday's law. Electrolytic conductance and the "classical" theories of dissociation. Electrical transference. Principles of thermodynamics and the galvanic cell. Chemical potential, activity, and related quantities. Debye-Hückel method for the theoretical calculation of activity coefficients. Effects of gravity and centrifugal force on the electromotive force of galvanic cells. Determination of thermodynamic ionization constants from the potentials of cells without liquid junctions. Thermodynamic studies of non-aqueous solutions. Determination and meaning of pH values. Standard potentials of electrode reactions. "Oxidation-reduction" potentials. Potentiometric titrations. Interionic attraction theory. Conductance of electrolytes in non-aqueous and mixed solvents. Effect of structure and substitution on the ionization constants of organic acids and bases. Dielectric constants of liquids and dipole moments of molecules. Electrokinetic phenomena. Electro-osmosis, electrophoresis and streaming potentials. Irreversible phenomena, passivity and overvoltage. Appendix. Indexes.

Note: A text for advanced students giving an account of theoretical electrochemistry based on available experimental data and literature. Derived values of physical constants, such as activity coefficients and standard potentials, form a supplement to previous critical compilations of data in the field. Basic principles are discussed and evaluated, followed by a study of recent ideas such as the extension of the Debye-Hückel theory and the application of the interionic attraction theory to electrolytic conductance. Citations of the original literature appear in footnotes.

Photochemistry

ELLIS, CARLETON, AND ALFRED A. WELLS

The chemical action of ultraviolet rays. Revised and enlarged edition by Francis F. Heyroth. New York: Reinhold Publishing Corporation, 1941. 961 p. illus. 23 cm. \$12.00. 1051

Contents (abridged): Part I, The sources of ultraviolet radiations: Mechanism of the emission of radiant energy. The spark as a source of ultraviolet radiation. The quartz mercury vapor arc. Recent mercury discharge lamps. Continuous ultraviolet radiations for absorption studies. Protective glasses, ultraviolet-transmitting glasses and filters. The sun as a source of ultraviolet radiations. Part II, Photochemical processes: Molecular spectra in relation to photochemistry. Overall photochemical reactions. Photosensitized processes. Reactions of inorganic gases. Inorganic reactions in liquids. Photochemical reactions of inorganic solids. The reactions of organic compounds. Reaction of unsaturated aliphatic compounds, aldehydes and ketones and carbohydrates. Reactions of aromatic compounds. Effect of light on halogenation reactions. Part III, Applications of photochemistry to industrial products: The reaction of fatty acids and the preservation of foods. Processes involving the polymerization of oils, paints and varnishes. Photochemistry of rubber. Textiles, paper and dye-stuffs. Part IV, Applications of ultraviolet rays in biology: The physiological effects of ultraviolet rays. Therapeutic applications. Rickets and irradiation. The photochemistry of the formation of vitamin D. Ultraviolet light and other vitamins. Photosensitized biological processes. Effects of ultraviolet radiations on plants. Author index. Subject index.

Note: A text and reference book for workers in theoretical and industrial chemistry, biology, and medicine, covering the theory and applications of photochemistry. Types of apparatus for producing ultraviolet rays are described in detail, representative photochemical reactions discussed, and the literature of a wide variety of photochemical processes is summarized. Included is a study of the effects of light on industrial products and a detailed historical account of ultraviolet radiations in forming D vitamins, with a consideration of the engineering and public health aspects involved. The revised edition contains new explanatory chapters

on the modern viewpoint in physical chemistry, and incorporates the results of ultraviolet research from 1925 to 1941. Many bibliographic references are given in footnotes.

NOYES, WILLIAM ALBERT, AND PHILIP ALBERT LEIGHTON

The photochemistry of gases. New York: Reinhold Publishing Corporation, 1941. 475 p. illus. 23 cm. (American Chemical Society monograph series. No. 86) \$10.00. 1052

Contents (abridged): Introduction. List of symbols. Experimental technique of photochemistry. A survey of spectroscopy. Photochemical kinetics and the determination of mechanism. Photochemical reactions resulting from absorption by atoms. Photochemical reactions following absorption by diatomic molecules. Photochemical reactions following absorption by polyatomic molecules. Appendixes. Summary of photochemical data. Subject index.

Note: This is an advanced text designed primarily for photochemists and students who already have a good knowledge of chemistry and physics. In addition to general references and bibliographies given at the end of chapters, there is an extensive bibliography in the appendix.

ROLLEFSON, GERHARD KROHN, AND MILTON BURTON

Photochemistry and the mechanism of chemical reactions. New York: Prentice-Hall, Inc., 1939. 445 p. illus. 23 cm. (Prentice-Hall chemistry series, W. M. Latimer, editor) \$7.65. 1053

Contents (abridged): Introduction. History. Free atoms and radicals. Quantum theory of spectra. Bohr's fundamental postulates. Molecular spectra. Morse curves for the potential energy of molecules. The uncertainty principle. Photoactivation and the properties of photoactivated molecules: I. Physical effects. II. Chemical effects. Reaction kinetics. Kinetic theory and rates of reaction. Kinetics of reactions involving atoms and radicals. Budde effect and Draper effect. Principle of microscopic reversibility. Photolysis in the solid state. Production of F centers. Production of F' centers. Absorption spectra. Effect of polarized light. Photolysis of inorganic compounds. Ozone. Photolysis of vapors of carbon compounds. Molecular rearrangements. Olson's model. Shift within a molecule. Photosensitization. Typical chain reactions. Addition reactions and associated phenomena. Polymerization. Effects in the liquid state. Heterogeneous reactions. Photosynthesis in vitro. Appendixes: Comparison of notations for atomic energy states. Heats of reaction and bond strengths. Energies of activation. Energy conversion chart. Subject index. Author index.

Note: Presents the fundamentals of photochemistry for students with a knowledge of physical chemistry and general physics. The first five chapters deal with concepts required for an understanding of effects produced by absorption of light and the behavior of resultant reactive states. The last ten chapters deal with specific reactions. Footnote references are given.

Crystallography

BUERGER, MARTIN JULIAN

X-ray crystallography; an introduction to the investigation of crystals by their diffraction of monochromatic X-radiation. New York: John Wiley & Sons, Inc., 1942. 531 p. illus. 23 cm. \$6.50. 1054

Contents: Introduction. Some geometrical aspects of lattices. The diffraction of X-rays by crystals. Space-group extinctions. The rotating-crystal method, preliminary account. The reciprocal lattice. Geometrical interpretation of Bragg's law. Rotating-crystal photographs and their interpretation. Practical aspects of rotating-crystal investigations. Oscillating-crystal photographs and their interpretation. An introduction to moving-film methods. A general introduction to the Weissenberg method. The normal-beam Weissenberg method. The equi-inclination Weissenberg method. Moving-film photographs taken with the X-ray beam inclined to the layers of the reciprocal lattice. The Sauter and the

Schiebold methods. The de Jong and Bouman method. The geometry of oblique cells and their reciprocals. The experimental determination of the lattice constants of the crystals belonging to the oblique systems. The theory of attaining precision in the determination of lattice constants. The precision determination of the linear and angular lattice constants of single crystals. The theory and interpretation of reciprocal lattice projections.

Note: An introduction to the investigation of crystals and their diffraction of monochromatic X-ray radiation. This volume deals exclusively with modern X-ray crystallography. Essential theory, design and operation of apparatus, simple indexing procedures, connections with group theory, precision determination of lattice constants, and related topics are treated in great detail. The book is addressed primarily to those actively engaged in some phase of crystal structure analysis and should be particularly useful to the beginner in the field. A modest background in physics and mathematics is required, the development is extremely detailed, and the text is replete with excellent diagrams and illustrations. Much of the important data is placed in tabular form. Lists of references are given at the end of each chapter.

DAVEY, WHEELER PEDLAR

A study of crystal structure and its applications. New York: McGraw-Hill Book Company, Inc., 1934. 695 p. illus. 23 cm. (International series in physics) \$7.50. 1055

Contents: Theory of diffraction of X-rays by a crystal. Crystal lattices. Calculation of interplanar spacings. Lane method of crystal analysis. Bragg method of crystal analysis. Powder method of crystal analysis. Rotating crystal method. Theory of space-groups. Application of theory of space-groups. Structure factor. Applications of structure factor method. Mechanism of crystal growth and its consequences. Packing shapes and packing sizes of atoms and ions. Refraction of light by crystals. Calculation of lattice energies. Diffraction of X-rays by amorphous materials. Orientation of crystals. Solid solutions. Chemical information to be gained from crystal-structure studies. X-ray tubes, transformers, and accessories. Semilogarithmic charts for use with powder method. Tables.

Note: A text for graduates in physics, chemistry or metallurgy, based on courses given at the Pennsylvania State College. It presupposes a knowledge of X-rays and X-ray equipment, and is intended to provide the reader with enough knowledge of the theory and technique of crystal analysis to enable him to read the literature intelligently and to do independent experimental work. References are given at the end of each chapter. There is an index.

SEITZ, FREDERICK

The modern theory of solids. New York: McGraw-Hill Book Company, Inc., 1940. 698 p. illus. 23 cm. (International series in physics; L. A. DuBridge, consulting editor) \$7.00. 1057

Contents: Empirical classification of solid types. The classical theory of ionic crystals. The specific heats of simple solids. The free-electron theory of metals and semi-conductors. Quantum mechanical foundation. Approximate treatment of the many-body problem. Molecular binding. The band approximation. Approximational methods. The cohesive energy. The work function and the surface barrier. The excited electronic states of solids. The electronic structure of the five solid types. The dynamics of nuclear motion; phase changes. Theory of conductivity. The magnetic properties of solids. The optical properties of solids.

Note: Presents a survey of the theory of the properties of all types of crystalline solids, treating them from a common viewpoint. Besides dealing with the theory of metals, the book discusses the properties of salts and other insulators as well, showing the factors which account for differences and similarities of all these materials.

STILLWELL, CHARLES WILLIAM

Crystal chemistry. New York: McGraw-Hill Book Company, Inc., 1938. 431 p. illus. 21 cm. (International chemical series, J. F. Norris . . . consulting editor) \$4.50. 1058

Contents: Introduction. The sizes of atoms and ions. The structures and properties of the elements: the metallic state. The nature of alloys. The structures of binary compounds. The properties of binary compounds. The structures of ternary com-

pounds. The structures of the silicates. The structures of Werner compounds. Isomorphism, mixed crystals, polymorphism. The structures of organic crystals. Natural fibers. Synthetic fibers.

Note: Intended to give the student a simple yet accurate account of the basic principles of crystal chemistry—the study of the laws governing the arrangement of ions, atoms, or molecules in solids, of the nature of the forces binding them together, and of the influence of arrangement and binding forces upon the chemical and physical properties of the solids.

WAHLSTROM, ERNEST E.

Optical crystallography. New York: John Wiley & Sons, Inc., 1943. 206 p. illus. 22 cm. \$3.00. 1059

Contents: Crystallography. Physical properties. Elementary optics. The polarizing microscope. Optics of isotropic substances. Measurement of index of refraction. The uniaxial indicatrix. Polarization of light. Uniaxial crystals in plane-polarized light. Uniaxial crystals in convergent polarized light. Optical accessories. Sign determination in uniaxial crystals. Biaxial crystals—the triaxial ellipsoid. Biaxial crystals in convergent polarized light. Determination of optic sign in biaxial crystals. Dispersion in biaxial crystals. Microscopic examination of nonopaque substances. Selected references. Index.

Note: An elementary book on the fundamental concepts of the subject. The book outlines the theory of the passage of light through crystals and fragments, and describes in detail the construction and manipulation of polarizing microscopes and accessories. Emphasis is placed on the determination of optical properties of crystals and fragments in immersion media. A descrip-

tion is given of the techniques for the measurement of refractive indices.

WYCKOFF, RALPH WALTER GRAYSTONE

The analytical expression of the results of the theory of space groups. Second edition. Washington, D.C.: Carnegie Institution of Washington, 1930. 239 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 318) Paper, \$3.00; cloth, \$4.00. 1060

Contents: The nature of the space groups: Elements of symmetry. Point groups. Space lattices. Space groups. An outline of the derivation of the space groups. The special cases of the space groups: The nature and derivation of special positions. The analytical expression of the special cases. Summarizing tables. The geometrical representation of the special cases.

Note: The greater part of this monograph consists of a tabular listing of the coordinates of the equivalent points in certain general positions of the symmetry elements of the space groups, together with three-dimensional pictorial representations of the symmetry elements which determine the special cases of a space group. Taken in conjunction with the tables, the latter are intended to give a complete analytical and geometrical description of these special cases. The second edition contains revised introductory material to the tables, certain corrections to the earlier listings, and the new pictorial representations previously mentioned. The work is of importance to crystallography as well as to pure mathematics.

GEOLOGY

General

ALLEN, VICTOR THOMAS

This earth of ours. Milwaukee: The Bruce Publishing Company, 1939. 366 p. illus. 22 cm. (Science and culture series, J. Husslein, general editor) \$4.00. 1061

Contents: Volcanoes and igneous rocks. Remade rocks. Streams and valleys. Springs, caves, and geysers. Glaciers. The ocean. How mountains are made. The age of the earth. The origin of the earth. Early earth history. The origin of life. Paleozoic, era of ancient life. Mesozoic, era of intermediate life. Cenozoic, era of recent life. List of works for reference. Index.

Note: A readable book intended for the general reader rather than the college student. The treatment is scientifically accurate but technical terms have been avoided as much as possible. The work is generously illustrated with reproductions of drawings and photographs.

BRADLEY, JOHN HODGDON

Autobiography of earth. With illustrations from drawings by Kenneth B. Adams. New York: Coward-McCann, Inc., 1935. 347 p. illus. 22 cm. \$3.00. 1062

Contents: The cosmic plan. The ocean overhead. Master etchers of the land. Waters that work in the dark. Battalions of the frost. The hungering deep. The wrath of Vulcan. A world in the making. Man's biography in stone. Aristocrats of the clod. Time's harvest. The limits of freedom.

Note: Written in popular style, this book treats of speculation on the age and plan of the world, action of elements in the atmosphere, erosion by rivers, underground rivers, glacial action, sea and coastline, volcanic action, earthquakes, fossil remains, precious stones, mineral and oil deposits. There is no index.

BRETZ, J. HARLEN

Earth sciences; meteorology, oceanography, geology. New York: John Wiley and Sons, Inc., 1940. 260 p. illus. 22 cm. (The sciences; a survey course for colleges, edited by Gerald Wendt) \$2.25. 1063

Contents: Our world. The earth's gaseous film. The liquid film of the earth. The solid earth. Stream work and stream histories. Effects of unequal hardness of rocks on streams. Deposition by running water. Ground water. Snow and ice. Shore-line gradation. Gradation by the wind. Diastrophism. Volcanoes and volcanism. The earth's history. Bibliography. Glossary. Index.

Note: A condensed, pleasantly written survey of important phases of meteorology, oceanography, physical geography, and geology. Many drawings and photographs are included. Bibliographies follow the various chapters. The material in the book is intelligible to the layman.

DALY, REGINALD ALDWORTH

Architecture of the earth. New York: D. Appleton-Century Company, Incorporated, 1938. 211 p. illus. 22 cm. (The Century earth science series, K. F. Mather, editor) \$3.00. 1064

Contents: The world map. Plumbing the depths. The crust deformed. The ascent of lava. Invasion of the mountain roots. The crust supported. General summary.

Note: A relatively simple account of the mechanism of the

earth, which emphasizes structural and dynamic geology, and gives special attention to the discoveries and interpretations in the fields of geology and geophysics made since the beginning of the present century. It outlines a new theory based upon a synthesis of the facts ascertained both by observers in the field and by their colleagues of the laboratory.

GAMOW, GEORGE

Biography of the earth, its past, present, and future. New York: The Viking Press, 1941. 242 p. illus. 22 cm. \$3.00. 1065

Contents (abridged): The age of the earth. The blessed event. The earth bears a daughter. The family of planets. Journey to the centre of the earth. The rise and fall of the mountains. The evolution of continents. Climates of the past. Life on the earth. A glimpse into the future. Index.

Note: A well-written story of the evolution of the earth, designed for the layman interested in science.

LEY, WILLY

The days of creation. New York: Modern Age Books, 1941. 275 p. illus. 22 cm. \$2.75. 1066

Contents: The first day: "Let there be light." The second day: the division of the waters. The third day: the conquest of land. The fourth day: the great new invention. The fifth day: the triumph of the reptiles. The sixth day: the glory of the mammals. The seventh day: the consolidation of brainpower. Index.

Note: A popularized account of the evolution of the earth and of the development of life on the planet, written in an informal style for the layman, and based on a survey of scientific literature. A comparison is made between the story of the creation in Genesis and the scientific account of evolution and geologic development.

MATHER, KIRTLEY FLETCHER, AND SHIRLEY L. MASON

A source book in geology. New York: McGraw-Hill Book Company, Inc., 1939. 702 p. illus. 23 cm. (Source books in the history of the sciences, G. D. Walcott, general editor) \$5.00. 1067

Note: Gives a comprehensive view of the development of geological science during the last four centuries by presenting the significant passages from writings of the great contributors to that science in the past. The excerpts are presented chronologically, according to birth dates of the contributors, and cover the development of geological science from Leonardo da Vinci to the end of the 19th century. There is a classified subject index and a general index.

NATIONAL RESEARCH COUNCIL

Physics of the earth. Volume iv: The age of the earth. By the Subsidiary Committee on the Age of the Earth, Division of Physical Sciences, with the cooperation of the Division of Geology and Geography and American Geophysical Union, National Research Council. Washington, D.C.: The National Research Council of the National Academy of Sciences, 1931. 487 p. illus. 24 cm. (Bulletin of the National Research Council. No. 80, June, 1931) Paper, \$4.50; cloth, \$5.00. 1067a

Contents: Summary of principal results, by Adolph Knopf. Geochronology, or the age of the earth on the basis of sediments and life, by Charles Schuchert. Age of the ocean, by Adolph Knopf. Calculating the age of minerals from radioactivity data and principles, by Alois F. Kovarik. Radioactivity and geological time, by Arthur Holmes. The age of the earth from astronomical data, by Ernest W. Brown. Index.

Note: The present work, which is the second in a series of nine volumes, consists of six detailed technical papers presenting the mathematical and theoretical bases for computing the age of the earth by three different methods, i.e., from rates of sedimentation, from studies of radioactivity, and from the gravitational mechanics of the solar system. The section on radioactivity and geological time deals exhaustively with all the available information, geologic, mineralogic, and chemical, including a discussion of the pleochroic halos or radiohalos in relation to disintegration rates of uranium and thorium. The evidence here presented indicates that the earth is at least 2,000 million years old. There are extensive bibliographies with each paper.

NICKLES, JOHN MILTON, AND OTHERS

Bibliography and index of geology exclusive of North America. Volume 9, 1941-42. By John M. Nickles, Marie Siegrist, and Eleanor Tatge. New York: Geological Society of America, 1943. 450 p. 24 cm. \$2.75. 1067b

Contents: Foreword. Abbreviations. Serials. Bibliography. Geologic maps. Index.

Note: As indicated by its title the bibliography and index does not include the literature on the geology of North America, covered in Thom's *Bibliography of North American geology*, Washington, D.C., published biennially by the U.S. Geological Survey (see Index). In the present work the alphabetic author list is followed by a subject index to the papers cited. If a paper has titles in more than one language, all titles are usually given, but if a title in a Roman alphabet accompanies one in Cyrillic, the latter is omitted. Usually a note, in italics, is added to the citation to indicate the scope of the paper. The compilation has been made in the library of the U.S. Geological Survey, and is the latest of a series published at approximately yearly intervals, beginning with 1933. The current volume covers the literature received prior to 1943 and exclusive of 1940 and preceding years. The detailed index is 109 pages in length.

SHAND, SAMUEL JEROME

Earth-lore; geology without jargon. New York: E. P. Dutton and Company, Inc., 1938. 144 p. illus. 19 cm. \$1.50. 1068

Contents: Seeing things to scale. The face of the earth. Earth sculpture. The sea floor. The book of the rocks. The creation saga. The age of the earth. What lies beneath the crust? Deeper and deeper. Chimneys in the crust. The problem of mountains. Rifts and ramps. How is the crust held up? Drifting continents. Atlantis and other "lost continents."

Note: A brief account of geology written in descriptive style for the layman.

SNIDER, LUTHER CROCKER

Earth history. With 335 illustrations. New York: The Century Co., 1932. 683 p. illus. 23 cm. (The Century earth science series) \$4.50. 1069

Contents (abridged): The book of the earth. History of the continents. The history of living things. Man and earth history. Index.

Note: The purpose of this text for college students beginning the study of geology is to give a comprehensive but generalized view of the history of the earth, without too much emphasis on how this knowledge has been obtained. The material is divided into four main sections, the processes which make earth history, an account of the principal changes the earth has undergone, the career of plants and animals, and finally the direct bearing of earth processes on man.

THOM, EMMA MERTINS

Bibliography of North American geology, 1929-1939. Washington, D.C.: Government Printing Office, 1944. 1546 p. 23 cm. (United

States. Geological Survey. Bulletin 937) Cloth only, \$2.50. 1069a

Note: This work lists approximately 25,000 titles relating to North American geology, including paleontology, petrology, and mineralogy, for the years 1929-1939, covering publications on the geology of the continent of North America and adjacent islands and on Panama, the Hawaiian Islands, and the island of Guam. It includes textbooks and papers of a general character by American authors, but not papers by foreign authors, except those which have appeared in American publications. The papers, with full title and medium of publication, are listed under the names of their authors, which are arranged in alphabetic order. The author list is followed by an extensive subject index nearly 500 pages long, giving detailed cross-references to the content of the literature cited. This work represents a continuation of Nickles's *Bibliography of North American geology*, 1919-1928, Washington, D.C., 1931, which is now out of print.

THOM, EMMA MERTINS

Bibliography of North American geology, 1940 and 1941. Washington, D.C.: Government Printing Office, 1942. 479 p. 23 cm. (United States. Geological Survey. Bulletin 938) Paper, \$0.50. 1069b

Note: Although published prior to the author's *Bibliography of North American geology*, 1929-1939, this work is a continuation of the latter volume, and, except for the period covered, follows the same plan and scope as that of the larger work. There are approximately 4500 entries and a detailed subject index.

Dictionaries

HUEBNER, WALTHER

Geology and allied sciences; a thesaurus and a coordination of English and German specific and general terms. Part I. German-English. New York: Oskar Piest, 1939. 405 p. 21 cm. \$7.50. 1070

Contents: Preface. General remarks on German and English spelling used in the thesaurus. Explanation of signs. List of abbreviations. Thesaurus. Table of comparative nomenclature of "Cambrian" and "Silurian."

Note: An attempt to coordinate the American and English with the German terminology in regard to geologic work. More than twenty-five thousand entries in each language are provided, with attention to peculiarities of local use of terms in both languages. Abbreviations used in international geologic literature are included, and also names of authors, especially authors on Foraminifera. Commercial terms are omitted, and only the more common mining terms are included.

RICE, CLARA MABEL

Dictionary of geologic terms (exclusive of stratigraphic formations and paleontologic genera and species). Ann Arbor, Mich.: Edwards Brothers, Inc., 1940. 461 p. 22 cm. Paper, \$6.00. 1070a

Note: Approximately 14,000 terms and phrases in use in the various branches of geology are defined in this reference work, including technical words from general geology, physiography, glacial geology, petrology, mineralogy, evolution, invertebrate and vertebrate paleontology (exclusive of genera and species names), stratigraphy (exclusive of formation names), and geophysics. References to original authors and source literature are given after each word defined. Pronunciations are omitted.

History

ADAMS, FRANK DAWSON

The birth and development of the geological sciences. Baltimore: The Williams & Wilkins Company, 1938. 506 p. illus. 26 cm. \$5.00. 1071

Contents: Introduction. Bibliography and sources. Geological science in classical times. The conception of the universe in the middle ages. On the "generation of stones." Medieval mineralogy. The birth of modern mineralogy and its development from Agricola to Werner and Berzelius. The birth of historical geology with the rise and fall of the Neptunian theory. "Figured stones" and the birth of palaeontology. The origin of metals and their ores. The origin of mountains. Earthquakes and the nature of the interior of the earth. The origin of springs and rivers. Quaint stories and beliefs. Conclusion. Index.

Note: An historical survey of the development of geological knowledge from the time of the early Greeks to the beginning of the nineteenth century. The author has gone back to the original texts of some of the more distinguished writers of classical, medieval, and early modern times and has analyzed their explanations of geological phenomena. There is also an account of the birth of historical geology which took place with the rise and fall of the Neptunian theory toward the close of the eighteenth century and the emphasis which was then placed on a systematic study of the rocky strata of the earth. For the general reader as well as for the student of geology.

GEOLOGICAL SOCIETY OF AMERICA

Geology, 1888-1938, fiftieth anniversary volume. New York: The Geological Society of America, 1941. 578 p. illus. 26 cm. \$3.00. 1072

Contents: Physiography, by Kirk Bryan. Glacial geology, by R. F. Flint. Oceanography, by H. C. Stetson. Invertebrate paleontology, by P. E. Raymond. Vertebrate paleontology, by A. S. Romer. Prehistoric archeology, by Chester Stock. Paleobotany, by E. W. Berry. Stratigraphy, by R. C. Moore. Sedimentation, by P. D. Trask. Structural geology, by R. D. Reed. Pre-Cambrian, by M. E. Wilson. Mineralogy, by E. H. Kraus. Petrology, by Adolph Knopf. Volcanology, by Howel Williams. Geochemistry, by E. S. Larsen. General geophysics, by H. E. Merwin. Seismology, by Beno Gutenberg. Ore deposits, by L. C. Graton. Petroleum geology, by W. B. Heroy. Exploratory geophysics, by D. C. Barton. Engineering geology, by W. J. Mead.

Note: A comprehensive volume reviewing the progress of geology in the fifty years of the existence of the Geological Society of America, intended for the investigator or advanced student who wants to know how the science of geology has taken on its present form, and for the specialist desiring a review of his particular field. Each subject is treated from the historical standpoint and covers the development of modern techniques in measurement and investigation. Future work is outlined and there are lists of references under each chapter.

Tables

NATIONAL RESEARCH COUNCIL

Handbook of physical constants, edited by Francis Birch, chairman, J. F. Schairer and H. Cecil Spicer. New York: The Society, 1942. 325 p. illus. 25 cm. (Geological Society of America. Special papers. No. 36) \$1.40. 1073

Contents: Composition of igneous rocks, stony meteorites, and iron meteorites, by R. A. Daly and others. Density at room temperature and one atmosphere, by H. Berman and others. Density at high temperature; thermal expansion, by E. B. Dane, Jr. Density at high pressure; compressibility, by Francis Birch. Elasticity (except compressibility), by Francis Birch. Internal friction in vibrating solids, by Francis Birch. Seismic velocities, by L. D. Leet and Francis Birch. Geodetic constants: data concerning the interior of the earth, by Francis Birch. Strength and plasticity, by David Griggs. Viscosity, by Francis Birch and E. B. Dane, Jr. Melting and transformation temperatures of mineral and allied substances, by F. C. Kracek. Effect of pressure on temperatures of melting and solid-solid equilibrium, in systems with one component, by Francis Birch. Effect of pressure on phase equilibria in binary condensed systems, by R. E. Gibson. Temperature-pressure-volume and phase relations of water, by Roy W. Goranson. Aqueous inorganic salt solutions at high temperatures, by N. B. Keevil. Heat capacity; heat of fusion, by Roy W. Goranson. Thermal conductivity and diffusivity, by Francis Birch. Radioactivity; the earth's heat and geological age measurements, by R. D. Evans and others. Observed temperatures in the earth's crust, by H. C. Spicer. Magnetic properties of rocks, by L. B. Slichter. Electrical properties of rocks and minerals, by L. B. Slichter and M. Telkes. Index.

Note: A collection of tables of interest primarily to geologists,

including brief introductions to the various tabulations explaining the use and limitations of the data. The subject of optical mineralogy is omitted and manufactured materials such as porcelains, refractory bricks, and structural metals are omitted or treated very briefly. Bibliographies are given under each section. The work was compiled under the direction of a committee of the National Research Council.

Textbooks

BRANSON, EDWIN BAYER, AND W. A. TARR

Introduction to geology. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 482 p. illus. 23 cm. \$3.75. 1074

Contents: Part I, Physical geology: Introduction. The organization of matter (of the earth). Volcanism and igneous rocks. Weathering of igneous rocks. Introduction to the physical agents. Running water. Ground water. The ocean. Sedimentary rocks. Metamorphic rocks. Snow and ice. The wind. Structures and diastrophism. Earthquakes. Part II, Historical geology: Introduction. Origin of the earth. Dawn of earth history. The Paleozoic era. Petroleum geology and the petroleum of the Paleozoic. Middle Paleozoic; Silurian and Devonian periods. Upper Paleozoic, Mississippian, Pennsylvanian, and Permian periods. The Mesozoic era. Lower Mesozoic; Triassic period. Middle Mesozoic; Jurassic period. Upper Mesozoic; Cretaceous period. The Cenozoic era. The Pleistocene or Glacial epoch.

Note: The aim of this text is to develop a connected story of the earth which stresses the positive relationship between the various geologic processes and the organization of earth materials. Intended for use in a first course in college. Written with a minimum of technical phraseology.

CHAMBERLIN, THOMAS CHROWDER, AND ROLLIN D. SALISBURY

College textbook of geology. Rewritten and revised by Rollin T. Chamberlin and Paul MacClintock. New York: Henry Holt and Company, 1930-33. 2 v. illus. 22 cm. \$6.00. 1075

Contents: Volume I, College geology: Geologic processes and their results: Preliminary outline. The atmosphere. Weather and climate. Ground water. Running water. Snow and ice. The ocean. Lakes. Diastrophism. Volcanism. The development of mountains. Appendix. Index. Volume II, Historical geology: The origin of the earth. Stages of the earth's history leading to the known eras. The Archeozoic era. The Proterozoic era. The Paleozoic era: the Cambrian period; the Ordovician period; the Silurian period; the Devonian period; the Mississippian period; the Pennsylvanian period; the Permian period. The Mesozoic era: the Triassic period; the Jurassic period; the Cretaceous period. The Cenozoic era: the Tertiary period; the Quaternary period. Appendix: Life development. Plants. Animals. Index.

Note: A college textbook covering the principles and products of geologic processes, with stress on procedures rather than descriptions. Volume I is the second edition, published in 1933, and represents a revision and expansion of the 1927 revision. A new chapter on the origin of mountains has been introduced, and new material added on weathering, the occurrence of ground water, artesian wells, Appalachian physiography, the cycle in arid climates, Alpine topography, volcanoes, and diastrophism. Volume II is a revision of the 1909 edition, and represents a condensation of the latter and changes in points of view, e.g. the treatment of the Comanchian as an epoch within the Cretaceous period, and the division of the Cenozoic era into but two periods, the Tertiary and the Quaternary. Many illustrations are used.

CRONEIS, CAREY GARDINER, AND WILLIAM C. KRUMBEIN

Down to earth; an introduction to geology. Decorative drawings by Chichi Lasley. Chicago: The University of Chicago Press, 1936. 501 p. illus. 23 cm. \$5.00. 1076

Contents: Introduction. Second-rate planet. Solid, liquid, and gas. Energy audit. The tooth of time. Winds and turbulent motion. Streams and valleys. The everlasting hills. Underground water and laminar flow. Rivers of ice. End of the line. The bounding main. Plus and minus. Excursions among the sand

grains. Brief interlude. What price continents? Folds and faults. Earthquakes. Journey to the center of the earth. Vulcan's chimneys. Igneous intrusions. Frozen seas of lava. Heredity versus environment. The evolution of rocks. Ancient history. Universal cemetery. Correlations. Older floods. Mountains and climates. Vestiges of creation. Earth's birth. Gargantuan calendar. Pre-Cambrian. Life begins. Early Paleozoic events. Invertebrate heyday. Late Paleozoic events. The forest primeval. Crossing the strand. An earlier depression. Early Mesozoic events. End of an era. Medieval life. Megalomania. Cephalopods. The Tertiary. The Quaternary. The warm-blooded. *Homo diluvii testis*. Money and politics. Prospects of an end. Index.

Note: A "new plan" text at the University of Chicago. Geology is explained in its relationship to physics, chemistry, mathematics, and biology. The growth of the earth is traced, with the processes which have actively shaped its surface features.

EMMONS, WILLIAM HARVEY, AND OTHERS

Geology; principles and processes, by William H. Emmons, George A. Thiel, Clinton R. Stauffer, and Ira S. Allison. Second edition. New York: McGraw-Hill Book Company, Inc., 1939. 451 p. illus. 23 cm. \$3.75. 1077

Contents: Introduction. Nature of materials that constitute the earth. The atmosphere. Ground water. Gradational work of streams. Gradational work of snow and ice. Lakes and marshes. The ocean. The origin and nature of sediments. Sedimentary rocks. Vulcanism. Igneous rocks. Diatrophism. The origin and structure of mountains. Metamorphism. Probable conditions within the earth. Mineral deposits.

Note: A brief presentation of the elements of geology prepared for use in a one-semester beginning course for college students, covering the materials of the earth and the processes that operate at the earth's surface. The second edition contains additional material on the atmosphere, and on wind, sediments, igneous rocks and rock structure, with new illustrations.

FIELD, RICHARD MONTGOMERY

Geology manual; an instruction and laboratory manual for beginners. Princeton: Princeton University Press, 1941. 2 v. illus. 23 cm. Paper, \$1.75 each volume. 1078

Contents: Part I, Physical geology: Chemistry of rock minerals. Minerals in igneous rocks. Minerals in sedimentary rocks. Sedimentary rocks. Minerals in metamorphic rocks. Metamorphic rocks. Structural geology. Economic geology. Interpretation of topographic maps. The work of the wind. River and regional erosion. River deposition. Underground water. Mountain glaciation. Continental glaciation. Shore lines. Appalachian topography. Physiographic provinces. Appendix (list of laboratory materials). Part II, Historical geology: Introduction to the study of historical geology in the laboratory and museum. Introduction to paleontology. Classification of organisms. Classification of invertebrates. Classification of fossil plants. Introduction to vertebrate paleontology. Introduction to preceptories on the history of the earth. Introduction to the study of structural geology. Exercises in regional geology. Appendix.

Note: Either volume of this two-part instruction and laboratory manual for beginning college students may be purchased and used separately. Preperforated exercise pages are provided so that the student can tear out each completed work sheet and hand it in to the instructor. The manual omits the more technical and lengthy details which cannot be readily copied down by a large class and which may be obtained from any standard textbook. A reference table of eleven American textbooks on the subject is provided in Part II, indicating the corresponding page number for various topics treated in the manual. The current sixth edition of Part I differs from the fifth only in minor details. Part II is a fifth edition of the original work and contains a new section on the outlines of regional geology. Neither volume has an index.

FIELD, RICHARD MONTGOMERY

The principles of historical geology from the regional point of view. Princeton: Princeton University Press, 1933. 283 p. illus. 23 cm. \$3.50. 1079

Contents: The history of stratigraphy. The sedimentary rocks. The technique of correlation. The Grand Canyon regions. Niagara Falls and regions. The Appalachians. The Northwest Highlands

of Scotland. The Alps. Yellowstone Park and Big Horn Basin region: a geological excursion. Index.

Note: An elementary textbook for the college student. Part I treats of the principles of historical geology, and more particularly of the technique used by the geologist in attempting to discover the geological history of a region. Part II contains a series of elementary descriptions of geological provinces, selected in the ascending order of their structural complexity.

HOBBS, WILLIAM HERBERT

Earth features and their meaning; an introduction to geology for the student and the general reader. Second edition, revised and enlarged. New York: The Macmillan Company, 1931. 517 p. illus. 22 cm. \$4.90. 1079a

Contents (abridged): The compilation of earth history. The figure of the earth. The nature of the materials in the lithosphere. The rocks of the earth's surface shell. A study of rock folds. The architecture of the fractured superstructure. The interrupted character of earth movements; earthquakes and sea-quakes. The rise of molten rock to the earth's surface; volcanic mountains of exudation and of ejected materials. The attack of the weather. The life histories of rivers. Earth features shaped by running water. The travels of the underground water. Sun and wind in the lands of infrequent rains. The features in desert landscapes. Repeating patterns in the earth relief. The forms carved and molded by waves. Coast records of the rise or fall of the land. The glaciers of mountain and continent. The continental glaciers of polar regions. The continental glaciers of the "ice age." Glacier lakes. The uplift of the land at the close of the ice age. Land sculpture by mountain glaciers. The origin and forms of mountains. Appendixes. Index.

Note: A textbook which selects for study those dominant geological processes which are best illustrated by features in northern North America and Europe. Emphasis has been placed upon the dependence of these processes upon existing climatic conditions, with particular attention given to desert regions. The second edition adds two new chapters on meteorology and new material to cover the developments in the science of geology made between 1911 and 1931. References appear at the end of each chapter.

HUSSEY, RUSSELL CLAUDIUS

Historical geology; the geologic history of North America. New York: McGraw-Hill Book Company, Inc., 1944. 491 p. illus. 21 cm. \$3.50. 1080

Contents (abridged): Fossils reveal the life of the past. The concept of evolution. The origin of the earth. Organizing the geologic record. The Archeozoic era. The Proterozoic era. The Paleozoic era: The Cambrian period. The Ordovician period. The Silurian period. The Devonian period. The Mississippian period. The Pennsylvanian period. The Mesozoic era: The Triassic period. The Jurassic period. The Cretaceous period. The Cenozoic era: The Tertiary period. The Pleistocene period. Life of the Cenozoic. The geologic history of man. Appendix. Index.

Note: In this introductory college text, the author has not attempted to provide a comprehensive treatment of the geologic history of North America but limits himself to outlining the highlights and significant events of this history. There is a brief discussion of the working methods of geologists. Technical terminology is used sparingly. A brief introduction to the study of fossils is given in the appendix, and suggested readings are at the end of each chapter.

LONGWELL, CHESTER RAY, AND OTHERS

Outlines of geology. A combination of Outlines of physical geology, by Chester R. Longwell, Adolph Knopf, and Richard F. Flint, and Outlines of historical geology, by Charles Schuchert and Carl O. Dunbar. Second edition. New York: John Wiley and Sons, Inc., 1941. 672 p. 24 cm. \$4.00. 1081

Contents: Part I, Outlines of physical geology: Preview of geology. Minerals and rocks. Weathering and mass-wasting. Running water. Sculpture by streams and mass-wasting. Subsurface water. Lakes and swamps. Glaciers and glacial sculpture. Erosion and deposition by wind. The sea. Sediments and sedimen-

tary rocks. Volcanism and deep-seated igneous action. Bending, fracturing, and metamorphism of rocks. Earthquakes; the earth's interior. Mountains and related land forms. Mineral resources. Geology and engineering. History, the central theme of geology. Topographic maps. Index. Part II, Outlines of historical geology: Prologue; Records in stone. The scale of time. The constant change of living things. A living record of the dead. Earth's changing features: Before the Cambrian. Glimpses of Paleozoic landscapes. The Mesozoic world. The modern world unfolds. Ice sculptures the final scene. The pageant of life: Paleozoic inhabitants of the earth. The reign of reptiles. Mammals inherit the earth. The coming of man. An introduction to animals and plants. Index.

Note: Each of the parts which make up this combined volume is also published separately. The present work is intended for use in short courses covering the whole field of elementary geology, and while the two parts are still paged separately, the authors state that in this second edition they have been welded together in a unified whole. Physical geology is explained as a key to the reading of geologic history, and an attempt is made to give the student or lay reader an appreciation of earth-features as the results of processes that are still active. Considerable attention is paid to the numerous practical aspects of geology, including its application in engineering projects such as dams, aqueducts, and tunnels. The work is based on the material contained in the authors' *A textbook of geology*, New York, 1939-41 (see Index), and contains more illustrations but a shorter text than the earlier work.

MATHER, KIRTLEY FLETCHER, AND CHALMER J. ROY

A laboratory manual of physical and historical geology. New York: D. Appleton-Century Company, Inc., 1934. 302 p. illus. 27 cm. (The Century earth science series) \$2.50. 1082

Note: This is a combination laboratory manual and notebook designed for use in an introductory course in geology extending over an entire college year. Physical geology is treated in terms of the several agencies involved. Historical geology is treated on a regional rather than a time basis. Thus one exercise can be used for the entire geologic history of the Appalachian Mountain system, another for the Rocky Mountain system and the Colorado plateau, etc. Detailed instructions for working with mineral and rock specimens and topographic and geologic maps are given.

MILLER, WILLIAM JOHN

Elements of geology, with reference to North America. Second edition. New York: D. Van Nostrand Company, Inc., 1939. 516 p. illus. 23 cm. \$3.50. 1083

Contents: Part I, Physical geology: Introduction. Instability of the earth's crust. Materials of the earth—minerals. Materials of the earth—rocks. Rock weathering. Structure of the earth's crust. The work of streams. Glaciers and their work. Geological action of wind. The sea and its work. Volcanoes. Sub-surface water. Mountains, plateaus, and plains. Origin and history of lakes. Part II, Historical geology: General principles. Origin and pre-geologic history of the earth. The Archeozoic era. The Proterozoic era. Paleozoic rocks and history. Paleozoic life. Mesozoic rocks and history. Mesozoic life. Cenozoic rocks and history (excluding the ice age). Quaternary ice age. Cenozoic life. Appendix. Organic evolution. Index.

Note: This introductory college textbook develops the principles of geology in general terms, with many direct applications to the geological structure and history of North America. It is arranged in the form of a continuous story, in which certain minor changes in the geological time-sequence have been made in order to achieve logical continuity.

MILLER, WILLIAM JOHN

An introduction to historical geology, with special reference to North America. Fifth edition. New York: D. Van Nostrand Company, Inc., 1942. 499 p. illus. 23 cm. \$3.50. 1084

Contents (abridged): Scope and significance of historical geology. Fossils. Rock formations. Relations of continents and ocean basins. Geologic time. Origin and pre-geologic history of the earth. The Archeozoic era. The Proterozoic era. Earlier Paleozoic time: Rocks and physical history of the Cambrian, the Ordovi-

cian, and the Silurian periods. Earlier Paleozoic life. Later Paleozoic time: Rocks and physical history of the Devonian, the Mississippian, the Pennsylvanian, and the Permian periods. Later Paleozoic life. Summary of Paleozoic history and life. Mesozoic era: Rocks and physical history of the Triassic, Jurassic, and the Cretaceous periods. Mesozoic life. Summary of Mesozoic history and life. Cenozoic era: Rocks and physical history of the Cenozoic (excluding Pleistocene glaciation). Pleistocene glaciation. Cenozoic life. Appendices. Index.

Note: A companion volume to the author's *Introduction to physical geology* described below, the two books together being intended as a text for one-year college courses in general geology. The present volume may be used alone as a text for special courses in historical geology, in which case an elementary knowledge of dynamical and structural geology is presupposed. The salient points in the history of the Paleozoic and Mesozoic eras and the corresponding principal evolutionary changes in organisms are summarized. The fifth edition contains extensive textual revisions occasioned by recent geological research on such topics as the histories of geological periods, the structure of rocks, and the antiquity of man.

MILLER, WILLIAM JOHN

An introduction to physical geology, with special reference to North America. Fourth edition. New York: D. Van Nostrand Company, Inc., 1941. 465 p. illus. 23 cm. \$3.25. 1085

Contents: Introduction. Instability of the earth's crust. Materials of the earth—minerals. Materials of the earth—rocks. Rock weathering. Structure of the earth's crust. The work of streams. Glaciers and their work. Geological action of wind. The sea and its work. Volcanoes. Subsurface water. Mountains, plateaus and plains. Origin and history of lakes. Economic geology. Some common and useful minerals. Index.

Note: A college textbook prepared as a companion volume to the author's *Introduction to historical geology* described above. The treatment assumes no formal knowledge of either chemistry or physics. The historical order has been emphasized in the treatment of special topics and concrete examples. The fourth edition includes new statistical data on economic geology together with new illustrations and minor textual changes.

MOORE, RAYMOND CECIL

Historical geology. New York: McGraw-Hill Book Company, Inc., 1933. 673 p. illus. 23 cm. \$4.00. 1086

Contents (abridged): Introduction: The materials of earth history. Development of the primitive earth. Geologic time and its divisions. The Pre-Cambrian eras: The oldest known rocks. The formations and history of the Archeozoic era. The formations and history of the Proterozoic era. The Paleozoic era—age of ancient life: The Paleozoic formations. The early Paleozoic subera: Formations and physical history of Cambrian time. Formations and physical history of Ordovician time. Formations and physical history of Silurian time. The late Paleozoic subera: Formations and physical history of Devonian time. Formations and physical history of Mississippian time. Formations and physical history of Pennsylvanian time. Formations and physical history of Permian time. The Mesozoic era: The Mesozoic formations. Formations and physical history of Triassic time. Formations and physical history of Jurassic time. Formations and physical history of Cretaceous time. The Cenozoic era: The Cenozoic formations. Formations and physical history of Tertiary time. The Quaternary period. The geologic history of man. Selected references. Index.

Note: The physical and biological aspects of earth history are well correlated, but are segregated in major units based on eras or sub-eras. Principles of interpreting the geologic record are developed on the basis of study of a definite region, the Grand Canyon district. Emphasis is placed on the illustrative aids.

SECRIST, MARK HOWARD

Laboratory manual for general geology (physical and historical). New York: The Macmillan Company, 1935. 295 p. illus. 28 cm. \$2.25. 1087

Contents: Minerals. Rocks. Topographic maps. Earth history—chronology and life. Geologic maps. Block diagrams. Paleontology. The plant kingdom. The animal kingdom. Bibliography.

Note: This book for the use of college students covers both physical and historical geology. It may be used with any standard text.

A TEXTBOOK OF GEOLOGY. New York: John Wiley & Sons, Inc., 1939-41. 2 v. illus. 23 cm. Vol. I, \$3.75; Vol. II, \$4.00. 1088

Contents (abridged): Part I (volume I), Physical geology, by Chester R. Longwell, Adolph Knopf, and Richard F. Flint: Rock weathering and its part in erosion. Mass-wasting at the earth's surface. Running water. Sculpture of the lands by streams and mass-wasting. Subsurface waters. Glaciers and glaciation. Erosion. Sedimentary rocks. Igneous rocks. Volcanoes. Deformation of the earth's crust. Earthquakes. Metamorphism. Origin and history of mountains. Mineral resources. Appendixes. Index. Part II (volume II), Historical geology, by Charles Schuchert and Carl O. Dunbar: Earth history. A living record of the dead. The constant change of living things. The origin of the earth. The scale of time. The record in the rocks. The Cryptozoic eon. The Paleozoic world: Cambrian, Ordovician, Silurian, Devonian, Mississippian, Pennsylvanian periods. The Permian period, a crisis in earth history. The Mesozoic world: Triassic and Jurassic periods. Cretaceous time and the end of an era. The coming of the recent: physical changes during the Cenozoic era. Ice sculptures and final scene. Mammals inherit the earth. The coming of man. Appendix. Index.

Note: The present work is a successor to Pirsson and Schuchert's *A textbook of geology*, 2 v., New York, 1920-24. Part I offers in two appendixes the definitions and elementary descriptions of all the minerals and rocks presented in the text. Weathering is treated as a unit subject, and its relation to erosion is made clear. Glaciation, igneous geology, and metamorphism are presented in the light of the most recent data available. Part II presents a history of the earth as it is deduced from stratified rocks and their entombed fossils. In treating each geologic period an attempt is made to visualize the physical geography of the time and the major continental changes taking place. There are numerous illustrations and bibliographic references in both volumes. The second edition of Part I contains new material on creep and landsliding, sculpturing by running water, and principles of stream action. The fourth edition of Part II includes new paleogeographic material, new maps, and additional references. A briefer version is offered by the same publisher under the title, Longwell, C. R., and others, *Outlines of geology* (see Index).

Geology of Various Regions

Africa

VEATCH, ARTHUR CLIFFORD

Evolution of the Congo basin. New York: The Geological Society of America, 1935. 183 p. illus. 25 cm. (Geological Society of America. Memoir 3) \$1.75. 1090

Contents (abridged): Introduction. Historical review. Features and surficial deposits of Kasai-Lunda. Basement rocks. Lubilash beds. Lukuga and associated beds. Stanleyville and associated beds. Stanleyville and associated beds of north central Angola. Dwyka glaciation. Conditions in Kasai-Lunda and Bushimaie diamond regions in Karroo time, and source of the diamonds. General summary and conclusions. Bibliography. Index.

Note: A memoir summarizing the available geological knowledge on the Congo basin, with a critical estimate of the various theories of geologic evolution and new data based on the author's field work in that region between 1924 and 1930.

Algeria

ANDERSON, ROBERT VAN VLECK

Geology in the coastal Atlas of western Algeria. New York: The Geological Society of America, 1936. 450 p. illus. 25 cm. (Geological Society of America. Memoir 4) \$3.50. 1091

Contents (abridged): Introduction. Geography. General stratigraphic considerations. Pre-Cretaceous terranes. Cretaceous sys-

tem. Eocene and Oligocene groups. Cartennian group. Telliian group: Meroui stage, Beida stage, Mellah stage; tuff beds of the Telliian group. Upper Miocene or Lower Pliocene beds. Pliocene series: Tarhia stage, Slama stage, Hamri stage, Chylimath stage. Quaternary stages. Igneous rocks. Structure. Features of structural history. Index.

Note: A study of the geology of an area of approximately 3800 square miles along the Mediterranean coast. Numerous features of the general geology and geography are dealt with, but special emphasis is placed on a discussion of the Cenozoic stratigraphic sequence and structural history, with particular reference to the Miocene and Pliocene periods. A geologic map on the scale of 1/200,000 is presented, showing in detail the distribution of the formations representing the latter periods.

Canada

HAYES, ALBERT ORION, AND BENJAMIN F. HOWELL

Geology of Saint John, New Brunswick. New York: The Geological Society of America, 1937. 146 p. illus. 24 cm. (Geological Society of America. Special papers. No. 5) \$1.25. 1092

Contents (abridged): General geology. Stratigraphy: Pre-Cambrian, Cambrian, Silurian and Devonian, Carboniferous, Triassic. Structural geology. Summary of conclusions. Bibliography. Index.

Note: A technical paper summarizing the results of geological surveys made between 1913 and 1926, covering approximately 500 square miles and including the central portion of Saint John and Kings counties. The areal and structural geology of the region is indicated on a geologic map.

NORTHROP, STUART ALVORD

Paleontology and stratigraphy of the Silurian rocks of the Port Daniel-Black Cape region, Gaspé. New York: The Society, 1939. 302 p. illus. 24 cm. (Geological Society of America. Special papers. No. 21) \$2.50. 1093

Contents: Part I, Introduction. Part II, General geology. Part III, Stratigraphy of the Chaleur series. Part IV, Systematic paleontology. Works to which reference is made. Index.

Note: A monograph summarizing the geologic structure and physiography of the region, together with a description of the species and genera of fossil fauna, including new specimens of cephalopods, and the entire Chaleur series. With geologic map of the area and 28 pages of photographs.

TWENHOFEL, WILLIAM HENRY

Geology and paleontology of the Mingan islands, Quebec (with descriptions of Brachiopoda by W. H. Twenhofel and Marguerite Stiles Whiting, and a section on Cephalopoda by Aug. F. Foerste). New York: The Society, 1938. 132 p. illus. 24 cm. (Geological Society of America. Special papers. No. 11) \$1.25. 1094

Contents (abridged): Human occupation of the region. Résumé of previous studies. Physiography and general geology. Geologic structure. Geologic section. Paleontology: correlations. Description of the faunas: Algae, Porifera, Coelenterata, Echinodermata, Bryozoa, Brachiopoda, Pelecypoda, Gastropoda, Ostracoda, Trilobita, Cephalopoda. Bibliography. Index.

Note: A study of the geologic formations and a description of the fossil faunas, with numerous full-scale photographs of Mingan and Romaine fossils and detailed description of the specimens collected by the author.

Caribbean Sea

SCHUCHERT, CHARLES

Historical geology of the Antillean-Caribbean region, or the lands bordering the Gulf of Mex-

ico and the Caribbean Sea. New York: John Wiley & Sons, Inc., 1935. 811 p. illus. 23 cm. \$10.00. 1095

Contents: Introduction and summary. The three Middle American basins. Biogeography. The lands: Mexico; The Gulf coastal plain of the United States; Nuclear Central America; The Antilles and their Bahaman foreland; The young Isthmian link connecting Central and South America; Northern South America; The oceanic islands. Index.

Note: A complete treatise on the historical geology of the lands bordering the Gulf of Mexico and the Caribbean Sea. It summarizes the stratigraphy and historical geology of Mexico, Central America, all of the Antillean islands, and northern South America (Venezuela and Colombia), as well as the Gulf coastal states of the United States. Formations are correlated within each region and also interregionally. The paleogeography and the geosynclines are illustrated on a new series of fourteen maps. Geologic maps are included for most of the regions, either compiled or taken from the best sources available. The book is not only an interpretation of the geologic history but also a voluminous compilation of the structure, stratigraphy and paleontology of the region under discussion.

Mexico

KING, ROBERT EVANS, AND OTHERS

Geology and paleontology of the Permian area northwest of Las Delicias, southwestern Coahuila, Mexico, by Robert E. King, Carl O. Dunbar, Preston E. Cloud, Jr., and A. K. Miller. New York: The Geological Society of America, 1944. 172 p. illus. 24 cm. (Geological Society of America. Special papers. No. 52) \$2.00. 1096

Contents: Geology. Permian and Pennsylvanian (?) fusulines. Permian brachiopods. Permian cephalopods. References cited. Explanation of plates. Index.

Note: This description of the Permian rocks and fauna of central Mexico has been prepared by four experts on the subject. The greater part of the monograph is taken up with the systematic descriptions and systematic paleontology, together with references to pertinent literature.

MICHIGAN UNIVERSITY. SAN CARLOS MOUNTAINS EXPEDITION, 1930

The geology and biology of the San Carlos mountains, Tamaulipas, Mexico. Ann Arbor: University of Michigan Press, 1937. 341 p. illus. 28 cm. (University of Michigan studies. Scientific series. Vol. XII) \$5.00. 1097

Contents: Geology of the sedimentary rocks of the San Carlos mountains, by Lewis B. Kellum. Igneous rocks of the San Carlos mountains, by Edward H. Watson. Ore deposits of the San Carlos mountains, by Edson S. Bastin. Geology of the Sierra de Cruillas, Tamaulipas, by Ralph W. Imlay. Mammals of the San Carlos mountains and vicinity, by Lee R. Dice. Arachnida from the San Carlos mountains, by Arthur M. Chickering. Two new tarantulas of the genus *Eurypelma* from the San Carlos mountains, by Ralph V. Chamberlin. Fishes from the San Carlos mountains, by Carl L. Hubbs. Some amphibians and reptiles from Tamaulipas, by Helen T. Gaige.

Note: Comparable in structure and position to the Black Hills of South Dakota, the San Carlos mountains comprise an isolated physiographic unit about nine hundred square miles in area, rising from the Gulf coastal plain midway between the eastern part of the Sierra Madre and the Gulf of Mexico. In 1930 the University of Michigan sent an expedition, under Professor Kellum's direction, to this region. The scientific results are presented in this book, consisting of the geological and biological reports of the expedition's staff and laboratory studies of certain groups of organisms from the region.

MUIR, JOHN M.

Geology of the Tampico region, Mexico. Tulsa, Okla.: The American Association of Pe-

troleum Geologists, 1936. 280 p. illus. 23 cm. \$4.50. 1098

Contents (abridged): Part I, Introductory: History. Topography. Part II, Stratigraphy and paleogeography: Paleozoic. Mesozoic. Tertiary. Oligocene. Miocene. Tertiary paleogeography and geologic history: synopsis. Part III, Igneous rocks and seepages. Igneous rocks. Part IV, General structural features and structure of oil fields: General structural features, summary: Northern fields. Southern fields. Appendix. Bibliography. List of reference maps. Gazetteer. Index.

Note: This book is the first serious attempt to assemble under one cover the existing knowledge of the geology of the Tampico region in Mexico. The information has been collected by means of personal interviews, correspondence, and field trips by the author. Strictly speaking, the work deals with the central part of the Tampico embayment area. The geology of the extreme northern end of the embayment and the southernmost extension is not presented. Apart from discussion of general stratigraphical and structural features, a synoptical description of the two main oil fields, the northern and southern fields, is given. A bibliography of Mexican oil field references is given, and maps are furnished with the book.

Newfoundland

SCHUCHERT, CHARLES, AND CARL O. DUNBAR
Stratigraphy of western Newfoundland. New York: The Geological Society of America, 1934. 123 p. illus. 26 cm. (Geological Society of America. Memoir 1) \$2.00. 1099

Contents (abridged): Introduction and summary. Cambrian system. Ordovician system of western Newfoundland: Green Point series, St. George series, Table Head series, Long Point series, Cow Head limestone breccia, Humber Arm series. Ordovician and Silurian systems of northeastern Newfoundland. Devonian system. Mississippian system. Newfoundland as a part of Greater Acadia. Bibliography. Index.

Note: A summary of data based on four expeditions from 1910 to 1933, analyzing the complex structure of the region and presenting a composite stratigraphic section of the Cambrian and Ordovician strata of the coastal lowland, divisible into ten named formations or series.

Pacific Islands

CHUBB, LAWRENCE JOHN

Geology of Galapagos, Cocos, and Easter Islands. With Petrology of Galapagos Islands, by Constance Richardson. Honolulu, Hawaii: Bernice P. Bishop Museum, 1933. 67 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 110) Paper, \$2.00. 1100

Contents: Geology of Galapagos, Cocos, and Easter Islands: Introduction. Galapagos Archipelago. Cocos. Easter Island. Regional relations. Petrology of the Galapagos Islands: Introduction. Lavas. Gabbroic xenoliths. Fragments from tuffs and agglomerates. Tuffs. Summary of rock types and analyses. Age relations. Summary and comparison. Literature cited.

Note: This paper gives a full account of the geological investigations of the St. George Expedition made during 1924-1925 in the more easterly volcanic islands of the Pacific, including brief accounts of the petrology of Cocos and Easter Islands, from which small collections were obtained, and an account of the petrology of the Galapagos, based on an investigation of Darwin's collections in the Sedgwick Museum, Cambridge, England, supplemented by the author's own collections. There are five pages of photographs and 70 bibliographic references.

CHUBB, LAWRENCE JOHN

Geology of the Marquesas Islands. Honolulu, Hawaii: Bernice P. Bishop Museum, 1930. 71 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin no. 68) Paper, \$2.00. 1101

Contents: Introduction. Geographical description. Petrology of the volcanic rocks. Structure. Coral reefs. Summary of geologic history. Literature cited.

Note: A summary of the results of the work carried out by the St. George Expedition of the Scientific Expeditionary Research Association of London between December, 1924 and February, 1925, popular accounts of which have previously been published in Collett's *Sea-girt jungles*, London, 1926, and in Douglas and Johnson's *The South Seas of today*, London, 1926. The present descriptions are based chiefly on the observations made by the expedition, but for the sake of completeness such notes as could be gathered from the writings of other authors on the geology of the islands not visited are also included. There is a list of 55 references cited.

HINDS, NORMAN ETHAN ALLEN

The geology of Kauai and Niihau. Honolulu, Hawaii: Bernice P. Bishop Museum, 1930. 103 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 71) Paper, \$2.00. 1102

Contents: Introduction. Geography of Kauai. Geomorphology. Platform in the Wailua drainage basin. Drainage. Kauai-Niihau volcano. Igneous geology of Kauai dome. Sedimentary deposits. Diastrophic movements. Relative ages of Hawaiian landscapes. Niihau. Bibliography.

Note: A technical report on the morphology and general geology of two of the outermost islands in the Hawaiian archipelago, windward section. Kauai and Niihau lie off the main line of travel in Hawaii and hence have not been visited by many geologists. The present material is based mainly on the author's field work during 1921-1922. There are twelve plates of photographs, a geologic map of Kauai, and a list of 64 references.

HOFFMEISTER, JOHN EDWARD

Geology of Eua, Tonga. Includes Petrography, by Harold L. Alling and Foraminifera by G. Leslie Whipple. Honolulu, Hawaii: Bernice P. Bishop Museum, 1932. 93 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 96) Paper, \$2.00. 1103

Contents: Introduction. Physiography. Rocks and rock structure. Geologic history. Petrography, by Harold L. Alling. Corals from the elevated limestones. Systematic account of species. Eocene Foraminifera, by G. Leslie Whipple. Bibliography.

Note: A report on the findings of the author's expeditions to Eua, an elevated atoll-crowned island at the southern end of the Tongan Archipelago in the South Pacific Ocean. Included are separate reports on the various rocks found on the island and on the living and fossil corals and Foraminifera collected by the expedition. There are 22 plates of photographs and 86 bibliographical references.

LADD, HARRY STEPHEN

Geology of Vitilevu, Fiji. Includes Petrography, by Arthur A. Pegau; Smaller Foraminifera, by Joseph A. Cushman; Larger Foraminifera, by G. Leslie Whipple; Corals, by J. Edward Hoffmeister; Smaller echinoids, by H. L. Hawkins; Decapod crustaceans, by Mary J. Rathbun. Honolulu, Hawaii: Bernice P. Bishop Museum, 1934. 263 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 119) Paper, \$4.00. 1104

Contents: Introduction. Physiography. Stratigraphy. Petrographic study of the rocks of Vitilevu, Fiji: Introduction. Wainimala series. Sambeto series. Viti limestone. Suva formation. Geological history. Geomorphology. Economic geology. List of stations. Paleontology. Smaller Foraminifera from Vitilevu, Fiji. Larger Foraminifera from Vitilevu, Fiji. Fossil corals from Vitilevu, Fiji. Fossil Echinoidea from Vitilevu, Fiji. Molluscoidea. Fossil decapod crustaceans from Vitilevu, Fiji. Vertebrata. Bibliography. Paleontological index.

Note: A detailed summary of the results of two expeditions to Fiji in 1926 and 1928, the primary purpose of which was to work out the geological history of Vitilevu, one of the three

largest islands in the open Pacific, with the aid of detailed paleontological studies. There are 44 plates of photographs and drawings, mostly of fossil shells collected by the expedition, plus 133 bibliographic references.

MARSHALL, PATRICK

Geology of Rarotonga and Atiu. Honolulu, Hawaii: Bernice P. Bishop Museum, 1930. 75 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 72) Paper, \$1.00. 1105

Contents: The Cook Islands. Rarotonga: General features. Historical sketch. Flora. Natural divisions. Igneous rocks. Petrographic descriptions. Geological history. Age. Alkaline rocks in the Pacific. Atiu: Historical sketch. Population. Vegetation. Bird life. Physiographic outline. Coral reef. Makatea. Swamp. Volcanic core. Description of rocks. Geological history. Literature cited.

Note: A summary of the results obtained from field studies made by the author in 1926 covering general geologic features of two of the six islands in the Cook group. There are five plates of photographs and a list of 40 references.

PALMER, HAROLD SCHJOTH

Geology of Lehua and Kaula Islands. Honolulu, Hawaii: Bernice P. Bishop Museum, 1936. 36 p. illus. 22 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. XII, no. 13) Paper, \$0.50. 1106

Note: A brief outline of the structure, lithology, and geologic history of the small, uninhabited islets of Lehua and Kaula, located near the most westerly of the inhabited Hawaiian islands, and composed of the remnants of crescentic rims of tuff craters. Notes on their topography and miscellaneous surface features are included. There is a list of 18 references cited.

STARK, JOHN THOMAS, AND A. L. HOWLAND

Geology of Borabora, Society Islands. Honolulu: Bernice P. Bishop Museum, 1941. 43 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 169) Paper, \$1.00. 1106a

Contents: Introduction. Leeward Islands: Borabora: Location. Topography. Geographic sketch. Historical sketch. Physiographic divisions. Vegetation. General geology. Lava flows. Small dikes. Large dike on Toopua. Origin of the pillow-like structures. Petrography and petrology. Rocks. Geologic history. Literature cited.

Note: The first detailed study of the geology of this island, including an account of the reefs, marine benches, volcanic ridges, volcanic cones, lagoons and bays, origin of the present shore lines, and the geologic history of the area. A 9 x 12" geologic map is included.

WENTWORTH, CHESTER KEELER

Ash formations of the island Hawaii. Honolulu: The Hawaiian Volcano Research Association, 1938. 183 p. illus. 24 cm. (Hawaiian Volcano Observatory of Hawaii National Park and Hawaiian Volcano Research Association. Third special report) Paper, \$3.00. 1106b

Contents: Introduction. Physiography. Nature of pyroclastic processes and products. Distribution and structure of pyroclastic formations on Hawaii. Petrography: Physical and chemical properties. Petrographic descriptions of formations. Pyroclastic history and origin of formations.

Note: A report of an original investigation to determine the areal extent of the various volcanic ash formations on the island of Hawaii, to describe them petrographically, and to develop a means of discriminating and correlating them as key horizons for future studies in the major events of the geologic history. Critical analyses of the effects of weathering on the ash formations, together with systematic tracing from regions of typical expression to others where the features are less typical are offered in order to clarify the stratigraphic relations and historical significance of the various limits.

WENTWORTH, CHESTER KEELER

Geology of the Pacific equatorial islands. Honolulu, Hawaii: Bernice P. Bishop Museum, 1931. 25 p. illus. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. ix, no. 15. Whippoorwill Expedition publication no. 3) Paper, \$1.00. 1107

Note: A brief summary of the geological survey of five small Pacific islands lying near the equator between longitudes 155° and 165° W., by the Whippoorwill Expedition sent by the Bernice P. Bishop Museum in July and August of 1924. The islands surveyed were Palmyra Island, Washington Island, Fanning Island, Christmas Island, and Jarvis Island. No attempt is made to give detailed geologic data for any of these islands, the intent being only to sketch the main topographic and structural features. There are eight photographs.

WILLIAMS, HOWEL

Geology of Tahiti, Moorea, and Maiao. Honolulu, Hawaii: Bernice P. Bishop Museum, 1933. 89 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 105) Paper, \$2.00. 1108

Contents: Introduction. Tahiti. Volcanoes of Tahiti-nui and Tiarapu. Coral reefs and lagoons. Moorea, Maiao. Recent movements of South Pacific islands. Literature cited.

Note: This paper deals with the results of a two months' visit to the Society Islands in December, 1928, and January, 1929. The greater part of the study was devoted to the island of Tahiti, where the work was confined mainly to the coastal regions, particularly to the parasitic tuff cones and to features which indicate recent vertical movement of the island. Climate, geomorphology, volcanic and plutonic rocks, origin of lagoons and passes, and chemical analysis of rocks are among the topics covered. There are eight plates of photographs and a list of 61 references.

United States

BAKER, ARTHUR ALAN, AND OTHERS

Correlation of the Jurassic formations of parts of Utah, Arizona, New Mexico and Colorado, by A. A. Baker, C. H. Dane and J. B. Reeside, Jr. Washington, D.C.: Government Printing Office, 1936. 66 p. illus. 29 cm. (United States. Geological Survey. Professional paper no. 183) \$0.50. 1109

Contents (abridged): Abstract. General features of the stratigraphy of the region. Jurassic formations: Glen Canyon group. San Rafael group. Morrison formation. Regional correlations. Nomenclature. Distribution of the formations and sources of the materials. Conditions of deposition. Age of the formations. Index.

Note: This paper summarizes results obtained in geological field work in the area indicated, and revises the interpretations and correlations of the Jurassic formations of the area as they are affected by these results. A composite correlation diagram is included.

BRADLEY, WILMOT HYDE

Origin and microfossils of the oil shale of the Green River formation of Colorado and Utah. Washington, D.C.: Government Printing Office, 1931. 58 p. illus. 28 cm. (United States. Geological Survey. Professional paper 168) Paper, \$0.60. 1110

Contents: Introduction. Topography and drainage. Structure. Stratigraphy: Lithologic terms used. Wasatch formation. Green River formation. Bridger formation. Relation of the Tertiary formations in the Uinta basin. The oil shale. Microfossils: Previous similar studies. Preparation of thin sections. Appearance of organic matter in thin sections. Flora of the oil shale. Fauna of the oil shale. Interpretation and significance of the microfossils.

Structureless organic matter. Phases of Uinta Lake during the Green River epoch. Index.

Note: A brief monograph which reconstructs in some detail the geologic history of the Green River formation as a whole, with special emphasis on the study of lacustrine sedimentation, together with a fairly complete picture not only of the conditions within the lakes of the area but also of the environment. There are 28 plates of photographs of microfossils.

BURBANK, WILBUR SWETT

Geology and ore deposits of the Bonanza mining district, Colorado, with a section on history and production, by Charles W. Henderson. Prepared in cooperation with the Colorado Metal Mining Fund. Washington, D.C.: Government Printing Office, 1932. 166 p. illus. 29 cm. (United States. Geological Survey. Professional paper 169) Paper, \$2.00. 1111

Contents: General features: Geography. Previous geologic and topographic work in the district. Bibliography. General geology: Pre-Tertiary rocks. Tertiary volcanic rocks. Quaternary deposits. Geologic structure: General features. Structure of the pre-Tertiary rocks. Structure of the Tertiary volcanic rocks. Ore deposits: Production and history. Character and distribution of veins. Content of ore. Structural and textural features of veins. Minerals of the ore deposits. Hydrothermal metamorphism of the wall rocks. Nature of the mineralizing solutions. Origin of the mineralizing solutions. Paragenesis of the primary ores. Change of ore in depth. Geologic relations of the ore deposits. Future exploration in the district. Mines and prospects. Index.

Note: About one-third of this report is devoted to detailed descriptions of typical mines in the district, including production, underground development, geologic features, and general relations of veins and fissures. There is a large map on the scale 1:12,000 showing geologic and topographic features of the surveyed mining claims and underground development in the area, together with a number of smaller maps and charts. The bibliography covers 16 references.

CALKINS, FRANK CATHCART, AND B. S. BUTLER

Geology and ore deposits of the Cottonwood-American Fork area, Utah, with sections on history and production by V. C. Heikes. Washington, D.C.: Government Printing Office, 1943. 152 p. illus. 29 cm. (United States. Geological Survey. Professional paper 201) Paper, \$1.75. 1112

Contents: Introduction. General geology, by F. C. Calkins. History of mining, by V. C. Heikes. Production, by V. C. Heikes. Ore deposits, by B. S. Butler. The mines, by B. S. Butler and F. C. Calkins. Index.

Note: A report summarizing the results of field studies made by the authors during a period of years between 1912 and 1941, representing a systematic geological study of the segment of the Wasatch Mountains that lies opposite the Uinta Range. The geology of this and other adjacent parts of the Wasatch is exceptional for the complexity of its structure and the fullness of its stratigraphic record; it contains, also, the only large intrusive bodies and the only ore deposits of any considerable production in these mountains. About half of the present work is devoted to a detailed description of the mines in the area, including accounts of the genesis of ore deposits, the size and distribution of the veins, and future prospects for the district. There is a bibliography of 26 works and 43 plates of photographs.

CAPPS, STEPHEN REID

Geology of the Alaska Railroad region. Washington, D.C.: Government Printing Office, 1940. 201 p. illus. 23 cm. (United States. Geological Survey. Bulletin 907) Paper, \$1.25. 1112a

Contents: Introduction. History of exploration. Present report. Geography. Geology: Principal features. Kenai-Chugach Mountains. Talkeetna region. Alaska Range. Yukon-Tanana region. Pleistocene and recent geology of the Alaska Railroad region. Economic geology. Index.

Note: A summary in condensed form of the state of knowledge of the geology of the region as of 1940, prepared for the use of those who wish to learn the outstanding facts concerning the geography, geology, and mineral resources of the area without too great an expenditure of time. No attempt is made to discuss in detail the sequence or structure of the rock formations in various parts of the region, and for such information the reader is referred to a list of 77 articles and monographs included in the present paper. A chronological summary is presented of the field work that has been done and there are brief descriptions of the history of exploration, climate, vegetation, animal life, population, routes of travel, agriculture, and of Mount McKinley National Park.

CAPPS, STEPHEN REID

The southern Alaska Range. Washington, D.C.: Government Printing Office, 1935. 101 p. illus. 23 cm. (United States. Geological Survey. Bulletin 862) Paper, \$0.70. 1112b

Contents: Introduction. Previous explorations and surveys. Present investigation. Geography. Geology: General outline. Paleozoic rocks. Paleozoic or early Mesozoic rocks. Mesozoic rocks. Tertiary rocks. Intrusive rocks. Quaternary deposits and history. Mineral resources. Index.

Note: A report of the author's reconnaissance of the geology of the southern Alaska Range which as here defined extends from the Skwentna river and Rainy Pass on the north to Iliamna Lake on the south, and comprises an area of more than 23,000 square miles, of which much was unexplored until 1926, when the surveys described in this paper were begun. The major topographic and geologic features of this mountain area are described, but no attempt at detailed stratigraphy is intended.

CLOOS, ERNST, AND ANNA HIETANEN

Geology of the "Martic overthrust" and the Glenarm series in Pennsylvania and Maryland. New York: The Geological Society of America, 1941. 207 p. illus. 25 cm. (Geological Society of America. Special papers. No. 35) \$3.50. 1113

Contents: Introduction. Acknowledgments. Part I, Structure and fabric of critical areas between Mine Ridge and Potomac river, by Ernst Cloos. Part II, Mineralogy, petrology, and metamorphism of the overthrust area in Lancaster county, by Anna Hietanen. Part III, Metamorphism, structure, and fabric of the Octoraro and Wissahickon schists near Bryn Mawr, Pennsylvania, by Anna Hietanen. Summary and conclusions, by Ernst Cloos. Works to which reference is made. Index.

Note: A detailed study of the geology of the Glenarm series in general and the Wissahickon schist in particular, intended as an aid in settling the controversial problem of the age and genesis of this area. A geologic map of the overthrust area in southwestern Lancaster county, Pennsylvania, is included, as well as many petrofabric diagrams and a chart of the evolution of metamorphic textures and facies in the crystalline rocks of that vicinity.

DEISS, CHARLES FREDERICK

Cambrian stratigraphy and trilobites of northwestern Montana. New York: The Society, 1939. 135 p. illus. 24 cm. (Geological Society of America. Special papers. No. 18) \$1.25. 1114

Contents (abridged): Part I, Stratigraphy: Location of area. Previous work. Detailed stratigraphic sections. Description of formations. Unconformities in northwestern Montana. Age of Cambrian sediments. Correlation of formations. Paleogeography and sedimentation. Part II, Paleontology: General statement. Register of Cambrian fossil localities. Description of genera and species. Literature cited. Index.

Note: A report on the study of the identification, measurement, lithologic characteristics, and fossil contents of the Cambrian sediments in northwestern Montana, with a description of 105 species of trilobites among 21 genera, of which 102 species and 10 genera are new.

GREGORY, HERBERT ERNEST, AND RAYMOND C. MOORE

The Kaiparowits region: a geographic and

geologic reconnaissance of parts of Utah and Arizona. Washington, D.C.: Government Printing Office, 1931. 161 p. illus. 29 cm. (United States. Geological Survey. Professional paper 164) Paper, \$1.05. 1115

Contents: Introduction. Geography. Sedimentary rocks. General sedimentary relations. Permian formations. Triassic formations. Jurassic formations. Cretaceous formations. Tertiary rocks. Quaternary deposits. Igneous rocks. Structure. Physiography: Regional relations. Factors that influence erosion. Relations of topography to geology. Relation of streams to structure. Extent and rate of erosion. Erosion surfaces. Inclosed meanders. Cycles of erosion. Features of valleys. Minor physiographic features. Economic geology: Gold. Copper. Coal. Oil and gas. Index.

Note: A report of a geologic survey of a hitherto little-known and unmapped area between the Henry Mountains and the Kaibab plateau in southern Utah, covering the topography, climate, soil, vegetation, inhabitants, and other geographic features, together with a detailed study of the stratigraphy and geologic structure of the area and the distribution of its mineral resources. A large-scale topographic map and a geologic section map are included.

HENDRICKS, THOMAS ANDREWS, AND OTHERS

Geology and fuel resources of the southern part of Oklahoma coal field. Washington, D.C.: Government Printing Office, 1937-39. 300 p. illus. 23 cm. (United States. Geological Survey. Bulletin no. 874) Paper: Bulletin 874-A, \$0.65; 874-B, \$0.20; 874-C, \$0.65; 874-D, \$0.70. 1116

Contents: Part I, The McAlester district, Pittsburg, Atoka, and Latimer counties, by Thomas A. Hendricks (Bulletin 874-A). Part II, The Lehigh district, Coal, Atoka, and Pittsburg counties, by M. M. Knechtel (Bulletin 874-B). Part III, The Quinton-Scipio district, Pittsburg, Haskell, and Latimer counties, by C. H. Dane and others (Bulletin 874-C). Part IV, The Howe-Wilburton district, Latimer and Le Flore counties, by Thomas A. Hendricks (Bulletin 874-D).

Note: The stratigraphy, geologic structure, mineral resources including coal, petroleum and natural gas, of the areas considered. The four parts are paged continuously but may be obtained only in separate parts. Numerous large-scale geologic maps are included.

HINDS, NORMAN ETHAN ALLEN

Contributions to Pre-Cambrian geology of western North America: I. Ep-Archean and Ep-Algonkian intervals in western North America. II. Uncompahgran and Beltian deposits in western North America. Washington: Carnegie Institution of Washington, 1936. 136 p. illus. 25 cm. (Carnegie Institution. Publication no. 463) Paper, \$2.50; cloth, \$3.00. 1117

Contents (abridged): Part I, Ep-Archean and Ep-Algonkian intervals in western North America: Introduction. Definition of terms. The Archean-Algonkian unconformity. The Ep-Archean surface. Pre-Algonkian weathering. Evolution of the Ep-Archean peneplain. Inter-Algonkian deformation and erosion. The Ep-Algonkian landscape. Post-Algonkian deformation. Evolution of the Ep-Algonkian peneplain. Summary. Part II, Uncompahgran and Beltian deposits in western North America: Introduction. Uncompahgran formations. Beltian deposits. Post-Beltian peneplanation. Beltian basic igneous rocks. Cambrian down-warps. Correlation of Uncompahgran groups. Use of the term Algonkian. Archean type and Algonkian type. Correlation chart of certain pre-Cambrian formations in western North America. Summary.

Note: Part I is a summary of field observations by the author in the Grand Canyon and in sections of Arizona, California, Utah, Montana, Alberta, and other parts of the Canadian Rockies. It discusses the nature of the surface upon which Algonkian deposition took place and the history of the districts in the time between the close of Algonkian sedimentation and the invasion of the Cambrian seas. Part II presents the results of later observations of Beltian strata in the Grand Canyon, central Arizona, Death Valley in California, the Wasatch Mountains in Utah, and the San Juan Mountains of Colorado.

HOWARD, ARTHUR DAVID

History of the Grand Canyon of the Yellowstone. New York: The Society, 1937. 159 p. illus. 24 cm. (Geological Society of America. Special papers. No. 6) \$1.50. 1118

Contents (abridged): Part I, The pre-Pleistocene history of Yellowstone Canyon. Part II, Pleistocene history. Part III, Recent history. Summary of conclusions. Selected bibliography on Yellowstone National Park. Index.

Note: A monograph summarizing the author's researches into the physical evolution of a part of the Rocky Mountain structure in Yellowstone Valley and the Big Horn Basin.

KING, PHILIP BURKE

Geology of the Marathon region, Texas. Washington, D.C.: Government Printing Office, 1938. 148 p. illus. 29 cm. (United States. Geological Survey. Professional paper 187) Paper, \$2.50. 1119

Contents: Introduction. Geography. Stratigraphy: General outline. Pre-Cambrian rocks. Cambrian system. Ordovician system. Devonian (?) system. Carboniferous system. Triassic (?) system. Cretaceous system. Quaternary system. Structural geology: General features. Marathon basin. Structural features of the Glass Mountains. Post-Cretaceous structural features. Economic geology. Index.

Note: This report deals with the geology of the Marathon region, which lies in the northern part of Brewster county in western Texas. Particular attention is paid to the geologic features exposed in the Monument Spring and Marathon quadrangles, which extend across the central part of the region. In order to complete the description of the Marathon region some of the stratigraphic and structural features to the north and south of the two quadrangles are also noted. There are 57 illustrations consisting of photographs, charts, sketches, and geologic and structural maps of localities in the area.

LEE, WALLACE, AND OTHERS

Stratigraphic and paleontologic studies of the Pennsylvanian and Permian rocks in north-central Texas, by Wallace Lee, C. O. Nickell, James S. Williams, and Lloyd G. Henbest. Austin, Texas: The University of Texas, 1938. 252 p. illus. 22 cm. (The University of Texas publication no. 3801, January 1, 1938) Paper, \$1.50. 1120

Contents: Stratigraphy of the Cisco group of the Brazos basin, by Wallace Lee. Stratigraphy of the Canyon and Cisco groups on Colorado river in Brown and Coleman counties, Texas, by C. O. Nickell. Comparison of Brazos and Colorado river sections, by Wallace Lee. Carboniferous invertebrate fossils (except fusulinids) from north-central Texas, by James Steele Williams. Notes on the ranges of Fusulinidae in the Cisco group (restricted) of the Brazos river region, north-central Texas, by Lloyd G. Henbest. Index.

Note: A technical summary of the results of a geologic survey of the Cisco group along the Brazos river in Texas, showing the relations of the discontinuous limestone beds to the sandstones and to the many unconformities of the area. A number of facts of considerable significance for working out the structure and character of oil-bearing sand bodies are also presented. There are several areal and correlation maps of the region.

LEITH, CHARLES KENNETH, AND OTHERS

Pre-Cambrian rocks of the Lake Superior region; a review of newly discovered geologic features, with a revised geologic map, by C. K. Leith, Richard J. Lund, and Andrew Leith. Washington, D.C.: Government Printing Office, 1935. 34 p. illus. (part col.) 28 cm. (United States. Geological Survey. Professional paper 184) Paper, \$0.60. 1121

Contents: Introduction. Principal changes from the old mapping. General succession. Keweenaw series. New correlation of the Upper and Middle Huronian groups. Age of the Knife Lake series and its equivalents. Three periods of granitic intrusion. Origin of the iron-formation. Oxidation of the iron-formation and concentration to ore. Bibliography. Index.

Note: The authors have attempted in the present survey to assemble as much of the new information and knowledge of the geology of the pre-Cambrian rocks of the Lake Superior region as can be summarized without loss of accuracy, and to give the reader a birdseye view of the geology as seen in the light of all studies made there up to 1935. Detailed descriptions are not presented, and the emphasis is upon the major problems of correlation. A revised geologic map of the region, with cross sections, accompanies the report, and principal changes are summarized.

LEVERETT, FRANK

Quaternary geology of Minnesota and parts of adjacent states. With contributions by Frederick W. Sardeson. Investigations made in cooperation with the Minnesota Geological Survey. Washington, D.C.: Government Printing Office, 1932. 149 p. illus. 29 cm. (United States. Geological Survey. Professional paper 161) Paper, \$1.25. 1122

Contents: Physical features and rock formations of Minnesota. Outline of the geography and geology of Minnesota. The oldest drift (Nebraskan). Kansan drift. Illinoian or old red drift. Iowan drift. Wisconsin red drift. Wisconsin gray drift. Grantsburg sublobe of Wisconsin gray drift, by F. W. Sardeson. Minor moraines of Wisconsin gray drift in Minnesota River basin. Moraines of Red River basin. Glacial Lake Agassiz. Pleistocene fossils. Development of present Mississippi drainage. Index.

Note: The area whose geologic features are here described embraces the state of Minnesota and adjacent parts of Wisconsin, Iowa, and North and South Dakota, which have a glacial history closely bound up with that of Minnesota. The area is shown to be one of considerable complexity of glacial movements in the last or Wisconsin glacial stage, as well as a succession of glaciations in the preceding stages. The limits of several glacial drifts are outlined, and the several moraines or morainic systems, eskers, till plains, striae, and outwash plains are described. The complexities of drainage at the south end of glacial Lake Agassiz are discussed and illustrated by topographic maps. There are four large-scale geologic maps of the area.

LOVE, DAVID

Geology along the southern margin of the Absaroka range, Wyoming. New York: The Society, 1939. 134 p. illus. 25 cm. (Geological Society of America. Special papers. No. 20) \$1.50. 1123

Contents (abridged): General stratigraphy. Summary of formations. Pre-Cambrian rocks. Cambrian rocks. Ordovician rocks. Devonian rocks. Mississippian and Lower Pennsylvanian rocks. Pennsylvanian rocks. Permian rocks. Triassic rocks. Jurassic rocks. Cretaceous rocks. Eocene rocks. Oligocene rocks. Basic intrusives. Alluvial deposits. Structural geology. Geologic history. Works to which reference is made. Index.

Note: This paper describes the geology of an area of approximately 430 square miles in northwestern Wyoming and includes the southern margin of the Absaroka range, the western end of the Owl Creek Mountains, and the northwestern part of the Wind River basin. A geologic map of the area is included. The stratigraphy, structure, lithology, and paleontology of the 15,500 feet of post-pre-Cambrian rocks are studied.

LOVERING, THOMAS SEWARD

Geology and ore deposits of the Breckenridge mining district, Colorado. Washington, D.C.: Government Printing Office, 1934. 64 p. illus. 29 cm. (United States. Geological Survey. Professional paper 176) Paper, \$1.00. 1124

Contents: Introduction. General geology. Geologic history. Mineralogy. Ore deposits. Mine descriptions. Guides to ore and future of the district. Production of mines in the district. Index.

Note: The present study records new data and reviews the geology of the area in the light of extensive developments and enlargements of several of the mines in the district, presenting at the same time additional information gained in the surrounding region. Maps of the most productive part of the district, showing the geology of the bedrock surface, are included. The stratigraphy has been revised and the new subdivisions of the formations, shown on a separate map, give a more detailed picture of the structure than hitherto available. The problem of the enrichment of lead is considered, and experimental work on the solution and precipitation of lead compounds is presented.

LOVERING, THOMAS SEWARD

Geology and ore deposits of the Montezuma quadrangle, Colorado. Washington, D.C.: Government Printing Office, 1935. 119 p. illus. 29 cm. (United States. Geological Survey. Professional paper 178) Paper, \$1.25. 1125

Contents: Introduction. Descriptive geology: Algonkian (?) formations. Algonkian system. Sedimentary formations. Cretaceous (?) and Tertiary igneous rocks. Structure. Geologic history. Economic geology: Mineralogy. Ore deposits. Future of the district. History of mining. The mines. Index.

Note: A summary of the results of the author's field work in mapping the surface geology and underground features of the area during 1926-29. About a third of the paper is concerned with detailed descriptions of the structure and extent of the various mines in the area, including analyses of ores, types and distribution of veins, suggestions for prospecting, and the mining history of the neighborhood. A number of plans of various mines are given, together with topographic and geologic maps of the area.

McKEE, EDWIN DINWIDDIE

The environment and history of the Toroweap and Kaibab formations of northern Arizona and southern Utah. Washington, D.C.: Carnegie Institution of Washington, 1938. 268 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 492) Paper, \$3.00; cloth, \$4.00. 1126

Contents: Part I, Introduction. Sequence of sediments and unconformities. Sedimentary types in the Toroweap and Kaibab formations. Ecology, physical geography, and climatology. Stratigraphy and paleontology. Description of measured sections. Summary. Bibliography of the Toroweap and Kaibab formations. Part II, Systematic description of brachiopods. Index to fossils.

Note: Additional data on the distribution and character of these rocks are given and a new classification embodying subdivision of the group into formations, members, phases, and facies is proposed in this monograph. Both vertical and lateral changes in fauna and lithology are taken into consideration, and are given more suitable prominence by this revision. Part II consists of a systematic description of the brachiopods of the Toroweap and Kaibab formations.

MATTHES, FRANÇOIS ÉMILE

Geologic history of the Yosemite Valley. Washington, D.C.: Government Printing Office, 1930. 137 p. illus. (part col.) 29 cm. (United States. Geological Survey. Professional paper 160) Paper, \$1.10. 1127

Contents: Geographic sketch of the Yosemite region and the Sierra Nevada. Early history of the Yosemite Valley. Glacial history of the Yosemite Valley: Glaciation of the Sierra Nevada. Evidences of glacial action in the Yosemite region. Evidences of an earlier ice invasion. Ancient glaciers of the Yosemite region. Transformation of the Yosemite Valley by the ice. Postglacial history of the Yosemite region: Filling of the glacier lakes. Filling of Lake Yosemite. Production of rock waste in the Yosemite Valley. Evolution of cliff sculpture. Summary and conclusions. Appendix: The granite rocks of the Yosemite region, by F. C. Calkins. Bibliography. Index.

Note: This paper offers a detailed study of the geologic history of the Yosemite Valley, with emphasis upon the problem of to what extent the valley is a product of glacial action and a product of stream erosion. The principal result of the investigations upon which this report is based is the determination within

narrow limits of the preglacial depth of the Yosemite Valley and of other facts concerning its preglacial development which permit fairly definite estimates of the proportionate shares of work performed by stream and by glacier. The investigations comprise a detailed survey of the glacial and geomorphologic features and an intensive study of the valley's rock formations. The bibliography contains 63 references and there are numerous photographs, maps, and charts.

MERRIAM, CHARLES WARREN

Devonian stratigraphy and paleontology of the Roberts Mountains region, Nevada. New York: The Society, 1940. 114 p. illus. 25 cm. (Geological Society of America. Special papers. No. 25) \$1.00. 1128

Contents (abridged): Redefinition and description of formations. Lone Mountain section. Sections of Devils Gate and Modoc Ridge areas. Paleozoic sections of the Roberts Mountains. Devonian sections in Devonian-Carboniferous boundary in the central Great Basin. California Devonian. Faunal zones of the Nevada and Devils Gate formations. Correlation of principal Devonian faunal zones in western America. Description of species. Register of localities. Works to which reference is made. Index.

Note: The aim of this paper is to document the data on field relations of the Devonian rocks and establish the faunal succession as found in this region. Some general discussion of geologic structure is incorporated, and a map of the area is given showing distribution of outcrops and deposits.

MOFFIT, FRED HOWARD

Geology of the Chitina valley and adjacent area, Alaska. Washington, D.C.: Government Printing Office, 1938. 137 p. illus. 23 cm. (United States. Geological Survey. Bulletin 894) Paper, \$1.25. 1128a

Contents: Abstract. Introduction. Previous work. Geography. Descriptive geology: Outline of the geology. Geologic map. Bedded rocks. Intrusive rocks. Geologic history. Economic geology: Mineral deposits. Age of mineralization. Character of deposits. Summary. Index.

Note: The purpose of this paper is to bring together information about the geology and mineral resources of the Chitina valley and bordering areas which is scattered through a considerable number of earlier reports, most of which are now out of print; to make corrections which later work has shown to be required in the assignment of formations to positions in the stratigraphic column; and to add new information concerning the geology and mineral resources which have been collected in recent years. Topographic and geologic maps are included and there is a list of 21 papers dealing with the geology and mineral resources of the region.

ROBERTS, JOSEPH KENT

Annotated geological bibliography of Virginia. Published by the Alderman Library, Charlottesville, Virginia. Richmond: The Dietz Press, 1942. 726 p. 23 cm. (University of Virginia bibliographical series. No. 2) Cloth, \$7.50; paper, \$5.00. 1128b

Contents: Errata. Introduction. Foreword. Purpose, scope, and preparation of the bibliography. Acknowledgments. Rise and development of geological thought in Virginia: The periods of geological progress: Colonial period, up to 1835. Rogers period, 1835-1880. Fontaine-Campbell period, 1880-1910. Watson period, 1910 to the present. Geology in the college curriculum of Virginia. Biographical sketches of Virginia geologists: William Barton Rogers. John Lyle Campbell. William Henry Ruffner. Jedekiah Hotchkiss. William Morris Fontaine. Charles Rufus Boyd. Henry Donald Campbell. Thomas Leonard Watson. Thomas Kennerly Harnsberger. Libraries in which references may be consulted. List of serials examined for abstracts. Titles and references with abstracts. Addendum. General index (subjects and citations).

Note: The main body of this bibliography of Virginia geology lists and abstracts 2567 books and articles by 938 authors, exclusive of anonymous writers. Location of copies in Virginia libraries is indicated.

SCHLAIKJER, ERICH MAREN

Contributions to the stratigraphy and palaeontology of the Goshen Hole area, Wyoming. Cambridge, Mass., 1935. 189 p. illus. 24 cm. (Harvard College. Museum of Comparative Zoölogy. Bulletin. Vol. LXXVI, nos. 1-4) Paper, Part 1, \$0.50; Parts 2-3, each \$0.75; Part 4, \$3.00.

1129

Contents: I, A detailed study of the structure and relationships of a new zalambdodont insectivore from the Middle Oligocene. II, The Torrington member of the Lance formation and a study of a new triceratops. III, A new basal Oligocene formation. IV, New vertebrates and the stratigraphy of the Oligocene and Early Miocene.

Note: In this series of articles the author has described the Goshen Hole area, a region including about 1500 square miles in southeastern Wyoming which presents splendid and abundantly fossiliferous outcrops of the Lance, Chadron and Brule formations and a Lower Miocene formation, as well as a new pre-Chadron post-Uinta formation. In addition he has described the several formations and their faunas and has reported on several of the most interesting fossils discovered in this area during the preceding three years. The articles are well illustrated and are accompanied by 56 plates.

SMITH, PHILIP SIDNEY

Areal geology of Alaska. Washington, D.C.: Government Printing Office, 1939. 100 p. illus. 29 cm. (United States. Geological Survey. Professional paper no. 192) \$1.25.

1130

Contents (abridged): Abstract. Introduction. Sedimentary rocks: Pre-Paleozoic, Paleozoic, Mesozoic, Cenozoic. Igneous rocks: Paleozoic or older volcanic rocks. Mesozoic volcanic rocks. Tertiary to recent volcanic rocks. Intrusive rocks. Correlation chart. Index.

Note: A description of the general kinds and areal distribution of the major subdivisions of the different geologic formations which make up the visible rocky crust of the earth in Alaska. The study points out what is not yet known so that new research work may be encouraged. A large areal geologic map and several geographic maps are included.

STOCKDALE, PARIS BUELL

Lower Mississippian rocks of the east-central interior. New York: The Society, 1939. 248 p. illus. 24 cm. (Geological Society of America. Special papers. No. 22) \$2.00.

1131

Contents (abridged): Part I, Introduction: Region and rocks studied. Lithologic and faunal relations. Part II, Review of latest writings. Part III, Stratigraphy: Terminology. Lower Mississippian stratigraphy in states adjoining Indiana, Kentucky, and Ohio. Group as a whole; identification, thickness and general characteristics. Stratigraphic boundaries. Mississippian units of pre-New Providence age. New Providence formation. Brodhead formation. Floyds Knob formation. Muldraugh formation. Summary. Part IV, Selected bibliography. Index.

Note: A summary of the essential elements in the stratigraphy of the entire lower Mississippian group throughout the east-central interior, suggesting nomenclature and relations in the light of connected field studies, particularly in Indiana, Kentucky, and Ohio. Errors in earlier investigations are pointed out and new correlations shown in diagrams.

WANLESS, HAROLD ROLLIN

Pennsylvania correlations in the eastern interior and Appalachian coal fields. New York: The Society, 1939. 130 p. illus. 24 cm. (Geological Society of America. Special papers. No. 17) \$1.25.

1132

Contents (abridged): Scope of study. Methods of correlation: continuous tracing, key beds, similarity in sequence. Difficulties of correlation. Correlations in the eastern interior coal basin. Correlations in the Appalachian basin. Correlations between the basins. Summary. Glossary. Works to which reference is made. Index.

Note: This paper represents the results of field studies of Pennsylvanian stratigraphy in Illinois, Indiana, and parts of eastern and western Kentucky, Virginia, southern Ohio, and southwestern West Virginia. Correlations are shown by diagrams based on outcrops studied by the writer, published outcrop sections, and diamond drill core records for diagnostic key beds in the areas indicated.

WESTGATE, LEWIS GARDNER, AND ADOLPH KNOFF

Geology and ore deposits of the Pioche district, Nevada. Washington, D.C.: Government Printing Office, 1932. 79 p. illus. (part col.) 29 cm. (United States. Geological Survey. Professional paper 171) Paper, \$0.85.

1133

Contents: Part I, General geology, by Lewis G. Westgate: Introduction. Geology: Sedimentary formations. Igneous rocks. Contact metamorphism, by Joseph L. Gillson. Structure. Part II, Economic geology, by Adolph Knopf: General features of the ore deposits. Oxidation and water level. Mineralogy. Veins in quartzite. Ore bodies in granite porphyry. Replacement deposits in carbonate rocks. Silver-bearing jasperoid at Silverhorn. Genesis of the ore deposits. Summary and conclusions. The mines. Index.

Note: A report of the results of the field work done in the summers of 1922, 1923, 1924, and 1926. About a third of the paper is devoted to a description of the various mines in the area, including general features, details of the ore beds and veins, and related data. There are six pages of photographs, several maps, and a bibliography of 14 publications bearing on the geology of the district.

WILLIAMS, JAMES STEELE

Stratigraphy and fauna of the Louisiana limestone of Missouri. Prepared in cooperation with the Missouri Geological Survey and Water Resources. Washington, D.C.: Government Printing Office, 1943. 133 p. illus. 29 cm. (United States. Geological Survey. Professional paper 203) Paper, \$0.50.

1134

Contents: Introduction. Stratigraphy. Composition of the limestone. Economic uses and possibilities. Structure. Stratigraphic paleontology. Age and correlation. Source of the Louisiana fauna. Paleogeographic interpretations. Conditions of deposition. Descriptive paleontology. Bibliography. Index.

Note: An attempt to give a more complete account than has hitherto been available of the stratigraphy and fauna of the Louisiana limestone, to examine briefly its composition and economic possibilities, to determine its relation to other formations of the same approximate age, and to fit it into its logical place in the geological history of the region in which it occurs. The Louisiana limestone was not mapped in detail, but every known outcrop in Missouri was examined and the fossils which were collected from nearly all fossiliferous localities and horizons are described and figured in the present paper. The bibliography contains 180 articles largely limited to stratigraphic or economic aspects published prior to 1934, and additional references on descriptive paleontology are given in footnotes in the text.

WILMARTH, MARY GRACE

Lexicon of geologic names of the United States (including Alaska). (Also includes the names and ages, but not the definitions, of the named geologic units of Canada, Mexico, the West Indies, Central America, and Hawaii.) Washington, D.C.: Government Printing Office, 1938. 2 v. 23 cm. (United States. Geological Survey. Bulletin 896) Paper, \$2.50.

1135

Note: A comprehensive lexicon in one alphabetical order providing a ready reference for the geologist to the lithology, thickness, age, underlying and overlying formations, and type locality of geologic formations in the regions indicated in the title. Each definition begins with the bibliographical citation of the report on which the definition is based. Due to the fact that many geologic names have been redefined, some of them several times, during the history of their acceptance, the work contains more than one

entry or definition for many of the names listed, accompanied by brief mention of divergent views regarding their usage. Definitions and redefinitions are given of only the units found in the United States and Alaska, but the names and current age designations of the geologic units of the continent of North America and Hawaii are also listed, together with citations to the publications in which they were first defined. A few widely used paleontologic names by which some units have been designated have also been listed along with the geographic names by which they are now known. Names and age assignments in current use by the United States Geological Survey are printed in bold-face type.

WOODWORTH, JAY BACKUS, AND EDWARD WIGGLESWORTH

Geography and geology of the region including Cape Cod, the Elizabeth Islands, Nantucket, Marthas Vineyard, No Mans Land and Block Island. With thirty-eight plates. Cambridge, Mass.: Museum of Comparative Zoology, 1934. 322 p. illus. 31 cm. (Museum of Comparative Zoology at Harvard College. Memoirs. Vol. LII). Paper, \$15.00. 1135a

Contents: Part I, Outline of the geography and geology of the region, by J. B. Woodworth: Introduction. Topography. General geology. Summary of the geological history of the region. Mineral resources. Part II, Geology of particular areas: Geology of Nantucket and adjacent islands, by J. B. Woodworth. Geology of Marthas Vineyard, by Edward Wigglesworth, with notes by J. B. Woodworth. Geology of No Mans Land, by J. B. Woodworth. Geology of Block Island, by J. B. Woodworth. Part III, Geology of Cape Cod and the Elizabeth Islands, by J. B. Woodworth: Geology of Cape Cod. Geology of the Elizabeth or Gosnold Islands. Plates.

Note: This descriptive volume was published after the death of its senior author. It is largely based upon field work done in the summers of 1914 and 1915. The work contains bibliographies, figures in the text, photographs, and geologic maps.

Mineralogy

DAKE, HENRY CARL, AND OTHERS

Quartz family minerals; a handbook for the mineral collector, by H. C. Dake, Frank L. Fleener and Ben Hur Wilson. New York: Whit-tlessey House, McGraw-Hill Book Company, Inc., 1938. 304 p. illus. 21 cm. \$2.50. 1135b

Contents: Why know quartz? The historical lore of quartz. The way to quartz. The matter of crystallization. The quartz crystal. The crystalline forms of quartz. The massive forms of quartz. The intermediary forms of quartz. The crypto-crystalline and amorphous forms of quartz. Agate-chalcedony. Geodes and thunder eggs. Unusual quartz types. The opal. Silicification and petrified forests. The art of cutting quartz gems. Appendix. Index.

Note: Gives the amateur and the student definite information concerning typical varieties of quartz, its location and composition, its place in history and economics, and the proper methods of cutting and polishing. The authors have attempted to check from original sources as many as possible of the statements made. Selected references and topics are given in the appendix.

DANA, JAMES DWIGHT

Dana's Manual of mineralogy, revised by Cornelius S. Hurlbut. Fifteenth edition. New York: John Wiley & Sons, Inc., 1941. 480 p. illus. (part col.) 23 cm. \$4.00. 1136

Contents: Crystallography: Introduction. Symmetry. Crystal notation. Definitions of crystallographic terms. Isometric system. Hexagonal system. Tetragonal system. Orthorhombic system. Monoclinic system. Triclinic system. Twin crystals and crystalline aggregates. Physical mineralogy: Cleavage, parting, and fracture. Hardness. Tenacity. Specific gravity. Properties depending upon light. Electrical and magnetic properties. Chemical mineralogy: Chemical classes. Derivation of a chemical formula. Relation of

chemistry to crystallography. Instruments. Reagents, and methods of testing. Tests for the elements. Descriptive mineralogy: Introduction. Native elements. Sulfides. Sulfo salts, oxides. Halides. Carbonates, nitrates and borates. Phosphates, vanadates, arsenates. Sulfates. Chromates. Tungstates, molybdates, uranates. Silicates. Occurrence and association of minerals: rocks and rock-forming minerals; veins and vein minerals. Mineral uses. List of minerals for a collection. Determinative mineralogy: Introduction. Determinative tables. Minerals listed according to increasing specific gravity. Indexes.

Note: This book is designed to meet the practical needs of the geologist, mineralogist, engineer, chemist, and beginner in mineralogy. Omitting superfluous data, it describes, classifies, and correlates the different mineral species. The fifteenth edition features particularly a mineral index, which gives in one line the principal properties of each mineral. A new section called "mineral uses" replaces the former section which listed the minerals according to elements. It covers not only the ores of the minerals but also the useful non-metallic minerals. The section on crystallography has been thoroughly revised.

DANA, JAMES DWIGHT, AND OTHERS

The system of mineralogy of James Dwight Dana and Edward Salisbury Dana, Yale University, 1837-1892. Seventh edition, entirely rewritten and greatly enlarged by Charles Palache, Harry Berman, and Clifford Frondel. Volume I, Elements, sulfides, sulfosalts, oxides. New York: John Wiley & Sons, Inc., 1944. 834 p. 23 cm. \$10.00. 1137

Contents: Introduction. Native elements. Sulfides, including selenides, tellurides. Sulfosalts. Simple oxides. Oxides containing uranium, thorium, and zirconium. Hydroxides and oxides containing hydroxyl. Multiple oxides. Multiple oxides containing columbium, tantalum, and titanium. Index.

Note: The present edition of this classical reference work represents a considerable revision and enlargement of the sixth edition, which appeared in 1892. There are numerous changes in scope and presentation. Some of these changes are the inclusion of a new mineral classification based on crystal chemistry, a new elastic series of classification numbers for species, revised morphological elements based on the structural unit cell, a new form of presentation of crystallographic data, revision of specific gravities, and expansion and annotation of the references given throughout the text. Volume II, Halides, carbonates, sulfates, borates, phosphates, arsenates, etc., and Volume III, Silica, silicates are in preparation.

ENGLISH, GEORGE LETCHWORTH

Descriptive list of the new minerals, 1892-1938, containing all new mineral names not mentioned in Dana's System of mineralogy, sixth edition, 1892. New York: McGraw-Hill Book Company, Inc., 1939. 258 p. 23 cm. \$3.00. 1138

Note: This list is designed to save the busy mineralogist the hitherto necessary labor of hunting through much literature to find descriptions of new minerals. It includes all new English names in the following publications: Appendices I, II, III (1899-1915) of *Dana's System of mineralogy*, sixth edition, New York, 1892; *Dana's Textbook of mineralogy*, fourth edition, New York, 1932; *The American mineralogist*, volumes 1 to 23 (no. 6), 1916 to June 30, 1938; *The Mineralogical magazine*, volumes 8 to 24 (no. 161), 1888 to June 30, 1938; *Mineral abstracts*, volumes 1 to 7 (no. 6), 1920 to June 30, 1938; and *Chemical abstracts*, volumes 1 to 32, June 20, 1938. Wherever stated in the foregoing literature, the following items are given in the present work: references, crystal system, form, color, hardness, specific gravity, chemical composition, chemical formula, prominent localities, and other related data. The minerals are listed in one alphabetical order plus a short appendix of recent changes in spelling and definition.

ENGLISH, GEORGE LETCHWORTH

Getting acquainted with minerals. With 258 illustrations. New York: McGraw-Hill Book Company, Inc., 1934. 324 p. illus. 23 cm. \$2.50. 1139

Contents: Part I, About minerals in general: Why study minerals? How to collect minerals. Why buy minerals and which ones? Of what is a mineral made? Hardness, or the meaning of a scratch. Tenacity, or the way a mineral holds together. Crystals—the flowers of the mineral kingdom. Charming isometric crystals. Four groups of crystals. Remarkable six-sided crystals. The pranks of crystals. How and where crystals occur. How minerals break—cleavage and fracture. The wonderful structure of minerals. Mineral mimics. Marvelous contacts of light with minerals. “Black light” and other color phenomena. Electrical and magnetic phenomena. Why minerals vary in weight. What to do next. Part II, Description of minerals. Part III, Description of rocks. Appendixes. Index.

Note: An introduction to the science of mineralogy for the layman, presented in a simple and interesting manner without sacrificing scientific accuracy. No previous knowledge of chemistry, physics, or geometry is assumed, although such facts and theories in these sciences which are essential to the understanding of the mineralogical topics are treated in sufficient detail. The book stresses the physical properties of minerals as a means to their identification and outlines simple tests and methods of observation, while more difficult procedures are mentioned as goals to be reached by more advanced study if desired. A table of identification properties and a pronouncing vocabulary are given in the appendixes.

GEORGE, RUSSELL D.

Minerals and rocks, their nature, occurrence, and uses. New York: D. Appleton-Century Company, Incorporated, 1943. 595 p. illus. 23 cm. (Century earth science series; K. F. Mather, editor) \$6.00. 1140

Contents (abridged): Metallic elements and minerals. Non-metallic elements and minerals. Rock-making minerals. Determinative mineralogy. The common rocks. Appendix. Glossary. Index.

Note: A textbook for use in college courses on mineralogy and petrology, the purpose being to present a general view of the increasing number and volume of earth materials which have become fundamental to industry today. The basis of mineral classification used is the element, and all the economically useful or potentially useful minerals containing the same element are treated together in order of importance. Tabular arrangements are given of physical and chemical properties, mode of occurrence, identifying tests, and uses. There are 48 plates of photographs which considerably augment the text descriptions.

KRAUS, EDWARD HENRY, AND CHESTER BAKER SLAWSON

Gems and gem materials. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1941. 287 p. illus. 23 cm. \$3.00. 1141

Contents: Introduction. Part I, Crystal forms: Physical properties. Optical properties. Chemical properties. Formation and occurrence of gem minerals. Cutting and polishing of gems. The naming of gems. Manufactured gems. Metals used for gem mountings. Part II, Description of individual gems. Part III, Classification of gem materials according to various properties: Crystal form. Hardness. Specific gravity. Color. Miscellaneous physical properties. Optical character. Mean index of refraction and birefringence. Dispersion. Pleochroism. Composition. Summary of properties. Index.

Note: This text was prepared from a college course of lectures in precious stones and is designed for students of this branch of mineralogy as well as for those engaged in the sale of gems and gem materials. The forms, properties, formation, and occurrence of gems are discussed and sections are devoted to manufactured gems and gem mountings. The fourth edition is textually identical with the third, the only change being the omission of the colored plates which appeared in the earlier edition.

KRAUS, EDWARD HENRY, AND OTHERS

Mineralogy: an introduction to the study of minerals and crystals, by Edward Henry Kraus, Walter Fred Hunt, and Lewis Stephen Ramsdell. Third edition. New York: McGraw-Hill Book Company, Inc., 1936. 638 p. illus. 23 cm. \$5.00. 1142

Contents: Introduction. Crystallography. Cubic system. Hexagonal system. Tetragonal system. Orthorhombic system. Monoclinic system. Triclinic system. Compound crystals. Physical properties. The polarizing microscope. Crystal structure and X-ray analysis. Chemical properties. Formation and occurrence of minerals. Qualitative blowpipe methods. Descriptive mineralogy. Gems and precious stones. Classification of minerals according to elements. Glossary. Tabular classification of the 32 classes of symmetry. Tables for the determination of minerals. Index.

Note: A college textbook for beginning students in which the subject is presented in a direct and simple manner. The essentials of the various phases of the science have been treated so that a single book may serve the needs of the average student. The conventional line drawings have been superseded to a large extent by photographs of crystal models, natural crystals, and minerals, obtained from the various collections of the University of Michigan. The most notable changes in the third edition consist of the addition of new material to the chapters on physical properties, the polarizing microscope, crystal structure and X-ray analysis, and occurrence of minerals. The practical applications of minerals in industry have been stressed and the statistics brought up to date as of 1936.

LEONARD, LOUIS FRANKLIN

An outline of mineralogy. Ann Arbor, Mich.: Edwards Brothers, Inc., 1939. 88 p. 27 cm. Paper, \$2.50. 1142a

Contents (abridged): Minerals arranged according to groups. Alphabetical arrangement of minerals. Mineral groups: Elements. Sulphides and arsenides. Oxides. Hydroxides. Aluminates, ferrites, and borates. Haloids. Carbonates. Sulphates and tungstates. Phosphates. Silicates. Description of the geological occurrences of minerals. Tables.

Note: Presents in outline and tabular form the more important information needed by the student of elementary mineralogy. Intended for use with any standard textbook of mineralogy. Of value also as a reference guide to the geologist, prospector, mining engineer, and chemist. There are 13 tables of mineralogical data.

ROGERS, AUSTIN FLINT

Introduction to the study of minerals; with a section on Microchemical analysis, by Lloyd W. Staples. Third edition. New York: McGraw-Hill Book Company, Inc., 1937. 626 p. illus. 23 cm. \$5.00. 1143

Contents (abridged): The morphological, physical, optical, and chemical properties of materials. The description of important minerals and mineraloids. The occurrence, association, and origin of minerals, including rocks. The determination of materials by chemical and optical tests. Appendix. Index and glossary.

Note: An introductory textbook and reference book for the student of mineralogy, for use in the field and in the classroom. Includes a discussion of crystallography, blow-pipe analysis, descriptive and determinative mineralogy, plus a descriptive list of minerals giving the form, properties, composition, and occurrence of each mineral. The third edition includes new material on crystallography, the chemical properties of materials, additional descriptions of minerals and mineraloids, and new illustrations.

SCHALLER, WALDEMAR THEODORE

The crystal cavities of the New Jersey zeolite region. Washington, D.C.: Government Printing Office, 1932. 90 p. illus. 23 cm. (United States. Geological Survey. Bulletin 832) Paper, \$0.45. 1143a

Contents: Introduction. Geology. Chemistry. Mineralogy. Crystal cavities: Occurrence. Varieties. Rectangular cavities. Lamellar cavities. Rhombic cavities. Miscellaneous cavities. Babingtonite as the original mineral of the cavities. Index.

Note: An attempt to solve the problem of the origin of the regular, crystal-shaped cavities which occur at certain places in some of the rocks in the zeolite region of north-central New Jersey. The question of the original mineral or minerals of these cavities is discussed with reference to their crystallographic form and mineralogical sequence. Thirty-two plates of photographs are included.

ZIM, HERBERT SPENCER, AND ELIZABETH K. COOPER

Minerals, their identification, uses, and how to collect them. New York: Harcourt, Brace and Company, 1943. 368 p. illus. 21 cm. \$3.00. 1144

Contents: Minerals in the earth. The rocks and minerals you collect. Discovering physical properties. Mineral tests. Setting up your collection. Copper. Iron. Aluminum. Lead, tin, and zinc. Other metals. Crystalline quartz. Non-crystalline quartz. Gems. Non-metallic minerals. The rock-forming minerals. Identifying the rocks. Rocks and rock structure. The story of the earth. Finding and mining minerals. Minerals and ourselves. Appendix. Index.

Note: A non-technical treatment for the amateur collector of minerals, particularly those of high-school age with no specialized training but with a budding interest in mineralogy. Tells how to identify, test, and classify minerals, how to start a collection, and where the most likely specimens may be found. The characteristics of many metallic ores and minerals are given in tabular form and important mineral localities throughout the United States are listed in the appendix.

Determinative Mineralogy

EAKLE, ARTHUR STARR, AND ADOLF PABST

Mineral tables for the determination of minerals by their physical properties. Third edition, revised by Adolf Pabst. New York: John Wiley & Sons, Inc., 1938. 73 p. 23 cm. \$1.50. 1145

Note: The species covered by these tables are listed according to streak, color, hardness, luster, structure, specific gravity, and crystallization. The third edition contains about 200 minerals, including the common ones, and others that are rarer. Physical properties are discussed in the text preceding the tables, and an analytical key is furnished. The tables are indexed. For use by the professional mineralogist, the collector, and the amateur, for rapid identification of minerals in the field.

KRAUS, EDWARD HENRY, AND WALTER FRED HUNT

Tables for the determination of minerals by means of their physical properties, occurrences, and associates. Second edition. New York: McGraw-Hill Book Company, Inc., 1930. 266 p. illus. 24 cm. \$3.00. 1146

Contents: Introduction—physical properties. Glossary. Directions for using the tables. General classification and analytical key. Minerals with metallic luster. Minerals with non-metallic luster. Table of minerals arranged according to increasing specific gravity, with chemical composition and other physical properties. Index.

Note: The tables include approximately 250 of the most common minerals, classified into three groups as (1) very common, (2) common, and (3) not common, but important. Name, chemical formula, crystallization structure, luster, transparency, color, hardness, streak, cleavage, fracture, tenacity, specific gravity, characteristics, and associated substances comprise the data given for each mineral listed. The second edition contains a few new minerals not included in the first edition as well as additional material in the Introduction. A table of minerals arranged according to specific gravity has also been added.

LARSEN, ESPER SIGNIUS, AND HARRY BERMAN

The microscopic determination of the non-opaque minerals. Second edition. Washington, D.C.: Government Printing Office, 1934. 266 p. illus. 23 cm. (United States. Geological Survey. Bulletin 848) Paper, \$0.20. 1146a

Contents: Introduction. Methods of determining the optical constants of minerals. Some statistics on the optical properties

of minerals. Tables for the determination of minerals from their optical properties. Index.

Note: This bulletin presents a set of tables for the systematic determination of minerals by their optical constants, describes briefly some methods for the rapid determination of optical constants, gives the results of measurements of the optical constants of more than 500 species for which data were not previously available prior to the first edition, and presents statistics on the optical properties of minerals. The data have been prepared for general use in determinations of minerals by the oil immersion method. In this method the mineral grains are immersed in liquid media whose indices of refraction are known and the comparisons then made. In the second edition the tables have been brought up to date by the inclusion of about 250 new species, and tables have been added assembling the data of some of the mineral groups, including the alunite, barite, calcite, tourmaline, the zeolites, and other groups.

LEWIS, JOSEPH VOLNEY, AND A. C. HAWKINS

A manual of determinative mineralogy, with tables. Fourth edition, revised by A. C. Hawkins. New York: John Wiley & Sons, Inc., 1931. 230 p. illus. 23 cm. \$3.00. 1147

Contents: Properties of minerals: Crystallization. Optical properties. Physical properties. Chemical properties. Physical tables: General classification. Determination by blowpipe tests: Apparatus. Reagents. Blowpipe operations and chemical tests. Reactions of the elements. Blowpipe tables: Laboratory records. General table. Minerals classified according to crystallization and optical constants. Glossary. Abbreviations. Chemical elements. Bibliography. Index.

Note: These tables are intended to furnish names by which minerals may be known, and to lead the reader to acquire a first-hand knowledge of what the mineral really is, both chemically and physically. In the fourth edition, reduction was accomplished in the amount of repetition in the tables for the determination of minerals by their physical properties. A number of minerals formerly included in the blowpipe tables have been eliminated because of their rarity and lack of practical importance. A chapter on optical methods has been included.

ROGERS, AUSTIN FLINT, AND PAUL F. KERR

Optical mineralogy. Second edition. New York: McGraw-Hill Book Company, Inc., 1942. 390 p. illus. 23 cm. \$3.75. 1148

Contents: Part I, Mineral optics: The preparation of thin sections of minerals and rocks. The polarizing microscope. A summary of the properties of light. Refraction. Plane polarized light in minerals. Convergent polarized light. Color, form or aggregation. Observation of mineral fragments. Procedure for the identification of minerals in thin sections. Part II, Descriptions of individual minerals: Elements. Sulfides and sulfosalts. Haloids. Oxids. Aluminates, etc., hydrous oxids. Carbonates. Sulfates. Phosphates. Titanates. Silicates. Mineraloids.

Note: A simplified outline of the methods used in the identification of minerals in thin sections of rocks, covering the principles of optics employed in examining minerals with the polarizing microscope, and giving a concise description of the optical properties of common rock-forming minerals. Simplified tables for use in determination of unknown minerals are included. Formerly published under the title *Thin-section mineralogy*, New York, 1933.

SHORT, MAXWELL NAYLOR

Microscopic determination of the ore minerals. Second edition. Washington, D.C.: Government Printing Office, 1940. 314 p. illus. (part col.) 23 cm. (United States. Geological Survey. Bulletin 914) Paper, \$1.00. 1148a

Contents: Part I, Microscopic technique: The metallographic microscope. Mounting the specimen. Grinding and polishing. Photomicrography of polished sections. Part II, Physical properties and measurements: Color. Hardness. Examination of opaque minerals in polarized light. Electroconductivity. Measurement of reflectivity. Spectroscopic methods. Part III, Etch reactions and determinative table: Etch reactions. Determinative table. Staining tests. Part IV, Microchemical methods: Procedure and apparatus. Methods of applying tests. Sensitivity of microchemical tests. Reagents. Tests made directly on a glass slide. Tests after fusion in loop of platinum wire. Tests requiring special apparatus. A systematic scheme of microchemical

analysis. Outline of microchemical tests. Specific tests for minerals. Indexes.

Note: A text and reference work on the identification of the opaque ore minerals in polished sections. The author has selected those methods which, in his opinion, are most useful and which at the same time do not require elaborate and expensive apparatus. The scheme of identification adopted is based on determination by reflected polarized light, hardness tests, systematic etching, and qualitative microchemical tests. In the description of minerals the data obtained from analyzed material are accompanied by reference to the analyses. There are 14 plates of photomicrographs, some in color, and several tables of physical and chemical data. Improvements in the technique of polishing and new methods of identification developed between 1931 and 1940 are included in the second edition.

SMITH, ORSINO CECIL

Mineral identification simplified; a handbook of the minerals. Los Angeles, Calif.: Wetzel Publishing Company, Inc., 1940. 271 p. illus. 19 cm. \$3.50. 1149

Contents: The table, general discussion. Specific gravity. Hardness scale. Fusibility scale. Solubility in HCL. Color. Streak. Luster. Cleavage. Fracture. Crystal systems. Index of refraction. Testing for chemical constituents. Preliminary tests. Reagents for chemical analysis and blowpiping. Apparatus. Qualitative chemical analysis. Special tests. Blowpipe test tables. Abbreviations. Mineral identification tables. General index. Mineral index.

Note: 2,000 minerals are listed in this handbook for mineralogists and geologists, which attempts to include all minerals mentioned in the literature up to January 1, 1940. The first half of the book discusses common mineral tests and their application, while the second half consists of an identification table based primarily on the characteristics of hardness and specific gravity.

WELLS, ROGER CLARK

Analyses of rocks and minerals from the laboratory of the United States Geological Survey, 1914-1936. Washington, D.C.: Government Printing Office, 1937. 134 p. 23 cm. (United States Geological Survey. Bulletin 878) Paper, \$0.15. 1149a

Contents: Introduction. The elements and their relative abundance. Classification. Analyses of igneous and crystalline rocks. Analyses of sandstones and cherts. Analyses of carbonate rocks. Analyses of slates and shales. Analyses of clays, soils, etc. Analyses of ores and gangue material. Analyses of minerals. Index.

Note: This bulletin is a supplement to Clarke's *Analyses of rocks and minerals from the laboratory of the United States Geological Survey, 1880-1914*, Washington, D.C., 1915, and anyone wishing to make an exhaustive search for analyses will therefore have to consult both volumes. The present work puts on record the additional analyses made from 1914 to 1936 totalling 1,533 quantitative analyses. Minerals are arranged in order of the state from which the sample was obtained, and each individual sample is analyzed in tabular form showing chemical content. Names of collectors are included where available.

WINCHELL, ALEXANDER NEWTON

Elements of mineralogy, emphasizing the variations in minerals. New York: Prentice-Hall, Inc., 1942. 535 p. illus. (part col.) 23 cm. (Prentice-Hall geology series, edited by N. E. A. Hinds) \$5.65. 1150

Contents (abridged): Introduction. Crystallography. Physical mineralogy. Chemical mineralogy. Descriptive mineralogy. Economic mineralogy. Determinative mineralogy. Glossary. Index.

Note: Emphasis is placed on the variations in mineral composition in this elementary textbook for college students. The subject is treated from essentially the same viewpoint as in the author's *Elements of optical mineralogy*, described below, with the

difference that the work just mentioned is intended for advanced students of the subject. Extensive tables are given for identifying minerals by means of specific gravity, streak, hardness, cleavage, and luster.

WINCHELL, ALEXANDER NEWTON

Elements of optical mineralogy; an introduction to microscopic petrography. New York: John Wiley and Sons, Inc., 1933-39. 3 v. illus. 23 cm. Vol. I, \$3.50; Vol. II, \$6.00; Vol. III, \$5.00. 1151

Contents (abridged): Part I (Volume I), Principles and methods: Elementary conceptions of mineralogy. Crystallography. Physical characters of minerals. Optical properties of isotropic minerals. Preparation of material for microscopic study. Microscopic study of refraction. Optical properties of uniaxial minerals. The Nicol prism. Uniaxial minerals in polarized light. Optical properties of biaxial minerals. Special methods of study—graphic methods for the improved universal stage, by R. C. Emmons. Index. Part II (Volume II), Descriptions of minerals: Sulfides, selenides, tellurides, arsenides, antimonides, "sulfosalts," oxysulfides, carbides and natural hydrocarbons. Halides. Oxides. Carbonates. Borates. Sulfates, selenates, tellurates, chromates, molybdates, tungstates, uranates, selenites, tellurites. Phosphates, vanadates, arsenates, antimonates, columbates, tantalates and titanates. Silicates, titanosilicates, zirconosilicates, thorosilicates, stannosilicates, aluminosilicates and borosilicates. Index. Part III (Volume III), Determinative tables: Table I, Opaque minerals. Table II, Birefringence of minerals. Table III, Color of minerals. Table IV-a, Refractive index of isotropic minerals. Table IV-b, Refractive index of anisotropic minerals. Table V, Dispersion of minerals. Explanation of plates. Index.

Note: An introduction to microscopic petrography, this three-volume work has been revised to incorporate the recent developments in the science resulting from X-ray studies of crystals, and the relation of optical properties and chemical composition as re-examined recently. Volume I presents not only the material necessary for the study of minerals occurring in thin sections, but also in powders and fragments and those involving immersion in liquids. In volume II are descriptions of minerals with special reference to their optical and microscopic identifications. The minerals are arranged according to the Dana classification. Volume III covers all minerals whose optical properties are known. A current set consists of the following editions: Part I, fifth edition, 1937; Part II, third edition, 1933; Part III, second edition, 1939.

WINCHELL, ALEXANDER NEWTON

The microscopic characters of artificial inorganic solid substances or artificial minerals. With a chapter on the universal stage by Richard Conrad Emmons. Second edition. New York: John Wiley and Sons, Inc., 1931. 403 p. illus. 23 cm. \$5.00. 1151a

Contents: Part I, Principles and methods: Introduction. Drawings, projections, and diagrams. Crystals. Apparatus and preparation of materials. Optic properties of isotropic substances. Optic properties of uniaxial crystals. Uniaxial crystals in parallel polarized light. Optic properties of biaxial crystals. Biaxial crystals in parallel polarized light. The universal stage. Part II, Descriptions of artificial inorganic solid substances or artificial minerals: Elements. Sulphides, etc. Halides and cyanides. Cyanates and thiocyanates. Oxides. Carbonates, etc. Borates, etc. Sulphates, etc. Phosphates, etc. Columbates, tantalates, titanates and zirconates. Silicates. Part III: Determinative tables. Index.

Note: A supplementary or companion volume to Winchell's *Optical mineralogy* (Part II), New York, 1937 (see above), this text and reference work for students of mineralogy presents an introduction to the crystallographic method and laboratory technique in the study of artificial minerals together with a detailed description of all of the known artificial substances. The latter includes the chemical name and composition, the crystal system and axial elements, the physical characters such as crystal habit, twinning, cleavage, hardness, specific gravity, fusibility and solubility, the optic properties, optic orientation, extinction angles, refringence, optic angle, pleochroism, adsorption, inversions, and synthesis. The second edition contains a new section on principles and methods based on part I of the author's work referred to above, and there are new data on crystal properties and determinative factors. References are given in footnotes.

Petrology

BALK, ROBERT

Structural behavior of igneous rocks (with special reference to interpretations by H. Cloos and collaborators). New York: The Geological Society of America, 1937. 177 p. illus. 25 cm. (Geological Society of America. Memoir 5) \$1.75. 1152

Contents (abridged): Part I, Description of primary structures: Primary flow structures. Primary fracture systems. Part II, Structure patterns in igneous masses: Flow structures. Structure patterns in massifs. Fracture systems. Part III, Related problems: Structural data and the mechanics of intrusion. Controversial problems. Part IV, Application of principles: Suggestions for structural field work. Part V, Appendix. Selected references, mostly 1935-1937. Index.

Note: A summary of the present state of knowledge of the internal structures of igneous rocks, outlining in detail the methods used, and some of the results obtained, in this study in Europe and in the United States. No attempt has been made to cover the entire literature on structural geology of igneous rocks; but the more important contributions are included.

BUDDINGTON, ARTHUR FRANCIS

Adirondack igneous rocks and their metamorphism. New York: The Geological Society of America, 1939. 354 p. illus. 26 cm. (Geological Society of America. Memoir 7) \$3.25. 1153

Contents: Geography and historical review. Grenville series. Anorthositic, gabbroic, and dioritic rocks. Diana quartz syenitic complex. Santa Clara, Tupper-Saranac, and other quartz syenitic complexes. Hypersthene metadiabase dikes in Diana complex. Younger granite series with local syenite facies. Diabase, syenite porphyry, and rhyolite dikes. The Adirondack igneous complex as a whole. Regional dynamo-thermal metamorphism; metamorphic zones and facies. Origin of metamorphism. Bibliography. Index.

Note: The major objectives of this study have been to define the character of the igneous rocks in the region; to determine the number of separate igneous complexes and their relative ages, variations, the relationships of these variations to structure, the interpretation of their origin; to elucidate the mechanics of intrusion, to discriminate primary magmatic structures from post-consolidation metamorphic features, and to describe and interpret the mineralogic facies as a result of metamorphism. A geologic map of a part of northwest Adirondacks is included, together with many tables showing the chemical analyses of the rocks studied.

COLONY, ROY JED, AND JOSEPH H. SINCLAIR

Metamorphic and igneous rocks of eastern Ecuador. New York: The New York Academy of Sciences, 1932. 52 p. illus. 24 cm. (New York Academy of Sciences. Annals. Vol. xxxiv, art. 1) Paper, \$0.60. 1154

Contents: Introduction. Physiographic features. Difficulties of exploration. Petrography: Metamorphic rocks. Igneous rocks: pre-Albian volcanics. Igneous rocks of probable pre-Albian age. The granites. Quaternary lavas.

Note: A study of the petrography of the region, based on a detailed analysis of 44 samples of rocks collected east of the Andes during two expeditions in 1921 and 1927, divided into metamorphic rocks, igneous rocks, granites, and lavas of later Tertiary, Quaternary, and Recent age.

DALY, REGINALD ALDWORTH

Igneous rocks and the depths of the earth. New York: McGraw-Hill Book Company, Inc., 1933. 598 p. illus. 23 cm. \$5.00. 1155

Contents: Abstract. Part I, Leading facts: Types of igneous rocks. Distribution and relative quantities of igneous rock species. Eruptive types and geological time. Some physical properties of rocks. Injected bodies. Subjacent bodies. Extrusive

bodies. Part II, A general theory: Outer shells of the earth. Internal heat of the earth. Abyssal injection. Magmatic stopping. Pure melting and assimilation of rocks. Abyssoliths. Differentiation of magmas. Mechanism of volcanic vents of the central type. Part III, Application of the general theory: Gabbro clan. Granite clan. Diorite clan. Granodiorite clan. Syenite clan. Feldspathoidal clans. Ultramafic rocks. Magmatic ores. Carbonatites. Principles and projects. Index.

Note: Omission of some material and inclusion of new material in a large number of chapters makes this work a virtually new presentation. The fundamental assumption of the author's older work, *Igneous rocks and their origin*, New York, 1914, is retained. This is, that the crust of the earth is real, is relatively thin, rests upon a vitreous, weak but rigid basalt shell, continuous around the globe. The book's appeal is mainly to geologists.

EMMONS, RICHARD CONRAD

The universal stage (with five axes of rotation). New York: The Geological Society of America, 1943. 205 p. illus. 26 cm. (Geological Society of America. Memoir 8) \$2.00. 1155a

Contents: Some pertinent fundamental concepts of crystal optics. General considerations in universal stage work. Orientation procedure. Determination of corrections for rotations. Double variation procedure for refractive index determination. General discussion of feldspar twinning and twin laws. Rittmann zone method of plagioclase study. Five-axis method of feldspar study. Fedorow method of feldspar study. New thin-section method for the determination of birefringence. Universal stage as a refractometer. Special applications of the universal stage. References cited. Index.

Note: A technical discussion of the essentials of theory and the practical applications of the universal stage for orienting crystals as used in petrographic microscopy. Only the stage with five axes of rotation is studied, as the four-axis stage is considered of too limited use at present. The five-axis stage facilitates the recognition of critical crystallographic directions and adjusts these directions with respect to the microscope. Special applications are presented on the measurement of the refractive indices and identification of calcite and dolomite. The work is adaptable for use in college mineral laboratories for students of petrography.

FAIRBAIRN, HAROLD WILLIAMS

Structural petrology of deformed rocks. Cambridge, Mass.: Addison-Wesley Press, Inc., 1942. 143 p. illus. 28 cm. \$5.00. 1155b

Contents: Part I, Petrofabric and experimental facts: Introduction. Orientation in deformed fabrics. Experimental deformation. Part II, Interpretation of petrofabric facts: Development of mineral orientation. General tectonite problems. Stress and strain. Field and economic aspects of tectonites. Part III, Methods: Field and hand specimen procedure. Microscope and X-ray procedure. Presentation of data. List of tables: Comparison of structural and compositional phases of petrology. Mineral orientation in tectonites referred to fabric axes *a*, *b*, and *c*. Classification of deformation and recrystallization processes. Crystallographic data important in the experimental deformation of tectonite minerals. Useful interfacial angles. Correlation of quartz maxima with assumed needle axes. Summary of sphere-ellipsoid relations from both geometrical and strain viewpoints.

Note: This work was preceded by the author's *Introduction to petrofabric analysis*, Kingston, Ont.: Queens University, 1935, and *Structural petrology*, Kingston, Ont.: Queens University, 1937. However, in this work the material has been radically rearranged and extensively supplemented. The author has assumed that the readers of the volume will be familiar with general structural problems in geology and will have some knowledge of petrography, optics, and crystallography. The bibliography includes 140 references.

FENTON, CARROLL LANE, AND MILDRED ADAMS FENTON

The rock book; illustrated with color plates, photographs and line drawings. New York: Doubleday, Doran & Co., Inc., 1940. 357 p. illus. (part col.) 25 cm. \$6.00. 1156

Contents: Rocks in our world. Atoms to minerals. Important minerals. Rocks, minerals and ages. Up from the depths. Coarse-grained igneous rocks. Fine-grained, glassy and fragmental rocks. Rocks from the sky. New rocks from old. Clastic rocks, coarse-

grained, fine-grained. Rocks from solutions. Limestones and related rocks. Rocks once living. Records in strata. Heat, movement and change. Rocks that have changed. Ores and their origins. Collect, travel, and read. Index.

Note: In addition to a general discussion of how rocks originated, this volume describes specific types of rocks of the world, with particular reference to those commonly encountered in the United States and Canada. It outlines the recognizable features, origin, occurrence, and uses of each type, and supplements the description with numerous photographs of typical specimens. A final chapter tells how to build up, organize, and prepare a rock collection. The volume will be of interest to the general reader and nature student.

GROUT, FRANK FITCH

Petrography and petrology; a textbook. New York: McGraw-Hill Book Company, Inc., 1932. 522 p. illus. 23 cm. \$5.00. 1157

Contents: Introduction. The petrography of igneous rocks. The petrology of igneous rocks. The petrography of sedimentary rocks. The petrology of sedimentary rocks. The petrography of metamorphic rocks. The petrology of metamorphic rocks. Mineral tables and readings.

Note: A combined text and laboratory guide. The descriptive part is a guide to laboratory work on collections of rocks and thin sections with the polarized microscope. The text material consists of a study of the common interpretations of the peculiarities of rocks in terms of their origin and history.

JOHANNSEN, ALBERT

A descriptive petrography of the igneous rocks. Chicago: The University of Chicago Press, 1931-38. 4 v. illus. 25 cm. Each vol., \$4.50. 1158

Contents (abridged): Volume I. Introduction, textures, classification, and glossary. Volume II. The quartz-bearing rocks. Volume III. The intermediate rocks. Volume IV. The feldspathoid rocks. The peridotites and perknites.

Note: A four-volume textbook and handbook dealing primarily with the more minute phases of the science of petrology, such as the megascopic and microscopic features, the individual mineral and chemical compositions, and the various textures found in rocks. The first volume describes the textures and structures of rocks and rock systems, with a summary of the various classifications according to the author's own system. The other three volumes describe and classify the various families of rocks. A glossary of petrographic terms, bibliographic references, and tables for calculation are provided. The second edition contains some revised tables and minor classification changes.

KEMP, JAMES FURMAN

A handbook of rocks, for use without the petrographic microscope. Sixth edition, completely revised and edited. By Frank F. Grout. New York: D. Van Nostrand Company, Inc., 1940. 300 p. illus. 23 cm. \$3.00. 1159

Contents: Introduction. General introduction to the igneous rocks. The igneous rocks (three chapters). General remarks on the igneous rocks. General introduction to sedimentation. The sedimentary rocks. Generalities on metamorphism. The metamorphic rocks. The rocks produced by contact and hydrothermal metamorphism. Summaries of metamorphic rocks. Calculations in rock study. Rock descriptions. Appendix. Index.

Note: This college textbook explains the chemical composition of rocks, based upon methods of calculation. Its purpose is to present coordinated methods for recognizing the various rocks without use of the microscope or other optical equipment. A comprehensive classification of rocks is included for reference purposes.

KNOFF, ELEANORA FRANCES (BLISS), AND EARL INGERSON

Structural petrology. New York: The Geological Society of America, 1938. 270 p. illus. (part col.) 26 cm. (Geological Society of America. Memoir 6) \$2.25. 1160

Contents (abridged): Part I, Principles of structural petrology, by Eleanor Bliss Knopf: Preferred orientation in rock-forming minerals, and its relation to orienting movements in rocks. Statistical determination of preferred orientation. Kinematic analysis of the formation and deformation of rocks. Types of fabric. Behavior of single crystals in plastic deformation. Behavior of polycrystalline aggregates in plastic deformation. Deformation of material at high confining pressures. Petrofabric facts and their interpretation. Planar and rotational slip in relation to preferred orientation and to folding. Mechanism of grain deformation in rock fabric. Theories of plastic flow. Application of petrofabric analysis to specific geologic problems. Part II, Laboratory technique of petrofabric analysis, by Earl Ingerson: Study of hand specimens. Study of thin and polished sections. Universal stage technique. Preparation of petrofabric diagrams. Rotation of diagrams. Index.

Note: A presentation, for petrologists and advanced students, of the science of structural petrology. Part I emphasizes fundamental principles and their application to the solution of geologic problems. The second part describes the laboratory technique essentially used by Sander of Innsbruck, originator of the method.

KRUMBEIN, WILLIAM CHRISTIAN, AND F. J. PETTIJOHN

Manual of sedimentary petrography. I. Sampling, preparation for analysis, mechanical analysis and statistical analysis, by W. C. Krumbein. II. Shape analysis, mineralogical analysis, chemical analysis and mass properties, by F. J. Pettijohn. New York: D. Appleton-Century Company, Incorporated, 1938. 549 p. illus. 22 cm. (The Century earth science series, K. F. Mather, editor) \$6.50. 1161

Contents (abridged): Part I, Sampling, preparation for analysis, mechanical analysis, and statistical analysis: The collection of sedimentary samples. Preparation of samples for analysis. The concept of a grade scale. Principles and methods of mechanical analysis. Graphic presentation of analytical data. Elements of statistical analysis. Application of statistical measures to sediments. Orientation analysis of sedimentary particles. Part II, Shape analysis, mineralogical analysis, chemical analysis, and mass properties: Shape and roundness. Surface textures of sedimentary fragments and particles. Preparation of sample for mineral analysis. Separation methods. Mounting for microscopic study. Optical methods of identification of minerals. Description of minerals of sedimentary rocks. Mineral frequencies and computation. Chemical methods of study. Mass properties of sediments. The laboratory, equipment, and organization of work. Author index. Subject index.

Note: A handbook for students of geology and for field workers, covering the distinctive analytic techniques of sedimentary petrology. The material has been compiled from extensive but widely scattered literature. The treatment assumes that the reader is fairly well trained in laboratory technique and has some knowledge of crystallography. Subject matter is arranged so that the book may be used as a textbook in college or graduate courses.

NATIONAL RESEARCH COUNCIL

Report of the Committee on Sedimentation, 1939-1940, Parker D. Trask, chairman. Presented at the annual meeting of the Division of Geology and Geography, National Research Council, April 27, 1940. Washington, D.C.: National Research Council, 1940. 121 p. illus. 27 cm. Paper, \$0.15. 1161a

Contents: Report of the chairman, by Parker D. Trask. Supplementary reports, presented as exhibits: Proposed compilation of size data of sediments, by W. C. Krumbein. Mineralogy of sedimentary rocks, 1937-1939, by F. J. Pettijohn. Progress in hydraulics as related to sedimentation, by Lorenz C. Straub. Bibliography on pediments and related sediments, by Charles B. Hunt. Sedimentation studies by the Soil Conservation Service, 1939-1940, by Carl B. Brown. Curves for determining probable errors in heavy mineral studies, by Gordon Rittenhouse. The importance of heavy mineral analysis for regional sedimentary petrology, by D. J. Doeglas.

Note: The Committee on Sedimentation of the Division of

Geology and Geography of the National Research Council sponsors from time to time the preparation of these summary reports of progress in different fields of interest to students of sedimentation. Other reports are still available in bound mimeographed form for the years 1935-36, 1936-37, 1937-38, and 1938-39. No charge is made for the mimeographed reports except the postage stamps to cover approximate postal and handling charges. Printed reports of the Committee on Sedimentation are available as follows: in the *Reprint and circular series* of the National Research Council, no. 92, 1928-29, 122 p.; no. 98, 1929-30, 97 p.; in the *Bulletin series*, no. 89, 1930-32, 229 p.; no. 98, 1932-34, 246 p.; each \$1.00.

NATIONAL RESEARCH COUNCIL

Final report of the Committee on Structural Petrology, 1937. T. S. Lovering, chairman. Washington, D.C.: National Research Council, 1938. 103 p. illus. 27 cm. (National Research Council. Division of Geology and Geography. Committee on Structural Petrology) Paper, 1161b

Note: Twenty technical papers by American and European specialists which make fundamental contributions to the general subject are reviewed and discussed by members of the National Research Council Committee on Structural Petrology. The arrangement of the reviews is in part chronological and in part by subject matter. Papers dealing with general principles are first taken up, followed by those giving applications of the principles. Articles dealing with metamorphic processes and metamorphic structure are followed by those concerned with igneous rocks. There is a selected list of 23 additional papers which are not reviewed.

SHAND, SAMUEL JAMES

Eruptive rocks. Their genesis, composition, and classification, with a chapter on meteorites. Second edition, revised and enlarged. New York: John Wiley and Sons, Inc., 1943. 444 p. illus. 21 cm. \$5.00. 1162

Contents: Eruptive or igneous rocks. The fixed constituents of eruptive rocks. The fugitive constituents of the magma. Temperature and pressure in the magma. The freezing of the magma. The magma and its walls. The order of crystallization. Compatible and incompatible phases. Eruptive rock complexes. The classification of eruptive rocks. A system of petrography. Oversaturated rocks—occurrence and genesis. The oversaturated rocks—description. The saturated rocks—occurrence and genesis. The saturated rocks—description. Undersaturated (non-feldspathoidal) rocks—occurrence and genesis. Undersaturated (non-feldspathoidal) rocks—description. Undersaturated (feldspathoidal) rocks—occurrence and genesis. Undersaturated (feldspathoidal) rocks—description. Meteorites. Index.

Note: An introductory textbook which aims to systematize and clarify the large variety of names for rocks, to make the results and conclusions of petrology intelligible to matter-of-fact people like physicists and chemists in quantitative rather than descriptive terms, and to bring about a closer relationship between petrologic theory and practical applications such as mining and construction. The eruptive rocks alone are considered in this volume, with brief references to the mineral deposits to which they give rise and the meteorites to which they are related. The second edition omits the chapter on eruptive ore deposits contained in the first edition, but includes references to the literature published between 1927 and 1940.

TICKELL, FREDERICK GEORGE

The examination of fragmental rocks. Revised edition. Stanford University, Calif.: Stanford University Press, 1939. 127 p. illus. 26 cm. \$4.00. 1163

Contents: Introduction. Size analysis. Porosity and permeability. Preparation of specimens. Identification of minerals. Description of minerals found in sedimentary rocks. Bibliography. Index.

Note: An outline of the physical properties of fragmental aggregates and of their mineral constituents, a laboratory manual and guide for students, geologists, petroleum engineers, chemical

engineers, and microscopists, and anyone interested in a practical treatment either of identity or of size and shape relationships of fragmental rocks. The mineral tables present a dichotomous classification that makes comparatively simple and rapid the identification of the species commonly found in clastic mineral aggregates.

TWENHOFEL, WILLIAM HENRY, AND S. A. TYLER

Methods of study of sediments. New York: McGraw-Hill Book Company, Inc., 1941. 183 p. illus. 23 cm. \$2.00. 1164

Contents: The field study of sediments. Collection of samples and specimens. Preparation of sediments for analysis. Mechanical analysis of sediments. Separation of minerals of sediments. Quantitative determination of mineral content. Graphical representation of sediments. Chemical methods of mineral separation. Various physical properties of sediments. Coals. Thin sections, mounting of mineral grains, and peels.

Note: Presents a brief, nonmathematical treatment of methods of study of sediments. Standard methods of sampling for various types of sediments are described, methods of analyses are given, and various forms of graphical representation of the characteristics of sediments and sedimentary rocks are shown. The discussions of coal and oil shales, and of igneous rocks as sources of sediments, are especially noteworthy.

TWENHOFEL, WILLIAM HENRY

Principles of sedimentation. New York: McGraw-Hill Book Company, Inc., 1939. 610 p. illus. 23 cm. \$5.00. 1165

Contents: Introduction. The environmental factors. Classification and consideration of environments. Origin of inorganic sediments. Interrelations of organisms and sediments. Transportation and deposition of sediments. Classification of sediments and sedimentary rocks and minerals. The clastic sediments. Sediments of chemical deposition. Sediments of chemical deposition: siliceous, ferruginous, and manganese sediments. Sediments of chemical deposition: the carbonaceous sediments. Sediments of chemical deposition: evaporites. Sediments of chemical deposition: miscellaneous sedimentary products. Structural features of sedimentary origin. Textures and colors of sediments. Index.

Note: A textbook on a relatively new division of geology dealing with the environmental conditions controlling the deposition of sediments, the methods by which they are transported, and their physical and chemical characteristics. Emphasis is placed on the concept that sediments are products of heritage and environments, the latter usually the more important. Consideration of sedimentary products is postponed until environmental influences have been explored. Bibliographic references occur at the end of each chapter.

WASHINGTON, HENRY STEPHENS

The chemical analysis of rocks. Fourth edition, rewritten and enlarged. New York: John Wiley and Sons, Inc., 1930. 296 p. illus. 23 cm. \$4.00. 1166

Contents (abridged): Part I, Introduction: Importance of chemical analysis. General character of analysis. Microscopic examination. Constituents to be determined. The occurrence of various elements. Statement of analyses. Part II, Apparatus and reagents. Part III, The sample: Selection in the field. Amount of material. Preparation of the sample. Part IV, Operations: Preliminary observations. Sources of operative errors. Weighing. Decomposition. Precipitation. Filtration and washing. Drying and ignition of precipitates. Titration. Part V: Methods. Appendices. Indices.

Note: The object of this book is to present to chemists, petrologists, mining engineers, and others who have not made a particular study of quantitative analysis, a selection of methods for the chemical analysis of silicate rocks, especially those of igneous origin. The general plan adopted is not to attempt a complete treatise on rock analysis, but to present only certain methods which have proved simple and reliable in the experience of the chemists of the United States Geological Survey. The more important of these are described in considerable detail. The fourth edition contains methods and the use of reagents developed between 1919 and 1930 and has been enlarged so as to be of more use to the beginner or student who may have to work alone. References are given in footnotes.

Dynamic and Structural Geology

ALDEN, WILLIAM CLINTON

Physiography and glacial geology of eastern Montana and adjacent areas. Washington, D.C.: Government Printing Office, 1932. 133 p. illus. 29 cm. (United States. Geological Survey. Professional paper 174) Paper, \$1.00. 1167

Contents: Introduction. Oligocene epoch. Miocene and Pliocene epochs. Pliocene and early Pleistocene epochs. Illinoian or Iowan (?) stage of glaciation. Peorian (?) stage of deglaciation. Wisconsin stage of glaciation. Late Pleistocene or Recent uplift. Index.

Note: A summary of results obtained from a regional study of the numerous remnants of gravel-capped terraces and high-level benches widely scattered in the upper Missouri and Yellowstone drainage basins, together with a critical study of the character and age of the several drift sheets and of their relations to these several sets of gravel-covered terraces and benches. There are 70 illustrations, including photographs, maps, charts, and drawings. A map on the scale 1:500,000 is included showing the physiography and glacial geology of the area.

AMERICAN GEOPHYSICAL UNION

Geophysical exploration of the ocean bottom; symposium arranged by the American Geophysical Union held at the American Philosophical Society, November 26, 1937. Philadelphia: The American Philosophical Society, 1938. 144 p. illus. 25 cm. (American Philosophical Society. Proceedings. Vol. 79, no. 1) Paper, \$1.25. 1168

Contents: The importance of geophysics to submarine geology, by Richard M. Field. New methods of marine surveying, by Captain G. T. Rudé. Present status of the problem of submarine canyons, by H. C. Stetson. The Geological Survey's work on the Piggot North Atlantic deep sea cores, by W. H. Bradley and others. Marine gravimetric methods and surveys, by Maurice Ewing. Gravity anomalies and island arc structure with particular reference to the West Indies, by Harry Hammond Hess. The role of earthquakes and the seismic method in submarine geology, by N. H. Heck. Terrestrial magnetism and oceanic structure, by J. A. Fleming. Round-table discussion.

Note: Eight professional papers and a general discussion on various aspects of the theory and methods of submarine geophysical exploration. There are short bibliographies appended to four of the papers.

ATWOOD, WALLACE WALTER

The physiographic provinces of North America. Boston: Ginn and Company, 1940. 537 p. illus. (part col.) 24 cm. \$5.00. 1169

Contents: The regional idea in geography. The Atlantic and Gulf coastal plain. The Appalachian highlands, the New England-Acadia division. The Appalachian highlands, the southwestern division. The Laurentian upland. The central lowlands. The interior highlands. The great plains. The Rocky Mountains. The Cordilleran plateaus. The Pacific borderlands. Index.

Note: This college textbook for courses in regional physiography divides North America into well-defined units of land surface and gives an explanation of the physiography, climatology, soils, and native vegetation of the areas. Additional references and lists of topographic maps are found at the end of each chapter.

ATWOOD, WALLACE WALTER, AND KIRTLEY F. MATHER

Physiography and Quaternary geology of the San Juan Mountains, Colorado. Washington, D.C.: Government Printing Office, 1932. 176 p.

illus. 29 cm. (United States. Geological Survey. Professional paper 166) Paper, \$1.75. 1170

Contents: Introduction. General geography. Pre-Quaternary history of the San Juan Mountains. Quaternary history of the San Juan region. Physical features of the San Juan region. Pleistocene glaciation. Late Tertiary (?) and Quaternary formations: Pliocene or early Pleistocene deposits. Pleistocene deposits. Late Pleistocene and Recent deposits. Utilization of the San Juan region by man. Index.

Note: A report of the authors' thirteen years of field work in the area between 1910 and 1923. Although the study here presented is essentially physiographic, the material is based on field methods which are fundamentally geologic. Throughout most of the area an attempt has been made to recognize and map all formations of Quaternary age, and this data is presented on a large-scale areal geologic map on which all Quaternary formations are indicated in detail. There are also structural and physiographic cross-section charts of the area and 34 plates of photographs.

BILLINGS, MARLAND PRATT

Structural geology. New York: Prentice-Hall, Inc., 1942. 473 p. illus. 23 cm. (Prentice-Hall geology series, edited by N. E. A. Hinds) \$4.50. 1171

Contents: Structural geology. Mechanical principles. Description of folds. Field study and representation of folds. Mechanics and causes of folding. Failure by rupture. Joints. Description and classification of faults. Criteria for recognition of faults. Thrust faults. Gravity or normal faults. Secondary foliation and lineation. Unconformities. Salt domes. Plutons. Granite tectonics. Extrusive igneous rocks. Structural petrology. Geophysical method in structural geology. Laboratory exercises. Index.

Note: This college textbook places emphasis on principles, methods, and techniques. Local structural units are used only to illustrate principles. Bibliographic footnotes are found throughout the text. A generous number of illustrations are included.

BUCHER, WALTER HERMAN

The deformation of the earth's crust; an inductive approach to the problems of diastrophism. Princeton: Princeton University Press, 1941. 532 p. illus. 23 cm. \$5.00. 1172

Contents: The mobile belts. Isostasy. Continental margins and intracontinental mobile belts. The pattern of the mobile belts. The diastrophic cycle. Marginal deformation. Deformation within the belts. Special aspects of orogenic deformation. The intrusives. Heterogeneous mobile belts and faulted belts of low mobility. Space relations of mobile belts. Time relations of mobile belts. Epeirogenesis. Summary and synthesis. Appendix. Index: Terms and topics. Geographical names. Authors.

Note: The second printing of a book originally published in 1933, which assembles essential geological facts of a general nature that bear on the problem of crustal deformation, and derives from them a hypothetical picture of the mechanics of diastrophism that is consistent with them all. The facts are given in the form of general statements called "laws," 46 of which are grouped in an appendix. For advanced students of geology.

DALY, REGINALD ALDWORTH

The floor of the ocean; new light on old mysteries. Chapel Hill: The University of North Carolina Press, 1942. 177 p. illus. 23 cm. (The Page-Barbour lectures at the University of Virginia, 1941) \$3.00. 1172a

Contents: Foundations of the great deep: Introduction. Dimensions of the ocean. Relief of the sea bottom. Continental terraces. The general floor. Conclusions. Submarine mountains: Introduction. The volcanic mountains. The mountain ranges. Conclusions. Continental terraces and submarine valleys: Introduction. The terraces. Valley systems of the continental slope. Summary. Notes. Index.

Note: A study of the relief and structures at the bottom of the ocean. Mountains and valleys found on the floor of the sea are studied to provide an introduction to the problem of the origins and history of continents and archipelagoes. The work originated as the 1941 Page-Barbour lectures at the University of Virginia.

DALY, REGINALD ALDWORTH

Strength and structure of the earth. New York: Prentice-Hall, Inc., 1940. 434 p. illus. 23 cm. (Prentice-Hall geology series, edited by N. E. A. Hinds) \$4.65. 1173

Contents (abridged): Introduction. Development of the idea of isostasy. Testing isostasy with the plumb-line. Measurement of gravity; comparison of intensities. Gravimetric tests of isostasy in the United States, by Hayford and Bowie. Later gravimetric tests of isostasy in North America. Testing isostasy in Europe. Testing isostasy in Africa and Asia. Testing isostasy at sea. Nature's experiments with icecaps. Retrospect. Strength of the earth-shells. Index.

Note: This is a technical study for the physical geologist. It is concerned with determining the location and degrees of strength in the earth's mantle. The facts and deductions bearing on the plastic layer and its geometrical relations to the overlying and underlying shells are summarized. Attention is centered on the response of terrestrial matter to the force of gravity, itself a combination of gravitational and rotational pulls. How geophysicists correlate the earth's relief with gravity as measured on its surface is noted in detail, and observations made on how that correlation can be made to tell how strength is distributed in depth. References are included at end of most chapters.

ENGELN, OSCAR DIEDRICH VON

Geomorphology, systematic and regional. New York: The Macmillan Company, 1942. 655 p. illus. (part col.) 24 cm. \$4.50. 1174

Contents: Definitions and backgrounds. Relief features of the first order. Relief of the ocean bottoms. Geomorphic units. Process, stage, and the geomorphic cycle. The peneplain concept. The normal or fluvial geomorphic cycle on a coastal plain. A. Stream and valley development. B. Regional development. Factors of rock strength, in relation to processes and results, in the fluvial geomorphic cycle. Waterfall sites. Phenomena of the fluvial geomorphic cycle on an oldland. Interruptions of the fluvial geomorphic cycle and their consequences. The Walther Penck geomorphic system. Geomorphic features associated with weathering and mass translocations of rock waste. The fluvial geomorphic cycle in dome and fold structures. History of the folded Appalachians. Fault-block mountains and topography resulting from faulting. The desert (or arid) geomorphic cycle. The glacial geomorphic cycle. Geomorphology of coasts. Coral shore lines, coral reefs, and atolls. Karst topography. Land forms from volcanicity. Works to which reference is made. Index.

Note: This book is designed to give the thorough basic training in geomorphology necessary for all kinds of geologic, survey, and map work, and is especially valuable today for those who interpret and map geologic information revealed on aerial photographs. All relief aspects of the solid surface of the earth are discussed—the ocean floors as well as land forms. A novel narrative interest is added to the text by the animation of personalities involved in the conflict between the Davis and Penck approaches. Many striking illustrations appear in the text. In addition to photographs—seven of which are colored—diagrams and United States Geological Survey topographical maps are included.

FENNEMAN, NEVIN MELANCTHON

Physiography of eastern United States. New York: McGraw-Hill Book Company, Inc., 1938. 714 p. illus. 23 cm. \$6.50. 1175

Contents: Coastal plain province. Piedmont province. Blue Ridge province. Ridge and valley province. Appalachian plateau province. New England province. Adirondack province. Interior low plateau province. Central lowland east of the Mississippi. The Superior upland. Central lowland west of the Mississippi. Ozark plateaus. Ouachita province.

Note: The purpose of this book, companion volume to the author's *Physiography of western United States*, is to establish order in the vast amount of geologic literature on the eastern United States and to organize the knowledge in an attempt to interpret the physiographic history of this area. An outstanding feature of the book is the large number of illustrations and maps.

FENNEMAN, NEVIN MELANCTHON

Physiography of western United States. New York: McGraw-Hill Book Company, Inc., 1931. 534 p. illus. 23 cm. \$5.00. 1176

Contents: Great Plains province. Southern Rocky Mountain province. Wyoming basin. Middle Rocky Mountain province. Northern Rocky Mountain province. The Columbia plateau. Colorado plateau province. Basin and range province. Sierra Cascade province. Pacific border province.

Note: Summarizes present knowledge of the physiography of western United States, describing the land forms and giving their history. The aim is so general a discussion of so large an area is to furnish a consistent frame in which additional knowledge and more local discussions may find a setting.

FINCH, VERNOR CLIFFORD, AND OTHERS

The earth and its resources; a modern physical geography, by Vernor C. Finch, Glenn T. Trewartha, and M. H. Shearer. New York: McGraw-Hill Book Co., Inc., 1941. 634 p. 23 cm. \$2.40. 1177

Contents (abridged): The earth and its planetary relations. Temperature of the atmosphere. Atmospheric pressure and winds. Atmospheric moisture and precipitation. Storms and their weather types. Climates of the tropics and the dry middle latitudes. Climates of middle and high latitudes. Composition and changes of the earth's crust. Wearing away and building up of the land. River-made plains. Glaciated plains. Plateaus and hill country. Mountains. Oceans and their shores. Water resources of the land. Native vegetation and animal life. Soils. Mineral fuels, ores, and other economic minerals. Major physical regions and resources of the United States. Appendix. Index.

Note: Both the terminology and content of this textbook for beginning college students are non-technical. The end of each chapter has bibliographical references. M. H. Shearer's *Laboratory exercises in physical geography*, New York: McGraw-Hill Book Company, 1941, 131 p., \$1.00, is a laboratory manual designed for use with this book.

HINDS, NORMAN ETHAN ALLEN

Geomorphology, the evolution of landscape. New York: Prentice-Hall, Inc., 1943. 894 p. illus. 23 cm. (Prentice-Hall geology series, edited by N. E. A. Hinds) \$6.65. 1178

Contents: The earth sciences. The origin of the earth—the solar system. Age of the earth. Atmosphere, hydrosphere, and earth-body. Principles of land form evolution. Rocks. Reading and interpretation of topographic maps. Classification of features of the earth's relief. The primary relief. Land forms developed by crustal deformation. Land forms of igneous origin. Evolution of land forms by epigene agents. Climate. Weathering of rock. Land forms produced by gravitative transfer of rock. Modeling by running water. Work of snow and ice. Land forms developed by wind action. Work of subsurface waters. Basins, coastal land forms, and islands. Natural bridges and arches. Submarine trenches or canyons. Bibliography. Subject index.

Note: A comprehensive treatment for general readers and college students beginning the subject. An abundant use of reproductions of photographs to illustrate the text is a special feature. At the end of each chapter is a list of related topographic maps published by the United States Geological Survey.

JOHNSON, DOUGLAS WILSON

The origin of the Carolina bays. New York: Columbia University Press, 1942. 341 p. illus. 24 cm. (Columbia geomorphic studies, edited by Douglas Johnson. No. iv) \$4.50. 1179

Contents: Introduction. Nature of the bays. Scientific studies of the bays. Hypotheses based on supposed terrestrial origin of the bays. Hypothesis of ancient meteorite scars. Hypothesis of recent meteorite scars. Further tests of meteoritic hypothesis. Magnetic tests of the meteoritic hypothesis. The hypothesis of complex origin. Competence of the hypothesis of complex origin. The artesian phases of the hypothesis. The solution phase of the hypothesis. The lacustrine phase of the hypothesis. The aeolian phase of the hypothesis. Possible weaknesses of the hypothesis. Index.

Note: A discussion of the various hypotheses put forward to explain the origin of the oval craters on the Carolina coast. The author advances the theory that artesian springs produced basins in which lakes occurred and about which beach ridges and dune ridges formed.

JOHNSON, DOUGLAS WILSON

The origin of submarine canyons; a critical review of hypotheses. New York: Columbia University Press, 1939. 126 p. illus. 24 cm. (Columbia geomorphic studies, edited by Douglas Johnson. No. III) \$2.50. 1180

Contents: I, Introduction: Hypotheses involving a tectonic origin. Hypotheses involving a non-tectonic origin. II, Hypotheses of subaerial origin: Recently submerged river gorges. Ancient submerged river gorges re-excavated by land-sliding. Ground-water sapping. III, Hypotheses of submarine origin: Submarine landslides. Submarine currents. IV, Hypotheses of subterranean origin: Subterranean river outlets. Foundering of subterranean caverns. Solution along faults by up-rising subterranean waters. Solution along faults by down-filtering marine waters. Non-deposition along faults due to up-rising subterranean waters. Submarine spring sapping. Résumé (in French). Index.

Note: The author examines hypotheses of the origin of submerged canyons on the outer margins of continental shelves, and advances his own theory of artesian spring sapping. Notes and references follow the chapters. Much of the material appeared in the *Journal of geomorphology*.

JOHNSON, DOUGLAS WILSON

Stream sculpture on the Atlantic slope; a study in the evolution of the Appalachian rivers. New York: Columbia University Press, 1931. 142 p. illus. 25 cm. (Columbia geomorphic studies) \$3.25. 1181

Contents: Foreword, by William Morris Davis. Preface. Part I, The theory of regional superposition: Previous theories of Appalachian history. The theory of regional superposition of Appalachian drainage. Part II, Considerations favorable to the theory of regional superposition. Part III, Implications of the theory of regional superposition: Former great extent of the Atlantic coastal plain. History of Pennsylvania drainage. The rivers of northern New Jersey. Superposed subsequent drainage of the Watchung crescent. Conclusion. Index.

Note: This book presents a new interpretation of the evolution of the Appalachian highlands and adjacent physiographic provinces. Earlier theories are analyzed and discussed, and an array of evidence presented in support of the newer interpretation. Among the problems treated are the nature and extent of early erosion surfaces, some of them now almost entirely destroyed, which bevelled Appalachian structures in times past; the great inland extension of the Atlantic Ocean over the Appalachian region prior to the initiation of the present topography; the relations of the Piedmont belt to the New England upland; the complicated series of drainage adjustments responsible for the existing pattern of Appalachian streams; the history of the major rivers of New England, Pennsylvania, and northern New Jersey; and the principles which must govern the analysis of drainage problems in general. There are references at the end of each chapter except the last.

LOBECK, ARMIN KOHL

Geomorphology, an introduction to the study of landscapes. New York: McGraw-Hill Book Company, Inc., 1939. 731 p. illus. 24 cm. \$4.50. 1182

Contents: Introduction. Rocks and structures. Weathering. Underground water. Streams in general. Young streams. Mature streams. Alpine glaciation. Continental glaciation. Waves. Wind. Organisms. Coastal plains. Plains and plateaus. Dome mountains. Block mountains. Folded mountains. Complex mountains. Volcanoes. Meteor craters.

Note: Systematically explains all types of landscapes in terms of their origin and stage of development. The first part of the book deals with the forms produced by destructive forces, such as streams, glaciers, waves, wind, and organisms, while the last part describes plains, plateaus, and the several kinds of mountains. Many photographs and diagrams, comprising about one half of the volume, supplement the text.

LOOMIS, FREDERIC BREWSTER

Physiography of the United States. New York: The Odyssey Press, 1937. 350 p. illus. 23 cm. \$2.75. 1182a

Contents: Part I, Physiographic processes and their effects: Physical divisions of the United States. The atmosphere and its work. Climate. The work of ground water and of running water. The oceans—the work of standing water. Glaciers and glaciation. Rock structures and their surface expression. Vulcanism. Geologic time. Part II, Regional physiography: Continental shelves. New England. The genesis of the eastern provinces: The coastal plain. The piedmont province. The Blue Ridge, the Valley and the ridge province, and the Appalachian plateaus. The central lowland. The Ouachita province and Ozark plateaus. The Canadian shield; the Adirondacks; the Superior upland. The related geologic history of the Great Plains province and the several provinces of the Cordilleran highland. The Great Plains. The Rocky Mountain system and its provinces. The Colorado plateaus. The Basin and Range province. Columbia and Snake River plateaus. The Cascade-Sierra province. The Pacific border province. Index.

Note: A text for beginning students of college grade that presents the broad outlines of the subject with as few technical terms as possible. The elements of geology and geologic process are introduced, followed by an account of the physical geography of the various divisions or provinces of the United States. A United States Geological Survey map of these divisions, giving geologic characteristics for each section, is included, and there are bibliographies after many of the chapters.

NEVIN, CHARLES MERRICK

Principles of structural geology. Third edition. New York: John Wiley & Sons, Inc., 1942. 320 p. illus. 23 cm. \$3.50. 1183

Contents: Introduction. Physical properties of rocks. Stress and strain relations. Flexures. Faults. Joints. Cleavage. Structures associated with igneous intrusion. Structures in unconsolidated sediments. Reflection of rock structure in the topography. Some facts, inferences, and hypotheses regarding the earth. Continents and ocean basins. Mountain systems. Index.

Note: The purpose of this book is to discuss, as simply as possible, the deformations of the earth. Controversial subjects are treated thoroughly and impartially. The observable failures such as folds and faults are dealt with first. The causes of earth movements are treated later in the book. No great changes in the organization or content of the book were made for this third edition, but recent data and concepts have been incorporated, such as the results of Griggs' experiments under high pressure.

SHARPE, CHARLES FARQUHARSON STEWART

Landslides and related phenomena; a study of mass-movements of soil and rock. New York: Columbia University Press, 1938. 137 p. illus. 24 cm. (Columbia geomorphic studies, edited by Douglas Johnson. No. 2) \$3.00. 1185

Contents (abridged): Significance of mass-movement. Types of mass-movement. Slow flowage. Rapid flowage. Landslide. Sub-sidence. Conclusion. Selected bibliography. Index.

Note: The phenomena of mass movement of land are classified and the major types discussed in this book for geologists, geographers, and others. Of special note is the bibliography of 275 foreign and American references.

SHEPARD, FRANCIS PARKER, AND K. O. EMERY

Submarine topography off the California coast: canyons and tectonic interpretation. New York: The Society, 1941. 171 p. illus. 25 cm. (Geological Society of America. Special papers. No. 31) \$3.25. 1186

Contents (abridged): Part I, Bathymetric charts. Part II, Tectonic interpretation of the topography. Part III, California submarine canyons. Part IV, Origin and history of submarine canyons. Works to which reference is made. Index.

Note: A report on the submarine configuration off the California coast with special attention given to submarine canyons, based on surveys involving more than a million soundings, mostly by fathometers and with the use of radio-acoustic ranging. Four large charts of land- and sea-floor contours are included.

SYKES, GODFREY GLENTON

The Colorado delta. Washington, D.C.: Published jointly by Carnegie Institution of Wash-

ington and the American Geographical Society of New York, 1937. 193 p. illus. 26 cm. (American Geographical Society. Special publication no. 19, edited by W. L. G. Joerg) (Carnegie Institution of Washington. Publication no. 460) \$3.00. 1187

Contents: Part I, History of exploration and navigation: History of exploration (1539-1858). Navigation of the lower river (1852-1876). Part II, Physiographic history: The period of relative stability (1890-1900). The decade of the great diversion (1900-1910). The trend southwestward to a blind outlet (1910-1920). Artificial deflection to the south-southwest (1920-1930). Prospects of stability and a tidewater outlet (1930-1935). The Imperial valley. Part III, Stream dynamics: The detrital load of the Colorado River water. Fluctuation and rhythm in the movement of debris. Deposition of the detrital material. Conclusion. Bibliography. Index.

Note: A survey of the physiographic history of the Colorado delta based on observations made on a forty-five year period, showing the rapid changes that have taken place in this area during that time. A physiographic map and aerial photographs are included.

SYKES, GODFREY GLENTON

Delta, estuary, and lower portion of the channel of the Colorado river, 1933-1935. Washington, D.C.: Carnegie Institution of Washington, 1937. 70 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 480) Paper, \$1.25; cloth, \$1.75. 1188

Contents (abridged): Deposition in the delta during the past thirty years. The river discharge at the head of the delta from June 1, 1933, to February 1, 1935. Delivery of detrital matter to the delta. River control as affecting the further movement of bed-silt already deposited. Bed-silt movement. Mechanical analysis of bed-silts. Desiccation of the delta area. Appendix. Tables.

Note: A continuation of, and supplement to, the more lengthy investigation of the various problems discussed in Sykes' *The Colorado delta*, Washington, D.C., 1937, described above. The periods immediately preceding and following the closure of the Boulder Dam constitute the main phase of the present studies.

VEATCH, ARTHUR CLIFFORD, AND P. A. SMITH

Atlantic submarine valleys of the United States and the Congo submarine valley. New York: The Geological Society of America, 1939. 101 p. illus. 24 cm. (Geological Society of America. Special papers no. 7) Paper, \$4.00. 1188a

Contents: Continental shelf and slope of the southeastern United States. The Congo submarine valley. Geologic implications. Marine surveying and submarine contouring. Works to which reference is made. Appendixes.

Note: This paper contains an outline and description of the methods and results of the marine surveys of some of the submerged continental margins of the United States and the West Africa region of the Congo river, based on the data accumulated by the United States Coast and Geodetic Survey between 1937 and 1939. The bulk of the work is represented by nine Atlantic continental shelf and slope charts to the scale of 1:120,000, covering the area roughly between Chesapeake Bay, Virginia, and Georges Bank, Massachusetts. A large number of soundings are presented in substantiation of the contours shown on these charts.

VER STEEG, KARL

Wind gaps and water gaps of the northern Appalachians, their characteristics and significance. New York: The New York Academy of Sciences, 1930. 133 p. illus. 24 cm. (New York Academy of Sciences. Annals. Vol. xxxii) Paper, \$1.35. 1188b

Contents: Introduction. What peneplane is represented on the crests of the Appalachian ridges. Wind-gap elevations and their

relation to peneplanation. Wind and water gap arrangement. The wind gaps. The water gaps. Conclusions. Bibliography.

Note: The writer constructed profiles along the crests of the ridges in eastern Pennsylvania and during the summer of 1928 made a careful field study of the wind and water gaps in this region. As a result of this investigation, he reached the conclusion, supported by the evidence presented in this paper, that wind gap elevations have no value as indicators of fluvial base levels. The facets observed in some of the gaps appear to be due to structural or other conditions unrelated to former peneplane levels. Several large-scale profiles of certain wind and water gaps are reproduced.

WILLARD, DANIEL EVERETT

Adventures in scenery, a popular reader of California geology. Lancaster, Pa.: The Jaques Cattell Press, 1942. 438 p. illus. 25 cm. \$3.75. 1189

Contents: An introductory pre-view. California: here we come. California: here we are. El Centro to Yreka. The behavior of rivers. Geological story briefly told. The geologic map. The lava plain of the north. The Colorado desert. The Mojave desert. The great central valley. San Francisco bay and the Golden Gate. Mount Diablo. The Sierra Nevada Range. An unique region (Owens Valley). Yosemite National Park. The mountains of the south. The great valley of the south. The Los Angeles basin and Rancho la Brea. Petroleum or rock oil. Gold. Agriculture. Geology from a motor car. Glossary. Bibliography. Index.

Note: In this volume the author has brought together the facts relating to the geologic history of California, and presented them in a manner which will be understandable and of interest to the average reader. Numerous photographs supplement the descriptive material. The final chapter describes, in guide book fashion, the outstanding geologic features which could be observed by a person travelling by car from one end of the state to the other. There is a glossary of geological terms and a five-page bibliography.

WILLARD, DANIEL EVERETT

Montana, the geological story. Lancaster, Pa.: Published for the author by the Science Press Printing Company, 1935. 373 p. illus. 24 cm. \$2.50. 1190

Contents (abridged): The land we walk on. The behavior of streams. The development of a landscape. Sermons in stones. A geological excursion on the Yellowstone. Rocks, stones, and soils. The mountains of the plain. The Ice Age in Montana. A new face on an old land. The Missouri river changes its course. Glacier National Park, Switzerland of America. Yellowstone National Park, a volcanic laboratory. The Tertiary mountain lakes. Glacial Lake Missoula. Forests of past ages furnish fuel. The soil the greatest resource. Geology from a car window. Appendixes: Glossary. Bibliography.

Note: This book is written in popular style and is intended for general readers, particularly those resident in Montana. It is of interest to others because the region has a number of spectacular geological features, such as the Yellowstone National Park.

WILLIAMS, HOWEL

Crater Lake; the story of its origin. Berkeley: University of California Press, 1941. 97 p. illus. (part col.) 19 cm. \$1.75. 1191

Contents: Introduction. Part I, The story: Before Mount Mazama was. How Mount Mazama rose. Glaciers of Mount Mazama. The climax of destruction. The growth of Wizard Island. Part II, The evidence: The setting of Crater Lake. Along the rim trail. By boat round the lake. Valleys of 10,000 smokes. How the mountaintop fell. How old is Crater Lake? List of references.

Note: A popular but scientifically accurate account of the growth and destruction of Mount Mazama, a volcanic peak, and the origin of Crater Lake. There is no index.

WILLIAMS, HOWEL

The geology of Crater Lake National Park, Oregon, with a reconnaissance of the Cascade range southward to Mount Shasta. Washington, D.C.: Carnegie Institution of Washington, 1942.

162 p. illus. 29 cm. (Carnegie Institution of Washington. Publication 540) Paper, \$2.50; cloth, \$3.50. 1192

Contents (abridged): Discovery and early exploration. The foundations, structural setting, and main andesite cone of Mount Mazama. Mount Scott. The earlier dacite eruptions. Inter-andesitic dacite pumice on the caldera walls. The northern arc of vents. Timber crater. The climax: culminating explosions of pumice and scoria. The origin of the caldera. Comparison of Crater Lake with other calderas. The relation of ancient man to Crater Lake. The glaciation of Mount Mazama. Microscopic petrography. Index.

Note: This study is based upon the literature in the field as well as upon new facts and data from petrographic and geological research. It is illustrated with new maps and photographs.

WILLIS, BAILEY, AND ROBIN WILLIS

Geologic structures. Third edition, revised. New York: McGraw-Hill Book Company, Inc., 1934. 544 p. illus. 19 cm. \$4.00. 1192a

Contents: Introduction. Our changing earth. The problem of rock deformation. Mechanical principles. Stratified rocks. Flexures and folds. Analysis of folding. Division of rocks by joints. Descriptions of faults. Fault types and fault displacements. Analysis of faulting. Structures of igneous rocks. Structures of metamorphic rocks. Physiographic expression of structures. Field methods. Graphic methods. Practical problems. Fundamental facts and concepts. Appendix: Corrections for dip. Orientation of maximum shearing stress. Experimental folding and shearing. Technical aspects of faulting. Index.

Note: A college textbook that presents the facts of the structure of the earth and describes the action of forces responsible for the structure. This edition has been changed in arrangement over the second edition (1929) to permit alternative use in part as an elementary survey or in full as a systematic treatise. Problems and maps have been added.

WORCESTER, PHILIP GEORGE

A textbook of geomorphology. New York: D. Van Nostrand Company, Inc., 1939. 565 p. illus. 23 cm. \$4.00. 1193

Contents: Introduction. Relief of the earth. Relations of earth and sun. Materials of the lithosphere. Elements and minerals. Materials of the lithosphere. Rocks. Earth movements and structures. Preparing the land for erosion—rock weathering. Topography produced by streams of humid regions. Topography of semiarid and desert regions. Glaciers and glacial topography. Lakes and swamps. Shore forms and shore processes of seas and lakes. Topography due to ground-water. Volcanism and volcanoes. Islands and coral reefs. Plains, plateaus and mountains.

Note: This college textbook emphasizes those geological forces and processes which have produced the existing land forms and the characteristic formations seen on the surface of the earth. The treatment is based entirely upon concrete examples of physiographic processes and the resulting topographic formations—which are illustrated with a very large number of photographs.

Seismology

BYERLY, PERRY

Seismology. New York: Prentice-Hall, Inc., 1942. 256 p. illus. 23 cm. (Prentice-Hall geology series; edited by Norman E. A. Hinds) \$4.65. 1193a

Contents: Preface. Part I, Earthquakes: Elasticity and plasticity. Earthquake vibrations. Immediate cause of earthquakes. Underlying causes of earthquakes. Effects of earthquakes. Distribution of earthquakes. Great earthquakes. Part II, Seismography: The seismograph. Elastic waves. Paths of waves and travel time curves. Location of epicenters. Seismograms. Index.

Note: An introductory college text covering in brief the subject of earthquake seismology. Part I, on the general subject of earthquakes, requires little technical knowledge on the part of the reader or student. Part II, which deals with the science of seismography, presupposes a working knowledge of the calculus and of general physics. References are given at the end of each chapter.

HECK, NICHOLAS HUNTER

Earthquakes. Princeton: Princeton University Press, 1936. 222 p. illus. 23 cm. \$3.50. 1194

Contents: Earth vibrations. Effects of earth tremors. The cause of earthquakes. Release of forces. Earthquake study without instruments. Earthquake study with instruments. Present seismographic stations of the United States. Earthquake records and their interpretations. Location of earthquake epicenters and foci. Seismic belts of the earth. Description of great earthquakes. Earthquakes of the United States. Regional investigations. Regional investigation in Japan. Safe construction in earthquake regions. Summary of earthquake information. History of seismology. References of general seismology. Index.

Note: A survey of earthquakes for the general reader, which treats them both as a tool for the investigation of the interior of the earth and as a menace that must be dealt with. Mathematical treatment and highly technical matters have been omitted. Special emphasis is laid on seismology in the United States.

LEET, LEWIS DON

Practical seismology and seismic prospecting. New York: D. Appleton-Century Company, Incorporated, 1938. 430 p. illus. 23 cm. (The Century earth science series, K. F. Mather, editor) \$6.00. 1195

Contents: Part I, Cause and distribution of earthquakes: Cause of earthquakes. Distribution of earthquakes. Part II, Elasticity and elastic waves: Elastic constants. Propagation of elastic waves; plane cases; earth's curvature neglected. Paths and travel times for earthquake waves. Part III, Instrumental methods: Instruments. Instrumental observations of earthquakes. Part IV, Descriptive observation of earthquakes: Terminology. Effects of earthquakes. Important earthquakes of history. Mechanics of earthquake occurrence. History of seismology. Part V, Seismic prospecting: Data obtained in the field. Reduction of observations. Special commercial applications. Appendix. Index.

Note: Although the presentation of the subject is necessarily quantitative and hence numerical at many points, an attempt has been made to arrange the material so that fundamental principles and procedure can be mastered by readers whose mathematical training has not extended beyond trigonometry. To further this end, graphs and line drawings have been used liberally. Intended as a text for college students, the work presents in a descriptive manner the laws common to earthquakes and artificially generated elastic vibrations governing the propagation of elastic waves in materials of the earth. The characteristics and use of instruments designed to record these vibrations are also discussed, together with the laws of free and forced vibration which govern their operation. The discussion of seismic prospecting includes refraction methods of reconnaissance and detail as well as reflection technique, with an extensive list of formulas employed and a summary of the patent situation in the United States.

LYNCH, JOHN JOSEPH

Our trembling earth. New York: Dodd, Mead and Co., 1940. 202 p. illus. 22 cm. \$3.00. 1196

Contents: Where earthquakes occur. What an earthquake is. How an earthquake is located and identified. Fordham instruments and New York City vibrations. The value of seismology to the general public. The value of seismology to geology. The value of seismology to the petroleum industry. A description of the Fordham vault. Observatory routine or sighs of a seismologist. World distribution of seismographs. The northeastern group of observatories and local quakes. Seismic core waves. Quakes of a distance of 2,500 miles. Quakes at a distance of 7,000 miles. Quakes at a distance of 10,000 miles. A brief history of earthquakes. Japanese quakes. Causes of earthquakes. Amateur seismology. Appendixes. Bibliography.

Note: Methods and instruments used in seismology are described in non-technical terminology for the layman and amateur seismologist. Interpretation of charts and graphs resulting from earthquakes are given. The interested amateur is given instructions for making a home-made seismograph.

MACELWANE, JAMES BERNARD, AND F. W. SOHON

Introduction to theoretical seismology. New York: John Wiley and Sons, Inc., 1932-36. 2 v. illus. 23 cm. Vol. I, \$6.00; Vol. II, \$2.75. 1197

Contents: Volume I, Geodynamics: Stresses in an elastic solid. Elastic strain. Relations between stress and strain. Elastic body waves. Surface waves on the plane boundary of an isotropic elastic solid. Vector treatment of elastic waves. Reflection and refraction of elastic waves. Paths of seismic rays. Interpretation of seismograms. Determination of epicenters. Depth of focus. Appendices. Index. Volume II, Seismometry: Oscillatory motion. The horizontal seismograph. The vertical seismograph. The recorder. Amplification. Actual magnification. Friction. Galvanometric registration. The onset of a new phase. The tapping test. Appendix: Miscellaneous graphical methods; identification of phases; Zeissig's method for determining epicenters; solution of spherical triangles; the stereographic projection. Tables. Index.

Note: Volume one of this work deals with the mathematical and physical theory of earthquake phenomena, the origin and propagation of earthquake waves, and the interpretation of seismograms. Volume two, except for the appendix, is concerned entirely with the instruments used in measuring earthquakes, their principles of operation, adjustment, and interpretation. Supplemental reading and bibliographic footnotes are scattered through volume one. Both volumes require that the reader have a knowledge of college physics and differential calculus.

NATIONAL RESEARCH COUNCIL

Physics of the earth. Volume VI: Seismology. By the subsidiary Committee on Seismology, Division of Physical Sciences, with the cooperation of Division of Geology and Geography and American Geophysical Union, National Research Council. Washington, D.C.: The National Research Council of the National Academy of Sciences, 1933. 223 p. illus. 24 cm. (Bulletin of the National Research Council. No. 90, October, 1933) Paper, \$2.00; cloth, \$2.50. 1198

Contents: Definition and classification of earthquakes, by J. B. Macelwane. Tectonic earthquakes, by J. B. Macelwane. Volcanic earthquakes, by H. O. Wood. Plutonic earthquakes, by J. B. Macelwane. Impact or rock fall earthquakes, by J. B. Macelwane. Earthquake investigation in the field, by H. O. Wood. "Apparent" intensity and surface geology, by H. O. Wood. Magnetic effects attributed to earthquakes, by H. F. Reid. Mechanics of earthquakes; rebound theory; regional strain, by H. F. Reid. The conception of the focus, by H. F. Reid. Earthquake body waves, by J. B. Macelwane. Reflection and refraction of earthquake waves, by J. B. Macelwane. Earthquake surface waves, by J. B. Macelwane. Paths and velocities of earthquake waves in the interior of the earth, by J. B. Macelwane. Principles of the seismograph, by J. A. Anderson. Analysis of seismograms of near earthquakes, by P. Byerly. Records of earthquakes at intermediate and great distances, by P. Byerly. Time-distance curves, by P. Byerly. Reduction of trace amplitudes, by P. Byerly. Seismic geography, by P. Byerly. Index.

Note: A collection of brief technical papers summarizing the available theoretical and mathematical knowledge of the principal seismological problems, methods, and results, presented in such a manner as to enable scientific workers in other fields to acquaint themselves with some of the more important data. There are references to the world literature of the subject at the end of each paper.

SEISMOLOGICAL SOCIETY OF AMERICA

The determination of true ground motion by integration of strong-motion records: a symposium. Berkeley, Calif.: University of California Press, 1943. 63 p. illus. 25 cm. Paper, \$1.00. 1198a

Contents: Tests of earthquake accelerometers on a shaking-table, by A. C. Ruge and H. E. McComb. Discussion of principal results from the engineering standpoint, by A. C. Ruge. An appraisal of numerical integration methods as applied to strong-motion data, by Frank Neumann. Analysis of accelerograms by means of the M.I.T. differential analyzer, by A. C. Ruge.

Note: The primary purpose is to make available the results of a comprehensive research program concerned with (a) the development of a practical means for integrating strong-motion records and (b) the quantitative determination of the errors that may be expected in actual practice. This program was undertaken by the United States Coast and Geodetic Survey in cooperation with the Massachusetts Institute of Technology and

centered about shaking-table tests of strong-motion accelerometers in which the true motion was accurately recorded simultaneously with the accelerometer response. Originally appeared in Volume 33 of the *Bulletin of the Seismological Society of America*.

UNITED STATES. COAST AND GEODETIC SURVEY

Earthquake history of the United States, by N. H. Heck, Harry O. Wood, and Maxwell W. Allen. Washington, D.C.: Government Printing Office, 1938-41. 2 v. 22 cm. (United States Coast and Geodetic Survey. Serial no. 609) Paper, \$0.30 both volumes; separately, Part I, \$0.20, Part II, \$0.10. 1199

Contents: Part I, Continental United States (exclusive of California and western Nevada) and Alaska, by N. H. Heck: Introduction. Earthquake conditions in the various states. Explanation of details in lists of earthquakes. Northeastern region. Eastern region. Central region. Western mountain region. Washington and Oregon. Earthquakes by years and months. Alaska. References. Part II, Stronger earthquakes of California and western Nevada, by Harry O. Wood and N. H. Heck: Introduction. Intensity scale. Dates of principal earthquakes. Dates of marginal earthquakes. Description of earthquakes from 1769 to 1940.

Note: Presents concise descriptions in chronological order of the more important earthquakes of the United States from earliest recorded times to the close of 1937, compiled from approximately 100 widely scattered volumes and unpublished collections. The work is intended primarily for those who have to deal in a practical way with earthquake problems. This list, however, should not be considered as a substitute for the more detailed Seismological Society of America's *Descriptive catalogue of earthquakes of the Pacific Coast*, Berkeley, Calif., 1928, or for the fuller reports contained in the annual publications of the United States Coast and Geodetic Survey, *United States earthquakes*, for each year beginning with 1928 (see Index). Part II of the present work has been revised to include earthquakes between 1939 and 1941.

UNITED STATES. COAST AND GEODETIC SURVEY

Selection, installation, and operation of seismographs, by H. E. McComb. Washington, D.C.: Government Printing Office, 1936. 42 p. illus. 23 cm. (United States Coast and Geodetic Survey. Special publication no. 206) Paper, \$0.10. 1200

Contents: Purpose of the station. The registration of seismic waves. Principle of the seismograph. Damping systems. Seismograph room or building. Station requirements. Cost of establishing a seismograph station. Descriptions of various teleseismic instruments. Seismograph recorders. Time-marking equipment. Time comparisons. Time signal receivers. Description of strong-motion instruments. Vibration instruments. Tiltmeters.

Note: A brief practical guide to the establishing of a seismographic station and to the selection of the instruments with which the station is to be equipped, including details of mounting and installation, with photographs and diagrams of typical layouts.

UNITED STATES. COAST AND GEODETIC SURVEY

United States earthquakes, 1942, by Ralph R. Bodle. Washington, D.C.: Government Printing Office, 1944. 38 p. illus. 25 cm. (United States Coast and Geodetic Survey. Serial no. 662) Paper, \$0.25. 1201

Contents: Introduction. Noninstrumental results. Miscellaneous activities. Seismological observatory results. Strong-motion seismograph results. Tilt observations. Additions and corrections to previous publications.

Note: This publication represents the latest of a series of annual summaries of earthquake activity in the United States and the regions under its jurisdiction. The destructive features of all shocks are enumerated in the brief abstracts, together with date and time, latitude and longitude of epicenter where known. There are tracings for strong-motion accelerograph records and analyses in terms of actual ground motion. There is a tabulation of world epicenters as determined from instrumental records obtained in the United States and elsewhere.

WILLIS, BAILEY

Studies in comparative seismology; East African plateaus and rift valleys. Washington, D.C.: Carnegie Institution of Washington, 1936. 358 p. illus. (part col.) 29 cm. (Carnegie Institution of Washington. Publication no. 470) Paper, \$4.25; cloth, \$5.25. 1202

Contents: Historical retrospect. Continental features and their meaning. Genetic hypothesis. Coastal region of Tanganyika. Plateaus of East Africa. Lake Albert rift valley. Mount Ruwenzori. Lake Edward-Kivu downwarp. Tanganyika trough. Rukwa trough. Nyasa-Luangwa system. Ruaha trough. Gregory rift valley. Lake Rudolph basin. Vulcanism and structure. Earthquake conditions. Gravity tests. Bibliography. Index.

Note: Presents the results of research in comparative seismology, with special reference to the dynamic conditions and geologic structures that give rise to earthquakes, based on a study of the rift valleys and plateaus of East Africa. An hypothesis is offered on the origin and development of these peculiar continental features, involving a discussion of metamorphism and magmatic differentiation in the asthenosphere. The present volume is the second of a series on world seismological conditions of which the first was the author's *Earthquake conditions in Chile*, Washington, D.C., 1929, Carnegie Institution of Washington, Publication no. 328.

Volcanology

ANDERSON, CHARLES ALFRED

Volcanoes of the Medicine Lake highland, California. Berkeley, Calif.: University of California Press, 1941. 62 p. illus. 27 cm. (University of California publications. Bulletin of the Department of Geological Sciences. Vol. 25, no. 7) Paper, \$1.00. 1202a

Contents: Introduction. Location and form of the highland. Historical summary. Basement of the highland. Growth of the shield volcano. Formation of the caldera. Rim volcanoes. Recent eruptions. Craters. Glaciation. Lake deposits. Petrography and chemical composition. Comparison with other Cascade and adjacent volcanoes. Literature cited. Plates.

Note: A technical paper on the results of several summers' field work on the volcanology of the highland area around Medicine Lake, California, which, instead of being enclosed by crater or caldera walls, is surrounded by a rampart of small volcanoes, perched on an underlying broad shield volcano. The latest eruptions are estimated to have taken place not more than 500 years ago. There is a short bibliography and a map.

PERRET, FRANK ALVORD

The eruption of Mt. Pelée, 1929-1932. Washington, D.C.: Carnegie Institution of Washington, 1935. 126 p. illus. 29 cm. (Carnegie Institution of Washington. Publication no. 458) Paper, \$1.50. 1203

Contents (abridged): Author's note. Terminology. Diagnosis and prediction. Mt. Pelée—a historical sketch. Narrative: early phases of the eruption; observations; life at the Field Station; seismic effects. Analytical section: the "nuée ardente." Appendixes: Water analysis, by E. G. Zies. Les observations volcanologiques de M. Frank Perret (offert per le journal "La Paix").

Note: An account of observations made by the author during the eruption of Mt. Pelée in Martinique during the years 1929-1932. Each of the conspicuous eruptive manifestations which occurred is carefully considered, some of them being of comparative rarity. One of the purposes of the study is to collect data for the diagnosis of eruptive conditions in order to contribute to the saving of human life and the prevention of economic waste by timely warning.

PERRET, FRANK ALVORD

The volcano-seismic crises at Montserrat, 1933-1937. Washington, D.C.: The Carnegie Institution of Washington, 1939. 76 p. illus. 29

cm. (Carnegie Institution of Washington. Publication no. 512) Paper, \$2.50. 1204

Contents: Volcanic history of the Lesser Antilles. Montserrat, the island. Narrative of the investigation. Volcanic phenomena of the *soufrières* of Montserrat. The earthquakes at Montserrat. Instruments. Summary and conclusions. Notes.

Note: A report on the period of abnormal volcano-seismic conditions at Montserrat based on observations during the period indicated and reliable information from other sources. The investigation deals only with the present and no attempt is made to deal with past geologic and volcanic formations. There are numerous photographs and a volcano-seismic chart.

WILLIAMS, HOWEL

Calderas and their origin. Berkeley, Calif.: University of California Press, 1941. 106 p. illus. 27 cm. (University of California publications. Bulletin of the Department of Geological Sciences. Vol. 25, no. 6) Paper, \$1.25. 1204a

Contents: Introduction. Terminology of calderas. Classification of calderas and related forms. Explosion calderas. Calderas of the Krakatau type. Calderas of the Kilauean type. Collapse calderas with rim volcanoes. The Katmai type of caldera. Cryptovolcanic calderas. Cauldron subsidences. Miscellaneous collapse calderas. Erosion calderas. Volcanic sector Graben. Volcanic rents or fissure troughs. Major volcano-tectonic depressions. Theories of caldera formation. Conclusions. Bibliography.

Note: The first part of this paper deals with the troublesome question of the terminology and classification of craters, calderas, and volcano-tectonic depressions; the second consists of a discussion of several of the better-known calderas, chiefly in the circum-Pacific region, and the third and final part is devoted to a summary of the general features of calderas and the theories that have been formulated to explain them. There are 130 references in the bibliography and 37 text figures.

Hydrology

ALLEN, EUGENE THOMAS, AND ARTHUR L. DAY

Hot springs of the Yellowstone National Park. Microscopic examinations by H. E. Merwin. Washington: Carnegie Institution of Washington, 1935. 525 p. illus. 29 cm. (Carnegie Institution of Washington. Publication no. 466) Paper, \$5.25; cloth, \$6.00. 1204b

Contents (abridged): Historical. Descriptive. Theories of hot springs. Rainfall and the discharge of hot springs. Types of hot ground in the Yellowstone Park. Analysis of waters. The volcanic gases. The rocks in which the springs issue. Bibliography of volcanic gases. Chemical processes in the development of hot-spring areas. Formation of sulphuric acid and its chemical action on the rhyolite. Rock decomposition in alkaline areas. Topography and water supply. Mixed waters. Dissolved mineral matter carried away by the hot waters. Relative importance of the rock-leaching processes. The deposits. Distribution of the different types of hot ground in the Park and its causes. Geysers and their behavior. Geysers theories. Alkaline areas. Travertine areas. Sulphate areas. Mixed areas. Hot-spring problems for the future. Summary. Index.

Note: The report of a seven-year study of the hot springs of Yellowstone National Park. Numerous full-page photographs show geysers in action and there are many tables of data and bibliographic references in the text.

AMERICAN GEOPHYSICAL UNION. SECTION OF HYDROLOGY

Bibliography of hydrology, United States of America, for the year 1938. Washington, D.C.: American Geophysical Union, Section of Hydrology, 1939. 72 p. 21 cm. (International Council of Scientific Unions. International Union of Geodesy and Geophysics. International Association of Scientific Hydrology) Paper, \$0.30. 1204c

Contents: Contributors. Abbreviations. Bibliography: Hydrometeorology. Water-courses. Lakes. Glaciers. Underground waters and springs. Balance of the hydrologic cycle (relation between rainfall, runoff, infiltration, transpiration, evaporation, etc.). General works (bibliographies of the various branches, hydrologic abstracts, dictionaries, reports of congresses, etc.). Miscellaneous. Author index.

Note: An annotated list of about 300 monographs and journal articles published in the United States during the year indicated, arranged by subject. A similar list for the year 1940 is also available under title *Bibliography of hydrology, United States of America, for the year 1940*, Washington, D.C.: American Geophysical Union, 1941, 90 p., paper, \$0.85, while previous bibliographies for the years 1935-36, 1937, and 1939 are out of print.

AMERICAN GEOPHYSICAL UNION

Transactions of 1943. Part II, Twenty-fourth annual meeting, April 23 and 24, 1943, Washington, D.C. Reports and papers, Section of Hydrology. Washington, D.C.: National Research Council, 1944. 446 p. illus. 23 cm. Paper, \$4.00. 1204d

Contents (abridged): Thunderstorms and runoff at high elevations in northwestern New Mexico, by L. L. Harrold. Classes and patterns of rainfall with reference to surface-runoff, by Leonard Schiff. The relation of raindrop-size to intensity, by J. Otis Laws and Donald A. Parsons. Some recharge-phenomena of a Wasatch Plateau watershed, by A. R. Croft and Richard B. Marston. Comparison of *f*-curves derived by the methods of Sharp and Holtan and of Sherman and Mayer, by L. K. Sherman. Infiltration-capacities of some plant-soil complexes on Utah Range watershed-lands, by Lowell Woodward. The determination of infiltration-rates on small agricultural watersheds, by A. W. Zagg. The application and measurement of artificial rainfall on types FA and F infiltrometers, by H. C. Wilm. Application of a graphic method of analysis to hydrographs of runoff-plots of various lengths, by E. R. Kidder and H. N. Holtan. A pilot study of ground-water resources in Peoria county, Illinois, by Max Suter. Indexes.

Note: A collection of 33 technical papers on various aspects of hydrology, together with reports of the various committees and a summary of hydrologic work done during 1941-1943. Previous *Transactions* in this series are available as follows: 16th annual meeting, 1935, \$1.50; 20th annual meeting, 1939, \$1.75; 21st annual meeting, 1940, \$1.75; 22nd annual meeting, 1941, \$2.50; and 23rd annual meeting, 1942, \$1.25.

BAKER, DONALD McCORD, AND HAROLD CONKLING

Water supply and utilization; an outline of hydrology from the viewpoint of the arid section of the United States together with an outline of water law and its administration as it has developed in the arid states. New York: John Wiley & Sons, Inc., 1930. 485 p. illus. 24 cm. \$6.00. 1205

Contents: Introduction. Climatology. Precipitation. Disposition of precipitation. Evaporation. Transpiration. Streamflow and runoff. Water rights in surface streams. Determination of available water supply. Groundwater hydrology. Groundwater in alluvial deposits. Water rights in underground water. Purposes for which water is utilized. Conflict and correlation between uses of water. Administration of streams. Valuation of water rights. Quality of water. Index.

Note: In this volume are presented a complete study and discussion of hydrology from the viewpoint of the arid section of the United States. The book contains not only a broad outline of the entire subject, with a clear discussion of the fundamental principles involved, but also a mass of specialized information. Basic principles governing the most effective use of original sources of supply are treated rather than the means of harnessing any particular supply. Included is a discussion of the climatic differences between the East and West and a history of water supply and irrigation throughout the world. The book is useful not alone to engineers engaged primarily in the development and use of water supplies, but to public officials, officers of water and power companies, financial interests, and attorneys who engage in water litigation.

HOYT, WILLIAM GLENN, AND OTHERS

Studies of relations of rainfall and run-off in the United States. Washington, D.C.: Government Printing Office, 1936. 301 p. illus. 22 cm. (United States. Geological Survey. Water supply paper 772) Paper, \$0.25. 1205a

Contents (abridged): Precipitation. Changes in temperature. Changes in run-off. Precipitation, temperature, and run-off, by basins. General accuracy of precipitation, temperature, and run-off data. Changes in rainfall, temperature, and run-off, by basins. Stream flow. Surface run-off. The unit-hydrograph method and storm transposition in flood problems. Ground-water run-off. Soil moisture. Ground-water levels. Comparison of graphs of minimum flow. References. Index.

Note: The detailed report of studies authorized and directed by the Mississippi Valley Committee of the Emergency Administration of Public Works (now the Water Planning Committee of the U.S. National Resources Board) and carried out by the U.S. Geological Survey. The study is directed along two definite lines of approach—(1) investigation of relations between annual and monthly precipitation, temperature, evaporation, transpiration, direct surface run-off, ground-water run-off, and infiltration as a basis for the quantitative analysis of the hydrologic cycle over broad areas; (2) investigation of relations between storm precipitation and direct surface run-off. Litho-printed from typed original.

NATIONAL RESEARCH COUNCIL

Physics of the earth. Volume IX: Hydrology. Edited by Oscar E. Meinzer. New York: McGraw-Hill Book Company, Inc., 1942. 712 p. illus. 24 cm. \$7.50. 1206

Contents: Introduction, by Oscar E. Meinzer. Precipitation, by Merrill Bernard. Evaporation from free water surfaces, by Sidney T. Harding. Snow and snow surveying; ice, by James E. Church. Glaciers, by Francois E. Matthes. Lakes, by Sidney T. Harding. Infiltration, by Le Roy K. Sherman and George W. Musgrave. Transpiration and total evaporation, by Charles H. Lee. Soil moisture, by Karl v. Terzaghi and Leonard D. Baver. Ground water, by Oscar E. Meinzer and Leland K. Wenzel. Runoff, by Adolph F. Meyer and others. Droughts, by William G. Hoyt. Physical changes produced by the water of the earth, by William H. Twenhofel and others. Hydrology of limestone terranes, by Allyn C. Swinnerton. Hydrology of lava-rock terranes, by Harold T. Stearns. Index.

Note: This final volume in the *Physics of the earth* series is devoted to a study of the occurrence of water in the earth, its physical and chemical reactions with the rest of the earth, and its relation to the life of the earth, including a description of the earth with respect to its waters. Like the preceding volumes in this series, the present work is intended for the scientist who is not a specialist in the subject. It presents a detailed technical survey of the latest available knowledge of the field together with a forward-looking summary of its outstanding problems. The arrangement is based on the principle of following the hydrologic cycle as nearly as practicable. After a description of the two basic principles of precipitation and evaporation, the numerous and complicated processes of storage and transfer of water are covered more or less systematically, leading to a discussion of the residual process or flow of water back to the sea. References are given at the end of each paper.

RUBEY, WILLIAM WALDEN

The force required to move particles on a stream bed. Washington, D.C.: Government Printing Office, 1938. 20 p. illus. 28 cm. (United States. Geological Survey. Shorter contributions to general geology, 1937. Professional paper 189-E) Paper, \$0.10. 1207

Contents: Introduction. Physical basis of alternative theories. Gilbert's experiments on competence. Effect of mean velocity and depth-slope product on particle movement. "Bed" velocity. Coefficient of frictional resistance. Estimation of "bed" velocity and thickness of laminar film. Effect of "bed" velocity and shearing stress at channel walls on particle movement. Departures from the "sixth-power law" for smaller particles. Possible application to natural streams. Stream competence and stream capacity. Summary and conclusions. Index.

Note: An analysis and evaluation of the three main theories which have been advanced to explain the movement of particles on a stream bed, namely the so-called "sixth-power law," which although more than a century old has been of little practical use; the critical tractive force formula; and the hydraulic lift or pressure differential formula.

TOLMAN, CYRUS FISHER

Ground water. New York: McGraw-Hill Book Company, Inc., 1937. 593 p. illus. 23 cm. \$6.00.

1208

Contents: Introduction. Resume of elements of ground-water hydrology and application to ground-water litigation. Brief review of rainfall, runoff, evaporation, and transpiration. Hydrologic properties of water-bearing materials, except soils. The soil. Occurrence of water and forces acting in the zone of aeration. Infiltration seepage including water spreading. Percolation, ground-water turbulent flow, and permeability. The water table in granular pervious material. Ground water in fractures and solution openings. Confined water. Geological classification of artesian aquifers. Wells. Oil-field fluids. Springs. The ground-water inventory. Ground-water provinces of the United States and Hawaiian Islands.

Note: A technical treatment of the science of locating and estimating supplies of water underground and their availability for use at the surface, giving in detail the information needed by the student or practicing engineer or geologist who wishes to work out problems in ground water hydrology.

UNITED STATES. NATIONAL RESOURCES PLANNING BOARD

Deficiencies in hydrologic research. Report of the Special Advisory Committee on Hydrologic Data. A National Resources Committee publication issued by the National Resources Planning Board. Washington, D.C.: Government Printing Office, 1940. 93 p. illus. 28 cm. \$0.25.

1209

Contents: Introduction. Summary and recommendations. General research principles and procedures. Proposals for projects in hydrologic research: Precipitation and interception. Infiltration. Evaporation, transpiration, consumptive use. Ground water and percolation. Run-off and stream flow. Quality of waters. Drainage basin studies. Appendices: The coordination of hydrologic research. Statistical methods in hydrology. Comprehensive research on run-off and stream flow. Standard forms for reporting basic hydrologic data. Bibliography. Index.

Note: The objective of this report was the formulation of procedures for correcting some of the deficiencies in hydrologic research. It calls attention to the major deficiencies in current hydrologic research work and suggests desirable lines of study by all interested groups—Federal and non-Federal. The proposals represent the coordinated thought of competent authorities in all sections of the country.

Paleontology

CAMP, CHARLES LEWIS, AND G. DALLAS HANNA

Methods in paleontology. Berkeley, Calif.: University of California Press, 1937. 178 p. illus. 22 cm. \$2.00.

1210

Contents: Introduction. Part One: Vertebrates. Field methods. Laboratory methods. Note on paleobotanical collecting. Part Two: Invertebrates. Preface. The collection and preparation of fossil invertebrates. Bibliography. Index.

Note: A manual of field and laboratory methods in the collection and preparation of vertebrate and invertebrate material.

FENTON, CARROLL LANE

The world of fossils; illustrated by the author. New York: D. Appleton-Century Company, Incorporated, 1933. 183 p. illus. 19 cm.

(Appleton new world of science series, edited by W. Davis) \$2.00.

1210a

Contents: Hunting big game of the past. From sea mud to mountain. The tale of the trilobites. What happened to horn shell. Fishes in armor. Life takes to the land. Death in a delta. Ages of goblins. Dinosaurs in beak and armor. Saurian swimmers. When reptiles flew. Birds that had teeth. New conquests of land. A quicksand's treasure. Beasts of the ice age. Apes, men, and mammoths. Can these bones live? The study of fossils. References and collections. Glossary. Index.

Note: A short non-technical account of the evolution of the vertebrates as evidenced by the fossil remains of prehistoric animals and man. For the general reader.

KNIGHT, CHARLES ROBERT

Before the dawn of history. Illustrated by the author. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1935. 119 p. illus. 23 cm. \$2.50.

1210b

Contents: Introduction. Fossil types. Fossils in relation to man. Prehistoric man. Neanderthal man. Cro-Magnon man. Illustrations.

Note: A collection of the author's paintings executed for the American Museum of Natural History and the Chicago Natural History Museum, depicting prehistoric scenes and vertebrates with separate descriptive texts accompanying each reproduction and a 30-page introductory account of the problems of reconstruction from fossil remains. Among the subjects represented in the illustrations, which are printed on 9½ x 12" sheets, are Silurian coral reefs, Devonian fishes, Permian reptiles, the giant salamander of the Carboniferous, *Brontosaurus*, *Stegosaurus*, *Archaeopteryx*, pterodactyls, *Protoceratops*, Cretaceous dinosaurs, *Triceratops*, *Zeuglodon*, *Unitatheres*, *Titanotheres*, aquatic rhinoceroses, the evolution of the horse, Rancho-la-Brea pitch pools, *Megatherium*, *Mastodon*, *Cervalces*, Irish elk, the Dodo, early man, cave life, and late Stone Age man.

LULL, RICHARD SWANN

Fossils; what they tell us of plants and animals of the past. New York: The University Society, Incorporated, 1931. 114 p. illus. 23 cm. (The University series. Highlights of modern knowledge. Paleontology) Paper, \$1.25.

1210c

Contents: The significance of fossils. The nature and antiquity of fossils. The number and age of fossils. The location of fossils. Fossils and the theory of evolution. Plants and animals of the past. Fossil horses. Fossil elephants and mastodons. Fossil men. Extinctions and their causes. The utilitarian value of fossil remains. Suggestions for further reading. Glossary. Index.

Note: A summarized account of the documentary evidence concerning the character and evolution of plants, animals and men of prehistory as indicated by their fossil remains. Written for the interested non-specialist.

MARKMAN, HARVEY C.

Fossils; a story of the rocks and their record of prehistoric life. Denver, Colo.: The Colorado Museum of Natural History, 1938. 96 p. illus. 23 cm. (The Colorado Museum of Natural History. Popular series no. 3, Alfred M. Bailey, editor) Paper, \$0.30.

1210d

Contents: Introduction. The prehistoric record. Before the age of reptiles. The age of reptiles. The age of mammals. The age of man. Supplementary reading.

Note: A guide for the layman and amateur to the prehistoric record of extinct plants and animals which inhabited the earth before man began to record his observations.

MATHEWS, EDWARD BENNETT, EDITOR

Contributions to paleontology and mineralogy; eight papers. Baltimore, Md.: The Johns Hopkins Press, 1934. 390 p. illus. 25 cm. (The Johns Hopkins University. Studies in geology. No. 11) Paper, \$2.50.

1211

Contents: Miocene and recent Ophiura skeletons, by Charles T. Berry. A monograph of the American Tertiary pteropod mollusks, by R. Lee Collins. Venezuelan Tertiary mammals, by R. Lee Collins. A new snake from the Eocene of Virginia, by W. Gardner Lynn. The Pleistocene flora of Japan and its climatic significance, by Seido Endo. Two new early Tertiary plants from Japan, by Seido Endo. The geology of San Quintin bay, by G. Edward Manger. Crystallo-chemical tables for the determination of tetragonal substances, by J. D. H. Donnay and J. Mélon.

Note: Bibliographic references in footnotes and photographs of fossils accompany the first seven of these short papers. The final paper, giving tables for the determination of crystalline substances by means of goniometric data together with auxiliary physical properties, is of value to crystallographers and mineralogists.

MERRIAM, JOHN CAMPBELL

Published papers and addresses of John Campbell Merriam. Washington, D.C.: The Carnegie Institution of Washington, 1938. 4 v. illus. (part col.) 25 cm. (Carnegie Institution of Washington. Publication no. 500) Price per volume: \$4.50, paper; \$5.00, cloth. 1212

Contents (abridged): Volume I, Reptilia, Mammalia. Volume II, Mammalia. Volume III, Mammalia. Paleontology and human history. Invertebrate paleontology. General paleontology. Geology. Brief chapters concerning life of past ages. Volume IV, History. Biography. General addresses. Problems relating to nature. Research and publication. Research and government. Carnegie Institution addresses and extracts from reports. Bibliography of John C. Merriam. Index.

Note: The assembled papers, monographs, reports, lectures, and addresses of the author, grouped according to general subject, together with a bibliography arranged chronologically. The papers cover a record of research in paleontology, with particular emphasis on the comparative anatomical, particularly vertebrate, aspects of the science. Several addresses deal also with nature and natural resources in their effect upon human thought. The author was president of the Carnegie Institution of Washington over a period of eighteen years.

NATIONAL RESEARCH COUNCIL

Report of the Committee on Paleoecology, 1936-37, W. H. Twenhofel, chairman. Presented at the annual meeting of the Division of Geology and Geography, National Research Council, May 1, 1937. Washington, D.C.: National Research Council, 1937. 63 p. 27 cm. Paper, Gratis. 1212a

Contents: Introduction, by W. H. Twenhofel. Paleoecology of the Foraminifera, by J. A. Cushman. An ecological cross-section of the lower part of Florida based largely upon its molluscan fauna, by Paul Bartsch. Brachiopod ecology and paleoecology, by G. Arthur Cooper. Paleoecology of the Paleozoic cephalopods, by A. K. Miller and W. M. Furnish. References.

Note: Five papers by specialists presenting considerations of the paleoecological relations of the Brachiopoda, Gastropoda, Pelecypoda, Cephalopoda, and Protozoa, including a survey of the environmental conditions controlling their distribution in the past. The Porifera, Arthropoda, Trilobita, Vertebrata, and Paleozoic plants were treated in the National Research Council's preceding publication in this series, *Report of the Committee on Paleoecology, 1935-36*, Washington, D.C.: National Research Council, 1936, 64 p., paper, gratis. Both reports are mimeographed.

RAYMOND, PERCY EDWARD

Prehistoric life. Cambridge: Harvard University Press, 1939. 324 p. illus. 25 cm. \$5.00. 1213

Contents (abridged): Fossils. Collecting fossils. First animals and plants. Pre-Cambrian life. Quatic arachnids. The radiates. Beginnings of the chordates. Origin of the vertebrates. Rise of the air-breathing vertebrates. Amphibia. First reptiles. The terrible lizards. Marine reptiles. Flying reptiles. From scales to feathers. Insects. Archaic mammals. Beasts of prey. Mammals of yesterday. Importance of plants. Index.

Note: This volume traces the history of life from the time of its first appearance on the earth up to the present. A broad overall picture is given of the development of animals in each era,

without emphasizing specific details. The book is based on lectures given by the author at Harvard University. It is of interest to the student of geology and the general reader.

RESSER, CHARLES ELMER

Fifth contribution to nomenclature of Cambrian fossils. Washington, D.C.: The Smithsonian Institution, 1942. 58 p. 24 cm. (Smithsonian miscellaneous collections. Vol. 101, no. 15. Publication 3682) Paper, \$0.30. 1213a

Note: This is the fifth in a series of publications designed to record and summarize all changes made in the names of Cambrian fossils. The first four appeared in the *Smithsonian miscellaneous collections* as follows: Vol. 93, no. 5 (Feb. 14, 1935); Vol. 95, no. 4 (April 1, 1936); Vol. 95, no. 22 (April 5, 1937); Vol. 97, no. 10 (Dec. 17, 1938). The fifth contribution includes numerous species from Asia.

SHIMER, HERVEY WOODBURN

An introduction to the study of fossils (plants and animals). Revised edition. New York: The Macmillan Company, 1933. 496 p. illus. 20 cm. \$4.40. 1214

Contents: General considerations. Plants: Introductory. Phylum I—Thallophyta. Phylum II—Bryophyta. Phylum III—Pteridophyta. Phylum IV—Spermatophyta. Animals: Introductory. Phylum I—Protozoa. Phylum II—Porifera (sponges). Phylum III—Coelenterata. Phylum IV—Ctenophora (comb-jellies). Phylum V—Platyhelminthes (flat-worms). Phylum VI—Nemathelminthes (thread-worms). Phylum VII—Trochelminthes (wheel-worms). Phylum VIII—Annelida (ring-worms). Phylum IX—Echinodermata. Phylum X—Molluscoidea. Phylum XI—Mollusca (mollusks). Phylum XII—Arthropoda. Phylum XIII—Chordata. Index—glossary.

Note: A simple introduction to the subject written for college students. To obtain the student's interest, living forms are often discussed first as types of their phyla or classes before the fossil forms are taken up. Special effort has been made to keep the discussion free of technical terms. In this edition the classification has been revised, several new genera have been added as illustrations under various classes, the discussion of each phylum concludes with two new sections—one on its evolution and one on the phylum as rock builders. A number of illustrations have been added.

TWENHOFEL, WILLIAM HENRY, AND ROBERT R. SHROCK

Invertebrate paleontology. New York: McGraw-Hill Book Company, Inc., 1935. 511 p. illus. 23 cm. \$5.00. 1215

Contents: Introduction. Protozoa. Porifera. Coelenterata. Worms. Echinodermata. Bryozoa. Brachiopoda. Mollusca. Arthropoda. Index.

Note: This introductory text divides the invertebrates into twelve phyla, treating each of these systematically from the taxonomic viewpoint, with descriptions and illustrations through the orders. Each phylum is treated as follows: general features of the subdivisions, biologic characteristics of the organisms, nature of the hard parts, classification of the phylum, ecology, stratigraphic range, and geologic history. Each phylum is fully illustrated.

Paleontology of Various Regions

ANDERSON, FRANK MARION, AND G. DALLAS HANNA

Cretaceous geology of Lower California. San Francisco, Calif.: California Academy of Sciences, 1937. 34 p. illus. 25 cm. (California Academy of Sciences. Proceedings. 4th series,

Vol. XXIII, no. 1, December 23, 1935) \$0.75.

1215a

Contents: Introduction. Pre-Cretaceous rocks. Cretaceous deposits: San Fernando formation; Chico group; Rosario formation; Catarina formation; type locality; Arroyo Santa Catarina; other localities. Stratigraphic relations. Correlation. Description of species.

Note: This study was undertaken because most of the reports on this region contained only general accounts of the geological observations, with a minimum of paleontological data. The character, classification, and distribution of the Cretaceous rocks found on the peninsula, proved and reported, constitute the chief concern of the present paper. A brief account of them and their geological background is given, followed by what is known concerning the stratigraphic relations of the beds from the paleontological evidence. In the notes on the upper Cretaceous Mollusca of Lower California, various new species are described briefly, with some references to their relationships elsewhere, so far as known. A few not new to science are considered also, with a view to ascertaining the correct correlation of the strata discussed in the first part of the paper.

ANDERSON, FRANK MARION

Lower Cretaceous deposits in California and Oregon. New York: The Society, 1938. 339 p. illus. 25 cm. (Geological Society of America. Special papers. No. 16) \$3.50. 1216

Contents (abridged): Part I, Structure and stratigraphy: Cretaceous embayments. Doubtful areas. Interrelation of troughs. Enclosing land areas. Cretaceous deposits in the Great Valley. Embayments of the trough. Cretaceous sedimentary divisions. Faunas of the Pashenta group. San Juan islands. British Columbia. Alaska. Faunal contrasts in the Shasta series. Diastrophic history. Correlations. General summary. Part II, Paleontology: Description of species. Echinodermata. Molluscoidea. Mollusca. Works to which reference is made. Index.

Note: A memoir on the stratigraphical and faunal successions in the richly fossiliferous strata of the Knoxville and Shasta series in California and Oregon, intended chiefly for students of paleontology. Part II comprises about three-fourths of the contents and contains detailed descriptions of fauna and their classifications with 83 plates of photographs of fossils.

BROWN, BARNUM, AND OTHERS

Palaeontology of Harrar province, Ethiopia, by Barnum Brown, Ethel D. Currie, John W. Wells, and Gayle Scott. New York: American Museum of Natural History, 1943. 3 v. illus. 27 cm. (American Museum of Natural History. Bulletin. Vol. 82, articles 1-3) Paper, \$2.10. 1217

Contents: The Dudley Expedition, by Barnum Brown. Echinoidea, by Ethel D. Currie. Jurassic Anthozoa and Hydrozoa, by John W. Wells. Jurassic Cephalopoda and a Cretaceous *Nautilus*, by Gayle Scott.

Note: Four illustrated papers based on a detailed study of the paleontological material from Harrar province which contains representative collections from the Upper Jurassic and Cretaceous and from the Eocene deposits near Hargeisa. A total of 141 references to the world literature is contained in the bibliographies which follow each paper.

CARNEGIE INSTITUTION OF WASHINGTON

Papers concerning the palaeontology of California, Arizona, and Idaho. Washington, D.C.: Carnegie Institution of Washington, 1934. 135 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 440. Contributions to palaeontology) Paper, \$2.25; cloth, \$3.25. 1218

Contents: Tertiary mammals from the auriferous gravels near Columbia, California, by J. C. Merriam and Chester Stock. Notes on the geologic section near Columbia, California, with special reference to the occurrence of fossils in the auriferous gravels, by G. D. Louderback. Perissodactyla from the Sespe of the Las Posas hills, California, by Chester Stock. Carnivora from the Sespe of the Las Posas hills, California, by Chester Stock. Anchietheriine horses from the Merychippus zone of the North Coalinga

district, California, by F. D. Bode. Pleistocene mammalian fauna from the Carpinteria asphalt, by R. W. Wilson. The Coconino sandstone, its history and origin, by E. D. McKee. A rodent fauna from later Cenozoic beds of southwestern Idaho, by R. W. Wilson.

Note: A collection of papers on various aspects of the paleontology of the region mentioned.

CARNEGIE INSTITUTION OF WASHINGTON

Papers concerning the palaeontology of California, Nevada and Oregon. Washington, D.C.: Carnegie Institution of Washington, 1935. 125 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 453. Contributions to palaeontology) Paper, \$2.25; cloth, \$3.25. 1219

Contents: New myricodonts from the Upper Miocene of Nevada, by E. L. Furlong. Two rodents and a lagomorph from the Sespe of the Las Posas hills, California, by R. W. Wilson. A new species of *Dipoides* from the Pliocene of eastern Oregon, by R. W. Wilson. Plants in the dung of *Nothotherium* from Gypsum cave, Nevada, by J. D. Laudermilk and P. A. Munz. Tooth characters of protolippine horses with special reference to species from the Merychippus zone, California, by F. D. Bode. The fauna of the Merychippus zone, North Coalinga district, California, by F. D. Bode. A Miocene mammalian fauna from Sucker Creek, southeastern Oregon, by D. W. Scharf. Artiodactyla from the Sespe of the Las Posas hills, California, by Chester Stock.

Note: A collection of brief papers on various aspects of the fossil flora and fauna of the regions mentioned.

CARNEGIE INSTITUTION OF WASHINGTON

Papers concerning the palaeontology of California, Oregon and the northern Great Basin province. Washington, D.C.: Carnegie Institution of Washington, 1932. 113 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 418. Contributions to palaeontology) Cloth, \$3.00. 1220

Contents: Distribution and age of the marine Tertiary deposits of the Colorado desert, by W. P. Woodring. Distribution and description of skull remains of the Pliocene antelope *Spentalos* from the northern Great Basin province, by E. L. Furlong. A Miocene mammalian fauna from southeastern Oregon, by C. L. Gazin. Additions to the mammalian fauna from the Tecuya beds, California, by Chester Stock. A new genus of otter from the Pliocene of the northern Great Basin province, by E. L. Furlong. A contribution to the Paleozoic geology of central Oregon, by E. L. Packard.

Note: A collection of brief papers on the fossil fauna of the area mentioned, including some newly discovered species.

CARNEGIE INSTITUTION OF WASHINGTON

Studies of Cenozoic vertebrates and stratigraphy of western North America. Washington, D.C.: Carnegie Institution of Washington, 1940. 194 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 514. Contributions to paleontology) Paper, \$2.75; cloth, \$3.25. 1221

Contents: A Tertiary mammalian fauna from the Avawatz Mountains, San Bernardino county, California, by Paul C. Henshaw. Rodents and lagomorphs of the late Tertiary Avawatz fauna, California, by Robert W. Wilson. The avifauna associated with human remains at Rancho La Brea, California, by Hildegarde Howard and Alden H. Miller. Skull and skeletal remains of the camel *Paratylopus cameloides* (Wortman) from the John Day deposits, Oregon, by Jack F. Dougherty. Californian paramyid rodents, by Robert W. Wilson. Two new Eocene rodents from California, by Robert W. Wilson. *Pareumys* remains from the later Eocene of California, by Robert W. Wilson. A new Miocene mammalian fauna from Caliente Mountain, California, by Jack F. Dougherty. Stratigraphy of the easternmost Ventura basin, California, with a description of a new lower Miocene mammalian fauna from the Tick Canyon formation, by Richard H. Jahns.

Note: A collection of technical papers presenting the results of original research which include descriptions and photographs of new fossil remains in the area mentioned.

ENDO, RIUJI

The Canadian and Ordovician formations and fossils of South Manchuria. Washington, D.C.: Government Printing Office, 1932. 152 p. illus. 24 cm. (Smithsonian Institution. United States National Museum. Bulletin 164) Paper, \$0.50. 1222

Contents: Introduction. Part I, Stratigraphical geology: Geographic distribution of Canadian and Ordovician strata in South Manchuria. Previous stratigraphic work. Geological nomenclature. Description of the formations. Description of the stratigraphic sections. Comments on the geographic distribution of the Ordovician. Stratigraphic correlations. Part II, Paleontology: Introduction. Spongiae. Echinodermata. Brachiopoda. Gastropoda. Cephalopoda. Trilobita. Explanation of plates. Index.

Note: An attempt is made in this monograph to bring into systematic order the facts that have been ascertained up to 1932 regarding the strata mentioned, part I dealing with the stratigraphy and part II with the descriptions of new material found by the author with a critical review of previous studies. Forty-six plates of photographs accompany the text.

GRABAU, AMADEUS WILLIAM, AND OTHERS

The Permian of Mongolia; a report on the Permian fauna of the Jisu Honguer limestone of Mongolia and its relations to the Permian of other parts of the world, with a chapter on the relations of the Jisu Honguer formation to the general geology of Mongolia, by Charles P. Berkey and Frederick K. Morris, with 72 illustrations in the text and 35 plates at end of volume. New York: The American Museum of Natural History, 1931. 665 p. illus. 28 cm. (Central Asiatic expeditions of the American Museum of Natural History. Natural history of Central Asia. Vol. IV) \$10.00. 1222a

Contents: (condensed) General introduction with a chapter by Berkey and Morris on the relations of the Jisu Honguer formation to the general geology of Mongolia. Description of the genera and species of the Jisu Honguer limestone fauna of Mongolia. Stratigraphic and faunal relations of the Jisu Honguer limestone to the Permian formations of other regions. Appendices and list of specimens used in the descriptions of the fauna. Bibliography. Index.

Note: This volume deals primarily with the description of fossil invertebrate species, nearly half of them new, collected from limestone of Permian age at Jisu Honguer, Mongolia, and with the correlation of the various Mongolian horizons of Permian age with those in various parts of the Euroasiatic world.

JORDAN, ERIC KNIGHT

The Pleistocene fauna of Magdalena Bay, Lower California. With an introduction by Leo George Hertlein. Stanford University, Calif.: Stanford University Press, 1936. 67 p. 25 cm. (Contributions from the Department of Geology of Stanford University. Vol. 1, no. 4, November 13, 1936) Paper, \$1.25; cloth, \$2.00. 1223

Contents: Echinodermata, Anthozoa, Pelecypoda, Schaphopoda, Gastropoda, Amphineura, Cirripedia, Shark teeth. Index.

Note: Descriptions of the Pleistocene fauna of this locality where it is beautifully preserved and rich in number of species and genera represented. Of interest to students of stratigraphy and paleontology.

KLEINPELL, ROBERT MINNSEN

Miocene stratigraphy of California. Tulsa, Okla.: The American Association of Petroleum Geologists, 1938. 450 p. illus. 23 cm. \$5.00. 1223a

Contents (abridged): The Reliz Canyon section: General stratigraphy. The Foraminifera. Paleogeographic significance of the foraminiferal assemblages. Correlation and age: Historical summary of foraminiferal data. Analysis of stratigraphic distribution. Chronologic-biostratigraphic classification of the marine Middle Tertiary of California. Formational correlations within the California province. Age of California stage sequence with respect to European Tertiary columns. Systematic catalogue. Index.

Note: The systematic catalogue with 23 plates of illustrations occupies about two-thirds of the text and places in their proper systematic, geographic, and stratigraphic relationships the various Foraminifera which have been recorded from the California Miocene in this and previous publications. No taxonomy has been undertaken beyond establishing the systematic interrelationships of the California Miocene forms which have a distinct bearing on the stratigraphic aspects of the problem. In addition to figuring the Foraminifera from Reliz Canyon and recording their stratigraphic distribution, the writer has tried to ascertain from faunal assemblages as much as possible concerning the geologic history of the area. Five large-scale diagrams and charts are included and there are bibliographical footnotes.

LOCHMAN, CHRISTINA, AND DONALD DUNCAN

Early Upper Cambrian faunas of central Montana. (With descriptions of Brachiopoda by W. Charles Bell) New York: The Society, 1944. 181 p. illus. 24 cm. (Geological Society of America. Special papers. No. 54) \$1.50. 1224

Contents (abridged): Introduction. Discussion of the stratigraphy. Discussion of the paleogeographic relations. Discussion of the faunas. Systematic descriptions (excluding Brachiopoda). Early Upper Cambrian Brachiopoda. References cited. Explanation of plates. Index.

Note: The first part of an Upper Cambrian faunal study designed to supplement Deiss's stratigraphic work on the revision of the type Cambrian formations and sections of central Montana. The relationship of central to south and southwestern sections is clarified and faunal evidence presented.

RESSER, CHARLES ELMER

Cambrian system (restricted) of the southern Appalachians. New York: The Society, 1938. 140 p. illus. 25 cm. (Geological Society of America. Special papers. No. 15) \$1.25. 1225

Contents (abridged): Part I, Stratigraphy: Definition of Cambrian system. Formational names and synonyms. Definition of Cambrian formations. Correlations of Appalachian Cambrian formations. Distribution of strata. Part II, Paleontology: Algal deposits. Sponges. Archaeocyathinae. Echinoderms. Brachiopods. Gastropods. Trilobites. Phyllocarids. Works to which reference is made. Index.

Note: A definition of stratigraphic units and a description of the common or diagnostic fossils of the southern Appalachian Cambrian beds. Several modifications of stratigraphic terminology are made and new boundaries drawn.

ROY, SHARAT KUMAR

The Upper Ordovician fauna of Frobisher Bay, Baffin Land. Chicago: Chicago Natural History Museum, 1941. 212 p. illus. 32 cm. (Chicago Natural History Museum. Geology, memoirs. Vol. 2) Paper, \$3.50. 1225a

Contents: Narrative of the Expedition with notes on coastal geology of Labrador and Baffin Land: Description of fossils: Invertebrate sedis. Phylum Coelenterata: Class Anthozoa. Phylum Echinodermata: Class Cystoidea. Class Crinoidea. Phylum Molluscoidea: Class Bryozoa. Class Brachiopoda. Phylum Mollusca: Class Pelecypoda. Class Gastropoda. Class Cephalopoda. Phylum Arthropoda: Class Crustacea. Synopsis of fauna. Previous collections from Silliman's Fossil Mount. Age of Silliman's Fossil Mount. Bibliography. Index.

Note: The data and material upon which this paper is based were collected by the author during 1927 and 1928 while serving as geologist of the Rawson-MacMillan Expedition of the Field Museum to Labrador and Baffin Land. His chief task was to collect fossils from Silliman's Fossil Mount in Baffin Land and to make observations on the geology of the coasts visited. The main subject matter of the memoir consists of the description and the determination of the stratigraphic range of the fossils collected at Silliman's Fossil Mount. The narrative chapter at the beginning gives a bird's-eye view of the expedition as a whole. The work contains 146 illustrations, most of them from photographs.

RUEDEMANN, RUDOLF

Paleozoic plankton of North America. New York: The Society, 1934. 141 p. illus. 26 cm. (The Geological Society of America. Memoir 2) \$2.00. 1225b

Contents (abridged): Part I, Graptolites and associates. Faunas of littoral seaweeds and of sargasso-seas. Paleozoic plankton in general. Conditions of black shale accumulation. Survey of Paleozoic black shale faunas. Part II, Description of fossils: Algae. Sponges. Cnidarians. Brachiopods. Worms. Mollusks. Crustaceans. Part III: Bibliography. Explanation of plates. Index.

Note: A memoir presenting the evidence for the author's conclusion that the distribution with respect to rock facies of the graptolites and their associates results from their having lived in sargasso-meadows of Paleozoic sargasso-seas in both the Atlantic and the Pacific oceans. The occurrence and characteristics of these organisms are reviewed with a general survey of Paleozoic plankton and related forms.

SHIMER, HERVEY WOODBURN, AND ROBERT R. SHROCK

Index fossils of North America; a new work based on the complete revision and reillustration of Grabau and Shimer's "North American index fossils." New York: John Wiley & Sons, Inc., 1944. 837 p. illus. 28 cm. \$20.00. 1225c

Contents: Introduction. Protozoa. Porifera. Coelenterata. Echinodermata. Worms—Annelida (Annulata). Conodonts. Bryozoa (Polyzoa). Brachiopoda. Mollusca. Arthropoda. Fossil plants. Miscellaneous objects of probable organic origin. Index.

Note: A comprehensive description of invertebrate fossils which are used to identify and date geologic formations and strata of North America. While this volume resembles Grabau and Shimer's *North American index fossils*, New York, 1909–10, in general purpose and content, the extensive revision and introduction of new material actually make it a new work. The fossils are grouped into nine divisions or phyla with a further break down by genera and species. There is a general description of each phylum, and in the case of genus and species, stratigraphic range and geographic distribution are indicated. The acknowledgments of material which has been contributed by specialists or obtained from other publications provide an extensive bibliography. These are supplemented by a list of the standard reference works used for research in geology and paleontology. The illustrations and diagrams, which serve as a valuable adjunct to the text, occur in most cases after every page of text. Separate indexes to genera and species are provided.

STEPHENSON, LLOYD WILLIAM

The larger invertebrate fossils of the Navarro group of Texas (exclusive of corals and crustaceans and exclusive of the fauna of the Esccondido formation). Austin, Tex.: University of Texas, 1941. 641 p. illus. 25 cm. (University of Texas publication no. 4101) Paper, \$3.50; cloth, \$4.25. 1225d

Contents: Introduction. Classification of the Navarro group. General features of the group. Neylandville marl. Nacatoch sand. Corsicana marl. Kemp clay. Analysis of the Navarro fauna as a whole. Marine equivalents of the Navarro group in western United States. Marine equivalents of the Navarro group outside the United States. Navarro fossil localities in Texas. Systematic paleontology: Porifera. Vermes. Echinodermata. Molluscoidea. Mollusca: Pelycypoda. Scaphopoda. Gastropoda. Cephalopoda. Index.

Note: A descriptive taxonomy of the fossil invertebrate organ-

isms including the sponges, worms, echinoids, bivalves, tooth-shells, univalves, and chambered shells, based on the collections of the United States Geological Survey and the United States National Museum, with additions from the Bureau of Economic Geology of the University of Texas. The treatise does not include the Esccondido formation of the Rio Grande region, which since 1935 has been considered a unit of the Navarro group, because this evidence arrived too late for inclusion in the present publication. Ninety-five plates of photographs are presented, covering well over 1,000 figures. Scientific name, originator, original literature, description, measurements, types, distribution in Texas, outside distribution, and range are listed for each species.

WEAVER, CHARLES EDWIN

Paleontology of the Jurassic and Cretaceous of west central Argentina. Seattle, Wash.: University of Washington Press, 1931. 594 p. illus. 34 cm. (Memoirs of the University of Washington. Vol. 1) Paper, \$15.00. 1225e

Contents: Introduction. Geography. Stratigraphy. Geologic formations: Paleozoic. Leon Mahuida granite. Triassic. Jurassic. Lower Cretaceous. Middle Cretaceous diastrophism. Post Cretaceous history. Faunal localities in west central Argentina. Faunal table for the Jurassic and Lower Cretaceous. Literature. Descriptions of species.

Note: A monograph presenting the results obtained from field and laboratory investigations of the Jurassic and Cretaceous formations and faunas in the area lying approximately between the parallels 32° and 40° south latitude and the meridians 68° and 72° west of Greenwich. This area constitutes a single great stratigraphic and faunal province, and it was the desire of the author to investigate the faunas in their relations to former changing geographic environments as interpreted by the stratigraphy and to compare these faunas with those in similar provinces in the Andean region of South America as well as in Europe, Asia, and South Africa. From the data presented it is held possible to interpret the history of the physical changes in the environment throughout the entire basin of deposition for each of the epochs during the Jurassic and Cretaceous. After a biological analysis of the faunas of each formation, an attempt is made to determine the relations between the variations in the faunas in different parts of the embayment and their adaptation to the interpreted continuous changes in the physical environment. The bibliography lists 448 references to the world literature published between 1789 and 1928. There are 403 drawings and photographs of specimens and a stratigraphic correlation chart.

WEAVER, CHARLES EDWIN

Paleontology of the marine Tertiary formations of Oregon and Washington. Seattle, Wash.: The University of Washington Press, 1943. 789 p. illus. 25 cm. (University of Washington publications in geology. Vol. 5, December, 1943) Paper, \$13.75. 1226

Contents: Part I, Coelenterata, Vermes, Echinodermata, Molluscoidea, Mollusca, Pelycypoda, Scaphopoda: Introduction. Previous work. Correlation table. Description of species. Part II, Mollusca, Gastropoda, Cephalopoda, Arthropoda: Description of species. Additional species. Part III: Bibliography. Faunal localities. Correlation chart. Faunal tables. List of new names. Index.

Note: The purpose of this monograph is to place on record the marine invertebrate faunas of the Tertiary formations in Oregon and Washington with original and supplementary descriptions of the species and illustrations of the holotypes and with better preserved topotype and hypotype material. Due to the greater refinement in biologic classification in recent years many of the earlier descriptions and identifications of genera and species have undergone much revision. The present work attempts to bring these changes up to date and to illustrate the biologic characters of the holotypes of the Tertiary faunas based on collections in the several museums and paleontological institutions in different parts of the United States. The bibliography lists 336 references published between 1832 and 1942. There are 104 plates of photographs. Each of the three parts is bound separately but pagged continuously and sold as a set.

WEAVER, CHARLES EDWIN

Tertiary stratigraphy of western Washington and northwestern Oregon. Seattle, Wash.: Uni-

versity of Washington, 1937. 266 p. illus. 25 cm. (University of Washington. Publications in geology. Vol. 4) Paper, \$2.50. 1226a

Contents (abridged): Stratigraphy. Pre-Tertiary formations. Cretaceous. Tertiary: Eocene of eastern Washington. Puget group. Chuckanut formation. Cowlitz formation. Oligocene: Stratigraphic nomenclature. Stratigraphy of critical unit areas. Miocene: Clallam formation. Astoria formation. Faunal relations. Associated igneous rocks. Pliocene: Montesano formation. Quinault formation. Empire formation. Geologic structure. Geologic history. Bibliography. Tertiary faunal localities in Washington and Oregon.

Note: This monograph summarizes the results of a reinvestigation of the Tertiary stratigraphy and paleontology of western Washington and a part of northwestern Oregon, based upon new information and interpretations by geologists and paleontologists made between 1917 and 1937. The work includes a detailed study of 35 unit areas, for which geologic maps are presented. A bibliography of 362 references is included. The author's *Paleontology of the marine Tertiary formation of Oregon and Washington*, Seattle, 1942, described above forms a supplementary volume.

Protozoa

CAMPBELL, ARTHUR SHACKLETON, AND BRUCE L. CLARK

Miocene radiolarian faunas from southern California. New York: The Geological Society of America, 1944. 76 p. illus. 24 cm. (Geological Society of America. Special papers. No. 51) \$0.70. 1227

Contents: Geology. Ecology. Systematic description. Fossil localities. Literature cited. Explanation of plates. Index.

Note: A description of radiolarians found in samples of shale taken from two areas in southern California, the Palos Verdes Hills, and the Newport area.

CAMPBELL, ARTHUR SHACKLETON, AND BRUCE L. CLARK

Radiolaria from Upper Cretaceous of middle California. New York: The Society, 1944. 61 p. illus. 25 cm. (The Geological Society of America. Special papers. No. 57) \$0.60. 1228

Contents: Abstract. Introduction. Systematic description. References cited. Explanation of plates. Index.

Note: A description of radiolarian fauna obtained from a small limestone sample which came from top of a series of shales from near Tesla, California, and is probably older than Mareno.

CLARK, BRUCE LAWRENCE, AND ARTHUR S. CAMPBELL

Eocene radiolarian faunas from the Mt. Diablo area, California. New York: The Geological Society of America, 1942. 112 p. illus. 25 cm. (Geological Society of America. Special papers. No. 39) \$0.85. 1229

Contents: Abstract. Introduction and acknowledgments. Stratigraphy: Kellogg shale. Sidney shale. Comparison of radiolarian assemblages: Check list of Spumellaria. Check list of Nassellaria. General structure of Radiolaria. Systematic description. Literature cited. Explanation of plates. Index.

Note: This paper describes 127 species, sub-species, and varieties of Radiolaria, all of which are new and came from two shale members of the Upper Eocene series, north and northeast of Mount Diablo, California. A brief description of the stratigraphic relationships of the Tertiary formations in the area is given, with a detailed discussion of the lithology of the two shales and its probable significance.

CUSHMAN, JOSEPH AUGUSTINE

Foraminifera, their classification and economic use. Third edition, revised and enlarged,

with An illustrated key to the genera. Cambridge, Mass.: Harvard University Press, 1940. 535 p. illus. 24 cm. \$6.00. 1229a

Contents (abridged): The living animal. The test. Collecting and preparing material. Methods of study. Economic use. Geographic distribution. Geologic distribution. Trimorphism. Classification. Research problems concerning the Foraminifera. Systematic arrangement of the Foraminifera. Bibliography. An illustrated key to the genera of the Foraminifera. Index.

Note: An annotated systematic description of families, genera, and species of Foraminifera. In the third edition, the key to the families and genera, previously issued separately, has been included with the main text in a single volume. The pertinent literature published through 1939 has also been incorporated, and there are certain changes in classification based on new evidence. The work is founded upon the known geologic history of the genera, on the phylogenetic characters derived from a study of fossil material from all the continents, and upon a study of the ontogeny in numerous microspheric specimens which show the relationships much more definitely than megalospheric specimens of the same species. The bibliography lists about 700 references and there are 48 plates of illustrations.

CUSHMAN, JOSEPH AUGUSTINE

A monograph on the foraminiferal family Nonionidae. Washington, D.C.: Government Printing Office, 1939. 100 p. illus. 29 cm. (United States. Geological Survey. Professional paper no. 191) Paper, \$0.30. 1230

Contents: Introduction. Acknowledgments. Available material. Questionable material. Systematic descriptions. Index.

Note: A systematic description of the various genera and species, both fossil and recent, of this family, intended to correct errors of earlier classifications and thus define the species more accurately. All of the types described are illustrated.

CUSHMAN, JOSEPH AUGUSTINE

Upper Eocene Foraminifera of the southeastern United States. Washington, D.C.: Government Printing Office, 1935. 88 p. illus. 29 cm. (United States. Geological Survey. Professional paper 181) Paper, \$0.25. 1231

Contents: Introduction. Litulidae. Textulariidae. Verneulinidae. Valvulinidae. Miliolidae. Ophthalmitidae. Lagenidae. Polymorphinidae. Nonionidae. Camerinidae. Heterohellicidae. Buliminidae. Ellipsoidinidae. Rotaliidae. Cassidulinidae. Chilostomellidae. Hantkeninidae. Globorotaliidae. Anomalinidae. Planorbulinidae. Rupertiidae. Index.

Note: This paper describes the Foraminifera (except the Orbitoididae) of Upper Eocene (Jackson) age from the states between North Carolina and Texas. About 203 species or varieties, including 47 new species, are described, and most of them are figured. Faunas of both shallow and deep water facies are recognized. There are 23 plates of drawings together with a large number of distribution charts for the species.

ELLIS, BROOKS FLEMING, AND ANGELINA R. MESSINA

Catalogue of Foraminifera. New York: The American Museum of Natural History, 1940-. 35 v. illus. 28 cm. (Special publication of the American Museum of Natural History) \$275.00 per set (see price details in *Note*). 1231a

Note: This exhaustive catalogue presents in a uniform arrangement the essential data for each genus, species, and variety of Foraminifera, based on a comprehensive survey of the world literature of the field which has appeared during the past 150 years. The volumes, which are published in loose leaf format to permit insertion of supplementary material issued at intervals by the Museum, provide a ready means of access to those portions of the literature in which the genera and species of Foraminifera have been described and illustrated. Genera, species, and varieties that are generally accepted as belonging to the Foraminifera are presented under the name originally applied

by its author, provided this name was Linnaean, and that it was accompanied by a description, indication, or definition. Synonyms, homonyms, and new names are included. Each genus, species, or variety described is treated as a separate unit, arranged alphabetically by genera, alphabetically by species within each genus, and alphabetically by varieties within each species. Generic units contain the type reference, a transcript of the original description, type species, and a chronologically arranged list of subsequent references. Species units include type reference, type figure, a transcript of the original description, type level and locality, depository of types, and a chronologically arranged list of subsequent references. Type figures have been reproduced photographically from the publication in which the original description appeared. The treatment of the material has been objective throughout in that the work presents facts rather than opinions, the authors commenting only when necessary to a clearer understanding of the data. The numerous citations of pertinent literature under each unit constitute an extensive bibliography of over 6,000 references on the subject. Of considerable value primarily to the petroleum industry, the work is also an important research tool for the geologist, the oceanographer, the specialist in protozoan research, and the micropaleontologist. Under present arrangements the purchase price of the complete set includes a membership to the American Museum of Natural History in New York City. Revisions and supplementary material published in subsequent years are available under a subscription plan, and members are granted access to the original source material in the museum's Department of Micropaleontology. The sale of the work is directed mainly to organizations such as museums, universities, libraries, petroleum companies, and other research groups which will undertake to maintain the material up to date by subscribing to the revisions, thus realizing its maximum value as a reference work.

GALLOWAY, JESSE JAMES

A manual of Foraminifera. Bloomington, Ind.: The Principia Press, Inc., 1933. 483 p. illus. 25 cm. (James Furman Kemp memorial series. Publication no. 1) Paper, \$6.50. 1231b

Contents (abridged): Introduction. Foraminifera as Protozoa. Classification of Foraminifera. Principles of taxonomy as applied to Foraminifera. Evolution and its corollaries. Morphology of the test. Reproduction. Geographic distribution. Geologic distribution. Systematic descriptions. Miscellaneous generic names. Glossary. Index.

Note: Under each genus is given the author, date, the genotype and the reason it is the type, by whom, when, and where the genus was first defined and illustrated, the age and original locality of the genotype, important references, and all determined synonyms. Following this is a complete description of each genus, how it occurs, the shape of the test, the character of the chambers and method of addition, the character of the wall and ornamentation, the character of the aperture, the range in size of adult species, the habitat, living species, range of described species as determined by examination of published descriptions, figures and ranges, and personal experience. Keys are given for each family, subfamily, and genus. Sizes of specimens are included in the generic descriptions and there are 42 plates of figures.

KORNFELD, MOSES MARION

Recent littoral Foraminifera from Texas and Louisiana. Stanford University: Stanford University Press, 1931. 24 p. illus. 25 cm. (Contributions from the Department of Geology of Stanford University. Vol. 1, no. 3) Paper, \$0.75; cloth, \$1.25. 1232

Contents: Families: Lituolidae, Miliolidae, Trochamminidae, Nonionidae, Rotaliidae. Index to genera and species.

Note: A paper based on examination of 27 selected samples of beach material from 80 stations along the coast of the Gulf of Mexico from the Rio Grande to the Mississippi river. Of interest to geologists, particularly students of stratigraphy and paleontology. A short bibliography is included.

MARTIN, LOIS TICKNOR

Check list of American Cretaceous Foraminifera. Ann Arbor, Mich.: Edwards Brothers, Inc., 1936. 21 p. 27 cm. Paper, \$5.00. 1232a

Note: The species described in 100 papers on Cretaceous Foraminifera from North and South America and the West Indies are here compiled into a check list to show geologic range and geologic-geographic distribution. The list includes 852 species, the last nomenclatural revisions being used. An accompanying species index gives the older names and also refers to the respective publications from which the data were derived, these publications being listed in an appended bibliography. The check list proper consists of two 18 x 34" charts printed on linen-backed paper giving number and name of each species of Foraminifera, together with index numbers, as reported from various localities throughout the region indicated.

VAUGHAN, THOMAS WAYLAND, AND W. STORRS COLE

Preliminary report on the Cretaceous and Tertiary larger Foraminifera of Trinidad, British West Indies. (With an appendix on new species of *Helicostegina* from Soldado rock, by Thomas F. Grimsdale.) New York: The Geological Society of America, 1941. 137 p. illus. 25 cm. (Geological Society of America. Special papers. No. 30) \$1.75. 1233

Contents: Introduction. Stratigraphy of Trinidad as related to the larger Foraminifera. Earlier studies of the larger Foraminifera of Trinidad. Explanations of locality symbols and numbers. Species, with their probable horizons, their localities in Trinidad, and their occurrence elsewhere. Stratigraphic distribution, geologic correlation, and ecology. Systematic account of the faunas. Literature cited. Appendix. Explanation of plates. Index.

Note: The first attempt to treat in one paper all the larger Foraminifera found in the indicated formations, and intended only as a preliminary report. An attempt has been made to make each form studied identifiable by means of notes, descriptions, and figures.

Porifera

OKULITCH, VLADIMIR JOSEPH

North American Pleospongia. New York: The Society, 1943. 112 p. illus. 24 cm. (Geological Society of America. Special papers. No. 48) \$1.25. 1234

Contents (abridged): Abstract. Introduction and acknowledgments. Previous work. Methods of study. Part I, Distribution, morphology, and physiology. Part II, Affinities and classification. Part III, Description of North American Pleospongia. Literature cited. Explanation of plates. Index.

Note: Geographic and stratigraphic distribution of Pleospongia, ecology, and faunal associations are considered. Morphology, ontogeny, and phylogeny are described in detail. All known American species are fully described and illustrated.

Coelenterata

STEWART, GRACE ANNE

Middle Devonian corals of Ohio. New York: The Society, 1938. 120 p. illus. 25 cm. (Geological Society of America. Special papers. No. 8) \$1.25. 1235

Contents (abridged): Review of previous work. Stratigraphic summary. Faunal summary. Register of localities and horizons. Description of genera and species. Bibliography. Explanation of plates. Index.

Note: A monograph which brings together the published geological data on the Devonian corals of Ohio, revises many specific descriptions, adds new forms, and eliminates synonymy whenever possible. The ecological distribution of corals has not been discussed.

Echinodermata

BASSLER, RAY SMITH, AND MARGARET W. MOODEY

Bibliographic and faunal index of Paleozoic pelmatozoan echinoderms. New York: The Society, 1943. 734 p. 25 cm. (Geological Society of America. Special papers. No. 45) \$4.75. 1236

Contents: Systematic classification of Paleozoic Pelmatozoa. Faunal lists of species. Bibliography of genera and species. Classification of fragmentary crinoidal remains. "Collective group" name.

Note: This index and bibliography is based on the original work of Dr. Frank Springer, authority on Paleozoic crinoids. It not only provides an index to the literature of Paleozoic pelmatozoan echinoderms, but also records the geological occurrence of the species.

MOORE, RAYMOND CECIL, AND LOWELL R. LAUDON

Evolution and classification of Paleozoic crinoids. New York: The Society, 1943. 153 p. illus. 25 cm. (Geological Society of America. Special papers. No. 46) \$1.00. 1237

Contents (abridged): Abstract. Introduction. Previous work on classification of Paleozoic crinoids. Major divisions of the crinoids. Symbols for designation of crinoid parts. General evolutionary trends among Paleozoic crinoids. Subclass Inadunata Wachsmuth and Springer. Subclass Flexibilia Zittel, 1879. Subclass Camerata Wachsmuth and Springer. Crinoids of doubtful classification. Unclassified genera. Comparison of revised classification of Paleozoic crinoids and those of earlier publications. References cited. Explanation of plates. Index.

Note: This paper summarizes extensive researches on Paleozoic crinoids, giving the authors' conclusions as to (1) the natural main divisions among crinoids, (2) the significant evolutionary trends shown by each main group, and (3) a revised classification of Paleozoic crinoids of the world.

Molluscoidea

CLOUD, PRESTON ERCELLE

Terebratuloid Brachiopoda of the Silurian and Devonian. New York: The Geological Society of America, 1942. 182 p. illus. 24 cm. (Geological Society of America. Special papers. No. 38) \$1.50. 1238

Contents (abridged): Part I, General discussion: General considerations. Material studied. Technique of preparation. Terebratuloid morphology. Classification and distribution of the early terebratuloids; principle of classification; suggestions on phylogeny; distribution. Part II, Systematic descriptions: Family Centronellidae. Family Rhipidothyridae. Family Stringocephalidae. Family Meganteridae. Family Dielasmataidae. Incerta sedis. Nonterebratuloids. Bibliography. Explanation of plates. Index of systematic names.

Note: A study and revision of the Paleozoic members of the terebratuloid group of brachiopods, with attention focussed on the Silurian and Devonian forms. The treatment of the systematic descriptions, the technique of preparing the material for study, and the general morphology are outlined. A hypothetical subfamily phylogeny is introduced and the approximate stratigraphic and geographic ranges of the genera are tabulated.

HERTLEIN, LEO GEORGE, AND U. S. GRANT

The Cenozoic Brachiopoda of western North America. Berkeley, Calif.: University of California Press, 1944. 236 p. illus. 26 cm. (University of California publications in mathematical and physical sciences. Vol. 3) Paper, \$3.00. 1239

Note: An attempt to include all the reports of brachiopods in the Tertiary and Quaternary formations of western North America. All living species known to the authors from the western shores of the Americas from Alaska to Cape Horn are included, as well as fossil species. The bibliography includes footnote references and references in the text.

ULRICH, EDWARD OSCAR, AND G. ARTHUR COOPER

Ozarkian and Canadian Brachiopoda. New York: The Society, 1938. 323 p. illus. 25 cm. (Geological Society of America. Special papers. No. 13) \$3.25. 1240

Contents (abridged): Part I, General and morphologic discussion: Concept of family, genus, and species. Homoeomorphy. Morphology. Shell structure. Part II, Formation and range of genera and species: Formation names. Genera and species of Ozarkian and Canadian Brachiopoda. Cambrian species incorrectly assigned. Part III, Systematic descriptions: Order Atremata. Order Neotremata. Suborder Orthoidea. Suborder Clitambonoidea. Suborder Strophomenoidea. Suborder Syntrophoidea. Selected bibliography. Index.

Note: Data on the formation and range, taxonomy and systematic descriptions of 319 species representing 57 genera of Brachiopoda from all regions of Ozarkian and Canadian strata known in North America, except Newfoundland. Many new genera are introduced.

Polyzoa

CANU, FERDINAND, AND RAY S. BASSLER

The bryozoan fauna of the Vincentown lime-sand. Washington, D.C.: Government Printing Office, 1933. 108 p. illus. 24 cm. (Smithsonian Institution. United States National Museum. Bulletin 165) Paper, \$0.20. 1240a

Contents: Introduction. Systematic descriptions: Order Cheilostomata, suborder Anasca: Families: Biflustridae. Hincksiniidae. Alderiniidae. Opeulidae. Aspidostomidae. Setosellidae. Coscinopleuridae. Suborder Ascophora: Families: Lagynoporidae. Andrioporidae. Pelmatorpidae. Hippothoidae. Acroporidae. Escharellidae. Phylactellidae. Hippopodiniidae. Reteporidae. Cel-leporidae. Order Cyclostomata: Subdivision Parallelata. Subdivision Rectangulata. Doubtful species. Explanation of plates. Index.

Note: A systematic description of the Vincentown Bryozoa from the formation of Vincentown limesand on the coastal plain of New Jersey running diagonally across the state in a northeast-southwest direction. There are 21 plates of photographs and a short bibliography.

CONDRA, GEORGE EVERT, AND M. K. ELIAS

Study and revision of *Archimedes* (Hall). New York: The Society, 1944. 243 p. illus. 24 cm. (Geological Society of America. Special papers. No. 53) \$2.50. 1241

Contents (abridged): Part I, General discussion and morphology: *Archimedes* in the United States. *Archimedes* in other countries. Geologic range. Discovery in Pennsylvanian rocks of the United States. Technique in collecting and preparation. Taxonomy. Morphology. Meshwork. Microstructure of encrusting tissue in *Archimedes* and other Fenestellidae. Significance and origin of *Archimedes* growth form. History of classification of species of *Archimedes* and principles involved. Diagnosis of genus *Archimedes* Hall. Glossary of morphological and microstructural terms pertaining to *Archimedes*. Part II, Systematic description. References cited. Explanation of plates. Index.

Note: An investigation of the taxonomic relations and the nature of the fossil genus *Archimedes* from extensive collections from the Mississippian of midwestern and western United States, including the classification of 13 new species. The compound nature of bryozoan-algal growth is hypothesized.

Mollusca

DALL, WILLIAM HEALEY, AND OTHERS

A manual of the recent and fossil marine pelecypod mollusks of the Hawaiian Islands, by William Healey Dall, Paul Bartsch, and Harald Alfred Rehder. Honolulu, Hawaii: Bernice P. Bishop Museum, 1938. 233 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 153) Paper, \$4.00. 1242

Contents: Introduction. Phylum Mollusca: Class Pelecypoda, Order Taxodonta: Superfamily Nuculoidea, Superfamily Arcoidea, Order Dysodonta: Superfamily Mytiloidea, Superfamily Pterioidea, Superfamily Pectinoidea, Order Heterodonta: Superfamily Carditoidea, Superfamily Isocardioidea, Superfamily Cyamioidea, Superfamily Gaimardioidea, Superfamily Lucinoidea, Superfamily Erycinioidea, Superfamily Chamoidea, Superfamily Cardioidea, Superfamily Veneroidea, Superfamily Mactroidea, Superfamily Tellinoidea, Order Desmodonta: Superfamily Saxicavoidea, Superfamily Gastrochaenoidea, Superfamily Adesmoidea, Suborder Anomalodesmata: Superfamily Pandoroidea, Superfamily Poromyoidea. Index.

Note: Intended mainly as a technical manual of the Hawaiian species of marine pelecypod mollusks, which is to serve the people of Hawaii for the determination of their mollusks. General discussion of general relationships with congeners from other corners of the world has been purposely avoided as beyond the scope of the present paper. The material is based on the United States National Museum collection of Hawaiian marine mollusks, the collections made by the U.S. Bureau of Fisheries at much greater depth, and the specimens collected by the authors. There are 58 plates of photographs.

GARDNER, JULIA ANNA

The molluscan fauna of the Alum Bluff group of Florida: Part VI, Pteropoda, Opisthobranchia, and Ctenobranchia (in part). Washington, D.C.: Government Printing Office, 1937. 170 p. illus. 29 cm. (United States Geological Survey. Professional paper 142-F) Paper, \$0.45. 1243

Contents: List of localities. Introduction. Systematic descriptions: Class Gastropoda. Subclass Euthyneura. Order Pteropoda. Suborder Thecosomata. Family Cavolinidae. Order Opisthobranchia. Suborder Tectibranchiata. Subclass Streptoneura. Order Ctenobranchia. Suborder Stenoglossa. Superfamily Toxoglossa. Superfamily Rhachiglossa. Index.

Note: The Alum Bluff deposits consist of a series of sands and clays carrying a varied and prolific fauna. Three distinct faunas are recognized in the deposits, and largely on the basis of these the Alum Bluff is here elevated to the rank of a group and divided into three formations. The Mollusca of this group include between 800 and 900 species, most of which are described and classified in this series of monographs. Earlier titles in the series have been as follows: Part I, Prionodesmacea and Anomalodesmacea, 1926; Part II, Astartacea, Carditacea, Chamacea, 1926; Part III, Lucinacea, Leptonacea, Cardiacea, 1926; Part IV, Veneracea, 1926; Part V, Tellinacea, Solenacea, Mactracea, Myacea, Molluscoidea, 1928. These have been published as United States Geological Survey Professional paper 142 parts A to E respectively, each of which is sold separately and contains its own index. The present paper covers all of the opisthobranchs and eight large families of the ctenobranchs.

HENDERSON, JUNIUS

Fossil non-marine Mollusca of North America. Washington: The Society, 1935. 313 p. 24 cm. (Geological Society of America. Special papers. No. 3) \$1.75. 1244

Contents: Introduction. Systematic list of species. Formation and locality lists of species. Systematic annotated catalogue. Bibliography. Index.

Note: A catalogue of all the species known to the author, except those from post-Tertiary deposits, and the intention is to list all references made for all species. The arrangement is systematic rather than alphabetic. There are 22 pages of bibliography and a full index.

KEEN, ANGELINE MYRA, AND HERDIS BENTSON

Check list of California Tertiary marine Mollusca. New York: The Society, 1944. 280 p. illus. 24 cm. (The Geological Society of America. Special papers. No. 56) \$1.85. 1245

Contents (abridged): Introduction. Discussion. Terminology. Check list. Pelecypoda. Scaphopoda. Gastropoda. Register of frequently mentioned localities. Bibliography. Index.

Note: An objective index to the literature listing figured specimens of California marine Mollusca from Paleocene to Pliocene (up to but not including Lomita correlatives). The list is divided into three sections: Pelecypoda comprising 232 genera and 817 species; Scaphopoda, 2 genera and 14 species; Gastropoda, 308 genera and 906 species. Approximately half these species occur in Eocene formations. Genera with greatest number of species are Pecten, Turritella, Cancellaria, and Tellina.

KINDLE, EDWARD MARTIN, AND A. K. MILLER

Bibliographic index of North American Devonian Cephalopoda. New York: The Society, 1939. 179 p. 25 cm. (Geological Society of America. Special papers. No. 23) \$1.00. 1246

Contents: Tentative classification of American Devonian cephalopod genera. Bibliography. Catalogue of genera and species. North American Devonian formation names. References.

Note: Intended as the first unit of a bibliographic index to fill the gap between the following two volumes: S. Weller, *A bibliographic index of North American carboniferous invertebrates*, Washington, D.C.: United States Geological Survey Bulletin no. 153, 1898; and R. S. Bassler, *Bibliographic index of American Ordovician and Silurian fossils*, Washington, D.C.: Government Printing Office, 1915, Smithsonian Institution Bulletin no. 2. Bibliographic references are arranged under genera and species, covering all literature on North American Devonian cephalopods published prior to January 1, 1939. A list of the various North American Devonian formations with their approximate areal distribution and position in the Devonian system is included.

KNIGHT, JAMES BROOKES

Paleozoic gastropod genotypes. New York: The Society, 1941. 510 p. illus. 25 cm. (Geological Society of America. Special papers. No. 32) \$4.50. 1247

Contents: Procedure. Glossary. Descriptions of genotype species. References. Key to the plates. Explanations of the plates. Index.

Note: The work consists of descriptions and illustrations of the genotype species of each generic name proposed for Paleozoic Gastropoda before 1938. Descriptions are listed alphabetically, each treatment including genotype, holotype, paratype, stratigraphic position, type locality, description, and discussion. Eighteen pages of references are given.

MERRIAM, CHARLES WARREN

Fossil *Turritellas* from the Pacific Coast region of North America. Berkeley, Calif.: University of California Press, 1941. 213 p. illus. 27 cm. (University of California publications. Bulletin of the Department of Geological Sciences. Vol. 26, no. 1) Paper, \$2.50. 1247a

Contents (abridged): Introduction. Morphology of the genus *Turritella*. Ecology. *Turritella*-like gastropods of the Paleozoic and early Mesozoic. Classification of the *Turritellidae*. Classification of Pacific North American species. Recent species of *Turritella* reported in Pliocene and Pleistocene deposits of Lower California and Mexico. Descriptions of Pacific North American species, subspecies, and varieties.

Note: A descriptive catalogue of Pacific North American species of fossil *Turritellas*, one of the most abundant and highly diversified molluscan genera found in marine deposits of this region. The work includes a classification, systematic description, an adequate set of illustrations, the recording of available data regarding stratigraphic and geographic distribution of each species or stock, and an interpretation of evolutionary history wherever possible. There are 19 text figures and a map.

MILLER, ARTHUR K.

The cephalopods of the Bighorn formation of the Wind River Mountains of Wyoming. New Haven, Conn.: Yale University Press, 1932. 104 p. illus. 24 cm. (Connecticut Academy of Arts and Sciences. Transactions. Vol. 31, p. 193-297, February) Paper, \$2.75. 1248

Contents (abridged): Introduction. The Bighorn formation: Character and stratigraphic relationships. Fauna. Age. The cephalopods—their distribution and relationships. Description of species.

Note: The cephalopods form a very conspicuous part of the fauna of the Bighorn formation, but had received little attention up to the time of the study here reported. The greater part of the material on which this report is based was collected by the writer during the summer of 1927; the rest was collected on other trips to this region or was secured from the paleontological collections of the University of Missouri. Two of the specimens, representing two different genera, were found in the dolomite, but the great majority of the cephalopods came from the Lander sandstone. They are new, but undoubtedly belong to a widely distributed arctic Richmond fauna that is known from various localities in central Canada and arctic America. The article is illustrated by 31 plates showing photographs of specimens.

MILLER, ARTHUR K.

Devonian ammonoids of America. New York: The Society, 1938. 262 p. illus. 25 cm. (Geological Society of America. Special papers. No. 14) \$2.25. 1249

Contents: Introduction. Distribution of Devonian ammonoids. Terminology. Phylogeny of the early ammonoids. Classification of the early ammonoids. Systematic paleontology. Bibliography. Index.

Note: A study based on the use of the early ammonoids for stratigraphic purposes, particularly in the American Devonian. The work correlates European and American literature and presents a systematic paleontology as a basis for further research, proposing a more uniform system of nomenclature.

MILLER, ARTHUR K., AND W. M. FURNISH

Permian ammonoids of the Guadalupe Mountain region and adjacent areas. New York: The Society, 1940. 242 p. illus. 24 cm. (Geological Society of America. Special papers. No. 26) \$2.25. 1250

Contents (abridged): Introduction and acknowledgments. Shell morphology. Preservation and lithologic association. Classification. Occurrence. Permian ammonoid zones. Systematic paleontology. Addendum. Bibliography. Index.

Note: A study of the ammonoid faunas of the Guadalupe Mountain area, which compares and relates these faunas with those found in the well-known Glass Mountain sequence. The writers have studied collections of Permian ammonoids not only from both these regions but also those from various localities in North America and other continents.

OSTERGAARD, JENS MATHIAS

Recent and fossil marine Mollusca of Tongatabu. Honolulu: Bernice P. Bishop Museum, 1935. 59 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 131) Paper, \$1.00. 1250a

Contents: Introduction. Geography. Distribution and ecology of Mollusca. Geology. Systematic treatment. Summary. Index of recent and fossil Mollusca.

Note: The chief purpose of this paper is to throw light on the geological age of the limestone of Tongatabu and on the climatic and ecological conditions under which it was formed. A study of the recent molluscan fauna is here made the basis of the larger study of fossil forms. The systematic treatment gives scientific name, synonymy, name of originator and original publication, habitat, distribution, and general notes.

REINHART, PHILIP WINGATE

Mesozoic and Cenozoic Arcidae from the Pa-

cific Slope of North America. New York: The Society, 1943. 117 p. illus. 25 cm. (Geological Society of America. Special papers. No. 47) \$1.25. 1251

Contents (abridged): Abstract. Introduction. Pacific Slope species. Systematic descriptions. Bibliography. Explanation of plates. Index of systematic names.

Note: This paper deals with the description, stratigraphic and geographic occurrences and relationships of the molluscan family Arcidae as represented on the Pacific Slope of North America, including a summary of reports previously published and a new catalogue and systematic revision of the living and fossil arcid species from the Pacific Slope.

SCHENCK, HUBERT GREGORY

Nuculid bivalves of the genus *Acila*. New York: The Society, 1936. 149 p. illus. 24 cm. (Geological Society of America. Special papers. No. 4) \$1.25. 1252

Contents (abridged): Part I, Genus *Acila*. Part II, Catalogue of species. Part III, Reference material: Selected bibliography. Index.

Note: A monograph presenting the results of a study of all the species of the genus *Acila* as a basis for understanding its biostratigraphic significance. The body of the work is a catalogue of species. Notes on the anatomy, habitat, and locomotion of the bivalves are included in the descriptions, and the definitions of the genus and subgenera are followed by notes on the criteria used in identifying species. Most emphasis is placed upon species from formations assigned to the Oligocene series.

SMITH, JAMES PERRIN

Lower Triassic ammonoids of North America. Washington, D.C.: Government Printing Office, 1932. 199 p. illus. 29 cm. (United States Geological Survey. Professional paper 167) Paper, \$0.70. 1253

Contents: Introduction. Bibliography. General features of the Lower Triassic ammonoid fauna. Lower Triassic faunal zones of North America. Lower Triassic interregional correlation zones. Outline of phylogeny of Triassic ammonites. Systematic descriptions: Gephyrocera, Prolecanitoidea, Xenodiscidae, Meekoceratidae, Hungaritidae, Ceratitidae, Beloceratoidea, Sageroceratidae, Dimorphoceratoidea, Haueritidae, Thalassoceratidae, Prolecanitoidea, Gastriocerata, Arcestoidea, Cyclolobidae, Ptychitidae, Tropitidae, Celtitidae, Haloritidae. Index.

Note: A systematic classification and description of all the Lower Triassic ammonoids known in America as of 1930, based on the author's more than thirty years of field work with the assistance of numerous field parties of the United States Geological Survey, Stanford University, and the University of California. One hundred and forty-five species are described and illustrated in the present paper, together with notes on their stratigraphic position and their occurrence in other parts of the world. There are 81 plates of photographs and the bibliography contains 94 references to the world literature of the subject.

TURNER, FRANCIS EARL

Stratigraphy and Mollusca of the Eocene of western Oregon. New York: The Society, 1938. 130 p. illus. 24 cm. (Geological Society of America. Special papers. No. 10) \$1.25. 1254

Contents (abridged): Part I, Stratigraphy: Occurrence of Eocene fossil localities. Glide section. Glide fauna. Drain-Comstock section. Eugene section. Capo Arago section. Summary. Part II, Description of species: Echinoidea, Pelecypoda, Gastropoda, Scaphopoda. Works to which reference is made. Index.

Note: A technical paper summarizing an investigation of the stratigraphic succession of the marine Eocene deposits and an attempt to place them in their proper position in the Pacific Coast sedimentary sequence by means of the molluscan remains.

ULRICH, EDWARD OSCAR, AND OTHERS

Ozarkian and Canadian cephalopods, by E. O. Ulrich, Aug. F. Foerste, A. K. Miller, and W. M. Furnish. New York: The Geological So-

ciety of America, 1942-44. 3 v. illus. 24 cm. (Geological Society of America. Special papers. No. 37, 49, 58) Part 1, \$2.00; Part 2, \$2.50; Part 3, \$4.00. 1255

Contents: Part I (Volume I), Nautilicones: Abstract. Introduction. Previous work. Occurrence. Shell morphology. Classification. Systematic paleontology: Family Deltoceratidae. Family Lituitidae. Family Plectoceratidae. Family Tarphyceratidae. Family Trocholitidae. Bibliography. Index. Part II (Volume II), Brevicones: Abstract. Introduction. Previous work. Occurrence. Shell morphology. Classification. Systematic paleontology. Bibliography. Explanation of plates. Index. Part III, Longicones: Abstract. Introduction. Previous work. Occurrence. Shell morphology. Classification. Systematic paleontology. Family Stenonoceratidae. Family Endocycloceratidae. Family Bassleroceratidae. Family Rudolferatidae. Family Orthoceratidae. Family Robsonoceratidae. Family Spyroceratidae. Family Endoceratidae. Family Sueoceratidae. Family Bathmoceratidae. Family Eothinoceratidae. Supplement. Family Piloceratidae. Family Cyclostomiceratidae. Family Plectronoceratidae. Family Cyrtendoceratidae. Family Trocholitidae. Bibliography. Addendum. Explanation of plates. Index.

Note: The second in a series of monographs on Ozarkian and Canadian fauna, the first being Ulrich and Cooper's *Ozarkian and Canadian Brachiopoda*, New York, 1940 (see Index). Part I of the present study of cephalopods covers the occurrence, morphology, and systematic descriptions of the nautilicones, with fifty-seven pages of photographs of fossil shells. Part II deals similarly with the brevicones, and has seventy pages of photographs. The third volume covers the longicones. There are 68 pages of photographs of fossil shells. Each volume may be used separately.

VOKES, HAROLD ERNEST

Molluscan faunas of the Domengine and Arroyo Hondo formations of the California Eocene. New York: New York Academy of Sciences, 1939. 246 p. illus. 24 cm. (New York Academy of Sciences. Annals. Vol. xxxviii) Paper, \$2.00. 1255a

Contents: Introduction. Historical review. Domengine stage: Domengine formation. Capay stage: Arroyo Hondo formation. Relationships of the faunal horizons in the Vallecitos and Coalinga areas. Correlation of the Vallecitos-Coalinga Eocene with other Pacific Coast marine Eocene formations. Systematic paleontology. Index.

Note: This monograph records the faunas and the faunal sequence of the Eocene horizons which are exposed in the Vallecitos and Coalinga areas along the western border of the San Joaquin valley, California. In the systematic catalogue emphasis has been placed on the study of the fauna of the Domengine formation, the type section of which occurs north of Coalinga on the Domengine ranch, since it is thought that a knowledge and understanding of this fauna is of supreme importance in the use of this horizon as a faunal unit throughout the West Coast Tertiary sequence. With 190 references and 22 plates of photographs.

WOODRING, WENDELL PHILLIPS

Lower Pliocene mollusks and echinoids from the Los Angeles basin, California, and their inferred environment. Washington, D.C.: Government Printing Office, 1938. 67 p. illus. 29 cm. (United States. Geological Survey. Professional paper 190) Paper, \$0.30. 1256

Contents: Introduction. New systematic names proposed. General features of Los Angeles basin. Repetto formation of Los Angeles basin. Larger fossils from Repetto formation. Inferred environment of larger fossils. Age relations of larger fossils. Descriptions of species. Index.

Note: Twenty-six forms of mollusks and one echinoid are described from the Repetto formation of the region indicated, and other large fossils are recorded. These fossils were collected from outcrops and from cores representing 56 wells distributed widely over the basin. They have been assigned to three depth-range groups on the assumption that they represent essentially the same depth range as modern species from the eastern Pacific, to which they are closely allied. Numerous references are given in footnotes and there are nine plates of photographs.

Trilobites

DELO, DAVID MARION

Phacopid trilobites of North America. New York: The Society, 1940. 135 p. illus. 25 cm. (Geological Society of America. Special papers. No. 29) \$1.00. 1257

Contents: Introduction and acknowledgments. Summary of previous work. Principles of classification. Evolutionary development. Systematic description: Superfamily Phacopidae. Family Phacopidae. Family Dalmanitidae. Bibliography. Index.

Note: A study of the North American representatives of the Phacopidae, including all available types of species previously described and several new types. Reallocation of many old species has been made in order to place them in their proper systematic relationship.

Crustacea

BASSLER, RAY SMITH, AND BETTY KELLETT

Bibliographic index of Paleozoic Ostracoda. New York: The Geological Society of America, 1934. 500 p. illus. 25 cm. (Geological Society of America. Special papers. No. 1) \$2.50. 1258

Contents (abridged): General considerations. Classification and diagnosis. Faunal lists. Bibliography. Catalogue of genera and species.

Note: An illustrated bibliographic index and synonymic catalogue of fossil Ostracoda. Genera and species are listed in an alphabetical order and each entry is followed by a list of publications from circa 1840 to early in 1934 in which the genus or species has been mentioned or discussed.

RATHBUN, MARY JANE

Fossil Crustacea of the Atlantic and Gulf coastal plain. New York: The Society, 1935. 160 p. illus. 25 cm. (Geological Society of America. Special papers. No. 2) \$1.25. 1259

Contents: Introduction. List of species and distribution. Detailed description of genera and species: Cretaceous, Eocene, Oligocene, Miocene, Pliocene, Pleistocene. Bibliography. Explanation of plates. Index.

Note: A study of the comparatively scarce Crustacea, based largely on the collections of the United States Geological Survey and the United States National Museum. Three new genera are listed: *Prehepatus*, *Ophthalmoplax*, and *Scyllarella*. Tables are given showing geographic and stratigraphic distribution of species in each period. Treatment under descriptions is: general discussion and description, measurements, occurrence, and collection in which examined.

Arachnida

PETRUNKOVITCH, ALEXANDER IVANOVITCH

A study of amber spiders. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1942. 345 p. illus. 23 cm. (Connecticut Academy of Arts and Sciences. Transactions. Vol. 34, pages 119-464) \$6.00. 1259a

Contents: Introduction. Acknowledgments. Material. Methods of study. Relationship of spiders to other Arachnida. Evolutionary trends in spiders. Taxonomic value of characters. Relationship of the spider fauna of the Baltic amber to recent spiders. Remarks concerning the definitions of families and genera. Description of Baltic amber spiders. References. Index.

Note: The greater part of this monograph is devoted to a systematic description of Baltic amber spiders, suborder Dipneumonomorphae, Cenozoic spiders which left numerous fossil remains in the amber deposits of the Baltic region. Each specimen is described in detail, with body measurements and char-

acteristic features of anatomy. The 140 specimens presented represent 27 families, five of which are new; four new subfamilies, 48 new genera, and 69 new species. There are 627 drawings and photographs of specimens included.

RAASCH, GILBERT OSCAR

Cambrian Merostomata. New York: The Society, 1939. 146 p. illus. 24 cm. (Geological Society of America. Special papers. No. 19) \$1.25. 1259b

Contents (abridged): Part I, Taxonomy: Class Arachnida. Subclass Merostomata. Part II, Morphology of the Aglaspida: Integument. Cephalothorax. Carapace. Abdomen. Part III, Homology and phylogeny. Part IV, Distribution: aglaspid chronology. Stratigraphic occurrence and habitat. Middle Cambrian. Upper Cambrian. Trempealeau formation. Madison formation. Additional works to which references are made. Index.

Note: A study and reclassification of the order Aglaspida based on the collection of fossils made between 1923 and 1935 from the Cambrian rocks of southwest Wisconsin. The Aglaspida are considered by the author to be the most primitive group of Arachnida, and a new phylogenetic classification for the Merostomata is proposed.

Insects

CARPENTER, FRANK MORTON

The fossil ants of North America. Cambridge, Mass., 1930. 66 p. illus. 24 cm. (Harvard College. Museum of Comparative Zoology. Bulletin. Vol. LXX, no. 1) \$2.00. 1260

Note: This monograph presents the report of a study of about 12,000 specimens of fossil ants obtained from American Tertiary rocks. More than 4,000 of the specimens were among the unworked material collected by Dr. S. H. Scudder in early expeditions to the Florissant shales, and presented by him to the Museum of Comparative Zoology. Other specimens had been acquired by the Museum later, and material was also loaned for this study by various museums. Fossils from other American insect deposits, particularly those at Green River, Wyoming, are included in this study, but those from Florissant form the most important source of information. Illustrations consist of 11 plates, chiefly photographs, many of which show holotypes.

FOLSOM, JUSTUS WATSON

Nearctic Collembola or springtails, of the family Isotomidae. Washington, D.C.: Government Printing Office, 1937. 144 p. illus. 24 cm. (Smithsonian Institution. United States National Museum. Bulletin 168) Paper, \$0.30. 1261

Contents: Introduction. Family Isotomidae. Key to genera of Isotomidae. Genus Tetracanthella. Genus Anurophorus. Genus Folsomides. Genus Isotomodes. Genus Folsomia. Genus Guthriella. Genus Proisotoma. Genus Archisotoma. Genus Agrenia. Genus Isotomurus. Genus Isotoma. Unidentified species. Literature cited. Explanation of plates. Index.

Note: Of the 66 species and 16 varieties here treated, 28 species and two varieties are described as new. Of the Nearctic forms, 21 species and nine varieties are also Palearctic in distribution. Specimens of most of the Nearctic species have been compared with Palearctic specimens and the author has studied all the type specimens of Isotomidae described from North America. The accompanying 460 figures were drawn by the author from type specimens wherever possible. One hundred ninety references are cited.

Vertebrates

CAMP, CHARLES LEWIS, AND V. L. VANDER-HOOF

Bibliography of fossil vertebrates, 1928-1933. New York: The Society, 1940. 503 p. 25 cm.

(The Geological Society of America. Special papers. No. 27) \$3.50. 1262

Contents: List of serials and abbreviations. Author catalogue. Subject index. Systematic index. Synopsis of classification.

Note: A bibliography of both scientific and popular literature relating to vertebrate paleontology.

CAMP, CHARLES LEWIS, AND OTHERS

Bibliography of fossil vertebrates, 1934-1938, by C. L. Camp, D. N. Taylor, and S. P. Welles. New York: The Society, 1942. 663 p. 25 cm. (Geological Society of America. Special papers. No. 42) \$4.75. 1263

Contents: Preface. Supplementary list of serials. Author catalogue. Subject index. Systematic index. Synopsis of classification.

Note: A bibliography of world literature for the period indicated, indexed by author, subject, and species and genera, with a synopsis of the most recent classification. A continuation of C. L. Camp and V. L. Vander Hoof's *Bibliography of fossil vertebrates*, New York, 1940 (see above). Some titles omitted there are entered and indexed in the present volume, which has also a larger number of articles on sub-recent man.

CARNEGIE INSTITUTION OF WASHINGTON

Studies on Cenozoic vertebrates of western North America. Washington, D.C.: Carnegie Institution of Washington, 1938. 281 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 487. Contributions to palæontology) Paper, \$4.00; cloth, \$4.50. 1264

Contents: New middle Pliocene rodent and lagomorph faunas from Oregon and California, by R. W. Wilson. Pliocene rodents of western North America, by R. W. Wilson. A late Cenozoic vertebrate fauna from the Coso Mountains, Inyo county, California, by J. R. Schultz. A late Quaternary mammal fauna from the tar seeps of McKittrick, California, by J. R. Schultz. The Rancho La Brea caracaras: a new species, by Hildegard Howard. Pliocene peccaries from the Pacific Coast region of North America, by E. H. Colbert. Plants in the dung of *Nothotherium* from Rampart and Muav caves, Arizona, by J. D. Laudermilk and P. A. Munz.

Note: A collection of brief technical papers on several phases of North American paleontology. Bibliographies are included.

CARNEGIE INSTITUTION OF WASHINGTON

Studies of Cenozoic vertebrates of western North America and of fossil primates, by Arthur B. Drescher, E. L. Furlong [and others]. Washington, D.C.: Carnegie Institution of Washington, 1942. 222 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 530. Contributions to paleontology) Paper, \$2.25; cloth, \$2.75. 1265

Contents: Later Tertiary Equidae from the Tejon hills, California, by A. B. Drescher. A new Pliocene antelope from Mexico, with remarks on some known antilocaprids, by E. L. Furlong. Quaternary bird life of the McKittrick asphalt, California, by Ida S. De May. Pleistocene bird life of the Carpinteria asphalt, California, by Ida S. De May. A tertiary mammalian fauna from the San Antonio mountains near Tonopah, Nevada, by P. C. Henshaw. Preliminary study of the fauna of Rampart cave, Arizona, by R. W. Wilson. A review of the American fossil storks, by Hildegard Howard. The South African man-apes and *Pithecanthropus*, by G. H. R. von Koenigswald.

Note: A collection of scientific papers on remains of Cenozoic vertebrates and fossil primates which have been located in the western part of the United States. Each paper gives a brief introduction to the subject, and describes the specimens of the various species which have been discovered. Conclusions concerning the fauna and their relationships to the age in which they lived are set forth.

HAY, OLIVER PERRY

Second bibliography and catalogue of the fossil Vertebrata of North America. Washington: Carnegie Institution of Washington, 1929-30. 2 v. 25 cm. (Carnegie Institution of Washington. Publication no. 390, Vol. I-II) Vol. I, paper, \$7.50; cloth, \$8.50; Vol. II, paper, \$8.00; cloth, \$9.00. 1266

Contents: Volume I. Preface. List of abbreviations. Bibliography. Tabular key to catalogue. Catalogue. Supplement. Index. Volume II. Prefatory note. Tabular key to catalogue. Catalogue. Addenda and corrigenda. Index.

Note: A continuation of the author's *Bibliography and catalogue of the fossil Vertebrata of North America*, published in 1902 as Bulletin 179 of the United States Geological Survey. This two-volume set covers the increased knowledge gained on the subject in the intervening years. Volume I covers the Plagiostomi, the ichthyodermolites, the Osteichthyes, and the Amphibia. Volume II deals with the Ichnites, the Reptilia, the Aves, and the Mammalia. Systematic names of families, genera, and species follow the international rules of zoological nomenclature.

Fishes

DAVID, LORE ROSE

Miocene fishes of southern California. New York: The Geological Society of America, 1943. 193 p. illus. 24 cm. (Geological Society of America. Special papers. No. 43) \$1.70. 1267

Contents: Part I, Upper Miocene fishes from the Santa Monica mountains, California. Part II, Upper Miocene fishes from the northern rim of the Santa Monica mountains, California. Part III, Miocene fishes from the Palos Verdes hills, California. Part IV, Clupeoid fishes from the California Miocene. Part V, The Zaphlegidae: a family with scombroid relationships restricted to the California Tertiary. Part VI, Fish fauna from the diatomaceous earth deposits at Lompoc, California. References cited. Glossary. Index.

Note: A discussion of the occurrences of fossil fish in California and their significance in the study of geological problems relating to the marine Tertiary of the Pacific Coast. Only those fish found in the stratigraphic horizon of the Upper Miocene are considered.

WESTOLL, T. STANLEY

The Haplolepididae, a new family of late Carboniferous bony fishes; a study in taxonomy and evolution. New York: American Museum of Natural History, 1944. 122 p. illus. 27 cm. (American Museum of Natural History. Bulletin. Vol. 83, article 1) Paper, \$1.75. 1267a

Contents: Introduction. Systematic description. Phylogeny of *Haplolepis* and *Pyritocephalus*. Comparative morphology. Bearing on Holostean evolution. General remarks on the evolution of the Actinopterygii. Summary. Addenda. References. Abbreviations used in the text figures.

Note: A group of late Carboniferous actinopterygian fishes is described and referred to the genera *Haplolepis* Miller, 1892, and *Pyritocephalus* Fritsch, 1893. They are from six localities, of which the stratigraphical occurrences are mainly cannel or impure cannel coals, sometimes interbedded with ironstone. The fishes are shown to be closely related, and sharply marked off from all other known Carboniferous Actinopterygii, and the new family, Haplolepididae, is set up for their reception. One hundred thirty-eight references are listed in the bibliography.

Reptiles

BROWN, BARNUM, AND ERICH M. SCHLAIKER

The structure and relationships of *Protoceratops*. New York: The New York Academy

of Sciences, 1940. 132 p. illus. 24 cm. (New York Academy of Sciences. Annals. Vol. XL, art. 1) Paper, \$1.50. 1267b

Contents: Introduction. Comparative study of the skull elements. The endocranial cast of *Protoceratops* and a comparison of it with that of later ceratopsians. Summary of the salient growth changes in the skull. Summary of the primitive characters of the skull. Comparative study of the lower jaw. Summary of the salient growth changes in the lower jaw. Summary of the primitive characters of the lower jaw. Comparative study of the teeth. Measurements of the skull and lower jaw. Comparative study of the vertebral column. Comparative study of the ribs and sternum. Comparative study of the appendicular skeleton. Measurements of the appendicular skeleton. Summary of the salient growth changes in the post-cranial skeleton. Summary of the primitive characters of the post-cranial skeleton. Ontogenetic characters of *Protoceratops* that foreshadow the evolution of later ceratopsians. The eggs of *Protoceratops*. The integument of *Protoceratops*. The family Protoceratopsidae. Appendix. Bibliography.

Note: A detailed study of the anatomy and skeletal structure of this dinosaur of the Order Ornithischia, based on a thorough re-examination of all the ceratopsian material in the American Museum of Natural History, and by reference to the more important specimens in other large museums. There are 33 text figures and 13 plates of photographs.

BROWN, BARNUM, AND ERICH M. SCHLAIKER

A study of the troodont dinosaurs with the description of a new genus and four new species. New York: American Museum of Natural History, 1943. 44 p. illus. 27 cm. (American Museum of Natural History. Bulletin. Vol. 82, article 5) Paper, \$0.75. 1267c

Contents: Introduction. Systematic description and comparative study: Order Ornithischia. Suborder Ornithomorphia. Family Troodontidae Gilmore. The origin of the dome of the troodont dinosaur skull. The troodont dinosaur skeleton. Affinities of the troodont dinosaurs. References.

Note: A comparative study of all the known troodont specimens, based upon an examination of 43 of the 46 specimens deposited in the American Museum of Natural History, the United States National Museum, and the Academy of Natural Sciences of Philadelphia. The study involves a redefinition of the family Troodontidae, the description of one new genus and four new species, and a discussion of the affinities of the troodonts.

GILMORE, CHARLES WHITNEY

Fossil snakes of North America. New York: The Society, 1938. 96 p. illus. 25 cm. (Geological Society of America. Special papers. No. 9) \$0.75. 1268

Contents (abridged): Geological distribution of Serpentes in North America. Serpentes skeleton. Genera and species. List of family assignments. Systematic description. Bibliography. Index.

Note: A monograph summarizing the technical data on the twenty-four species of fossil snakes so far described by various authorities.

LULL, RICHARD SWANN, AND NELDA E. WRIGHT

Hadrosaurian dinosaurs of North America. New York: The Geological Society of America, 1942. 242 p. illus. 24 cm. (Geological Society of America. Special papers. No. 40) \$2.25. 1269

Contents (abridged): Abbreviations. History of discovery. Geographic distribution. Geographic distribution. Alphabetical list of genera and species. Ecology, habits, and manner of life. Progressive evolutionary trends and phylogeny. General morphology: axial skeleton; skull; mandible; teeth; vertebral column; ribs; appendicular skeleton; tendons and ligaments; muscular system; integument; progression and postures; brain and endocranial cast; organs and special sense. Systematic description of genera and species: classification of hadrosaurs; family Hadrosauridae (Trachodontidae). Bibliography. Index.

Note: A study based on a critical review of the extant literature on the subject, attempting in part to reconcile the various descriptions and reduce them to certain comparable common

factors. Redescriptions have been prepared, nearly always in the presence of the original types. A complete morphological study of the animals and an account of their distribution in time and space is also given, with notes on their probable phylogeny and evolutionary trends.

ROMER, ALFRED SHERWOOD, AND L. I. PRICE

Review of the Pelycosauria. New York: The Society, 1940. 538 p. illus. 25 cm. (Geological Society of America. Special papers. No. 28) \$3.50. 1270

Contents: Methods of study. Classification. Collecting localities. Geological and geographical distribution. General morphology. Habits. Pelycosaur relationships. Systematic descriptions. Measurements. Bibliography. Abbreviations used in skull illustrations. Explanation of plates. Index.

Note: A review, for professional geologists, zoologists, and paleontologists, of the dominant types in the oldest adequately known reptilian fauna. The work takes into account new material and re-examination of older collections, including nearly every specimen in major American institutions. Descriptions and treatment are general so far as possible and deal with species rather than with single specimens.

Birds

HOWARD, HILDEGARDE

Eagles and eagle-like vultures of the Pleistocene of Rancho La Brea. Washington, D.C.: Carnegie Institution of Washington, 1932. 82 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 429. Contributions to paleontology) Paper, \$2.50; cloth, \$3.50. 1271

Contents (abridged): Introduction. Acknowledgments. Fossil eagles from other localities. System of classification. Material available: fossil; recent. Methods of identification of material. Discussion of species: subfamily Butioninae; subfamily Aquilinae; subfamily Aegypiinae. Summary. Tables. Bibliography.

Note: Deals primarily with the structure and relationships of the four extinct species of eagle and the two extinct species of related vulturine types (subfamily Aegypiinae) found in the Pleistocene asphalt deposits at Rancho La Brea, California. The two species of eagle now living, also represented in the Pleistocene deposits, are briefly discussed. The more remotely related New World vultures, the smaller hawks, and the falcons are not included. All the principal skeletal parts of each species are described in order to build up a concept of the entire bird.

WETMORE, ALEXANDER

A check-list of the fossil birds of North America. Washington, D.C.: The Smithsonian Institution, 1940. 81 p. 24 cm. (Smithsonian miscellaneous collections. Vol. 99, no. 4. Publication no. 3587) Paper, \$0.30. 1272

Note: A revision and enlargement of the list of fossil birds in the American Ornithologists' Union *Check-list of North American birds*, 1931 (see Index). The material in the present paper includes changes and additions up to 1940. All modern forms for which there are fossil records are included, and in addition there have been added certain species, such as *Geococcyx conklingi*, which are known only from bones, plus records of recent age species such as *Spizaetus willetti* and *Coragyps occidentalis*. The modern species which occur in the fossil record are distinguished from those not known in living form by the common name and by a suitable phrase in the range. The list includes 165 forms still living and 184 species recorded only in the extinct state.

Mammals

DENISON, ROBERT HOWLAND

The broad-skulled Pseudocreodi. New York: The New York Academy of Sciences, 1938. 93

p. illus. 24 cm. (New York Academy of Sciences. Annals. Vol. xxxvii, art. 3) Paper, \$1.00. 1272a

Contents: Introduction. History of the study of the group. Systematic revision. Geological and geographical distribution. Structural and functional evolution. Adaptation. General relationships. Phylogeny. Bibliography. Index.

Note: A technical paper dealing with those Upper Paleocene and Eocene carnivores grouped in the Oxyaenidae. Four distinct phyla or subfamilies are represented, of which the Oxyaeninae and Palaeonictinae are retained in the family Oxyaenidae in this paper, while the Limnocyoninae and Machairoidinae are referred to the Hyaenodontidae. An attempt is made to trace the structural and functional evolution within the four groups, to determine the origin and phylogeny of each line, and to present a systematic revision. A large part of the material examined is in the collection of the American Museum of Natural History.

GREGORY, WILLIAM KING, AND OTHERS

Fossil anthropoids of the Yale-Cambridge India expedition of 1935, by William K. Gregory, Milo Hellman, and G. Edward Lewis. Washington, D.C.: Carnegie Institution of Washington, 1938. 27 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 495) Paper, \$1.00; cloth, \$1.25. 1273

Contents: Introduction. List of specimens with provisional determinations. Comparative measurements of Siwalik anthropoid teeth. Description of material. Discussion and summary. References to literature. Plates.

Note: A systematic description of the teeth and parts of the jaws of fossil anthropoid apes secured in the Siwalik hills by an expedition under the direction of Dr. H. de Terra. Size and appearance are described in detail and illustrated.

HALL, EUGENE RAYMOND, AND OTHERS

Studies of Tertiary and Quaternary mammals of North America, by E. Raymond Hall, John R. Schultz, Chester Stock, Robert W. Wilson. Washington, D.C.: Carnegie Institution of Washington, 1936. 119 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 473. Contributions to paleontology) Cloth, \$3.00. 1274

Contents: *Plesippus francescana* (Frick) from the late Pliocene, Coso mountains, California, with a review of the genus *Plesippus*, by J. R. Schultz. A Pliocene rodent fauna from Smiths Valley, Nevada, by R. W. Wilson. A *Pliomastodon* skull from the Thousand Creek beds, northwestern Nevada, by Chester Stock. Mustelid mammals from the Pleistocene of North America, with systematic notes on some recent members of the genera *Mustela*, *Taxidea* and *Mephitis*, by E. R. Hall.

Note: Plates of illustrations and bibliographical footnotes accompany the technical papers in this volume.

KELLOGG, REMINGTON

A review of the Archaeoceti. Washington, D.C.: Carnegie Institution of Washington, 1936. 366 p. illus. 29 cm. (Carnegie Institution of Washington. Publication no. 482) Paper, \$4.00; cloth, \$4.50. 1275

Contents (abridged): Chronological resume of discoveries of archaeocete remains. Classification of the Archaeoceti: characters of families, genera, and species. Incertae sedis. Geologic range and geographic distribution of the Archaeoceti. Morphologic history of the Archaeoceti. Genetic relations of the Archaeoceti. Literature. Index.

Note: The Archaeoceti, or toothed whales with non-telescoped skulls, as now recognized comprise three families, ten genera, and nineteen species. All of these species are discussed as well as a number of additional forms for which available skeletal remains are not sufficient for accurate determination. The descriptive portion deals chiefly with the dental and osteological details of the archaeocetes. The investigation is based chiefly on a re-

view of the archaeocete material in European and American museums.

MATTHEW, WILLIAM DILLER

Paleocene faunas of the San Juan basin, New Mexico. Philadelphia: The American Philosophical Society, 1937. 510 p. illus. 30 cm. (American Philosophical Society. Transactions. New series, Vol. 30) \$5.00. 1275a

Contents (abridged): Part I, Introduction: Historical review of discoveries and researches. Stratigraphic relations of the Cretaceous and Paleocene formations in the San Juan basin. Comparative list of Puerco and Torrejon mammals, of Wasatch and Bridger mammals. Part II, Systematic and descriptive revision of the Paleocene mammals of New Mexico: Eutheria. Orders, Carnivora, Taligrada, Condylarthra, Insectivora, Taeniodonta. Allothiria. Order, Multituberculata. Metatheria. Order, Marsupialia. Part III, General observations and conclusions: Salient character of Puerco and Torrejon mammals. The Paleocene Reptilia. Orders, Rhynchocephalia, Lacertilia, Serpentes, Chelonina, Crocodilia. Correlation of the Puerco and Torrejon faunas. Origin and relationships of the Tertiary Mammalia. Chronological list of publications dealing with Paleocene faunas of San Juan basin and vicinity. Index.

Note: This report is based in part upon material in the Cope Collection of the American Museum of Natural History and in part upon the collections made in that region by several American Museum expeditions, culminating in that of 1913, which added to the material many fine skulls, jaws, and even a few more or less complete skeletons representing various archaic and extinct families of placental mammals. The fauna belongs to the two earlier phases of the Paleocene epoch, a transitional period following that of the great reptiles of the Mesozoic era and preceding the Lower Eocene phase, when the direct ancestors of the horses, tapirs, rhinoceroses, ruminants and other progressive placental families first became established in western North America.

MERRIAM, JOHN CAMPBELL, AND CHESTER STOCK

The Felidae of Rancho La Brea, Washington, D.C.: Carnegie Institution of Washington, 1932. 231 p. illus. 30 cm. (Carnegie Institution of Washington. Publication no. 422) Paper, \$7.00; cloth, \$8.00. 1276

Contents (abridged): Review of literature on Pleistocene and Late Tertiary cats of western North America. Pleistocene sabre-tooth cats of North America. Occurrence of Felidae at Rancho La Brea. Habit and habitat of *Smilodon* and of *Felis atrox* as suggested by occurrence at Rancho La Brea. Classification and relationships of the Felidae from the asphalt. Smilodontinae of Rancho La Brea. *Smilodon californicus* Brovard. Comparative study of vertebral column and limbs of *Smilodon* and *Felis atrox*. *Smilodon californicus brevipes*, n. var. *Felis atrox* Leidy. Smaller cats of the genera *Felis* and *Lynx*. Occurrence and description of Pleistocene Felidae in western North America. Literature.

Note: Deals with the Felidae or cat family as represented in the Pleistocene asphalt deposits of Rancho La Brea, California. Seven distinct types of cat including the sabre-tooth, the great lion-like cat, the mountain lion, and the wild-cat are recorded and discussed in detail. The known Pleistocene occurrences of the sabre-tooth (*Smilodon californicus*) and the great lion-like cat (*Felis atrox*) in western North America are recorded and important material from several new localities is described. With 42 plates illustrating fossil remains.

OLSON, EVERETT CLAIRE

Origin of mammals based upon cranial morphology of the therapsid suborders. New York: The Society, 1944. 136 p. illus. 25 cm. (The Geological Society of America. Special papers. No. 55) \$1.00. 1276a

Contents (abridged): Introduction. The inner ear. The middle ear. Occipital region. Basicranial axis. Inferences concerning the

chondrocrania of therapsids. Problems of therapsid phylogeny. Origin of mammals. Source of mammals. References. Index.

Note: Serial sections of skulls of four therapsid suborders Gorgonopsia, Therocephalia, Anomodontia, and Cynodontia have provided a basis for detailed studies of the cranial characters of reptiles which are approaching the mammalian threshold. Conclusion is reached that each order approached the mammalian threshold independently and that there are several possible sources of mammals among the therapsids.

OSBORN, HENRY FAIRFIELD

Proboscidea. A monograph of the discovery, evolution, migration and extinction of the mastodonts and elephants of the world. Edited by Mabel Rice Percy. New York: Published on the J. Pierpont Morgan Fund by the trustees of the American Museum of Natural History, the American Museum Press, 1936-42. 2 v. illus. (part col.) 33 cm. \$20.00 per volume. 1277

Contents (abridged): Volume I, Mæritheioidea, Deinotherioidea, Mastodontoides: Discovery of the living and extinct proboscideans. Origin and classification of the Proboscidea. The mærithe and deinotheres. History of the classification of the Mastodontoides. Histories of the subfamilies Mastodontinae; the subfamily Zygodontinae; the subfamilies Longirostrinae and Amebelodontinae; origin and geographic distribution. History of the rhynchorhinae. The South American mastodonts. The subfamily Brevirostrinae of Europe and Asia. Stegomastodon of North America. Appendices. Bibliography. Volume II, Stegodontoides, Elephantoides: The roof-toothed stegodonts. Classification of the Elephantoides by their cranial and dental characters. The genera Archidiskodon, Parelephas, and Mammonteus. The subfamily Elephantinae. Nomenclature of the Proboscidea. Geologic succession of the Proboscidea. Summary. Appendices. Bibliography. Index.

Note: An exhaustive monograph summarizing the author's thirty-five years of research from 1900-1935 in the evolution and phylogeny of the Proboscidea or group of mammals represented in the present day by the two species of elephant, and in prehistoric times by the mastodon and mammoth. In the detailed treatment of the discovery, evolution and migrations of this order of mammals, the author replaces the purely zoologic classification of Linnaeus with an evolutionary and phylogenetic classification, now known as the Osbornian system, and first exemplified by the author in 1892. In this classification, all divisions from the subspecies to the order are placed vertically as succeeding each other during geologic time rather than horizontally as observed in recent or existing time by Linnaeus and all geologists. The author has accomplished a revision and systematization of generic nomenclatures, as well as a separation of many direct phyletic lines of descent from each other, with the recognition of many mastodonts and elephants which are alike in certain characters yet which cannot possibly be descended one from the other. The evolutionary changes are principally defined and observed by continuously progressive changes in the aristothenes and proportions of the grinding teeth. An intensive study of the teeth of the fossil Proboscidea is therefore a major feature of this monograph, which is written for the specialist in paleontology and not for the layman.

PACKARD, EARL LEROY, AND OTHERS

Marine mammals, by Earl L. Packard, Remington Kellogg, and Ernst Huber. Washington, D.C.: Carnegie Institution of Washington, 1934. 136 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 447. Contributions to palaeontology) Paper, \$1.75; cloth, \$2.75. 1278

Contents: A new cetothere from the Miocene Astoria formation of Newport, Oregon, by E. L. Packard and R. Kellogg (includes "Literature"). The Patagonian fossil whalebone whale, *Cetotherium morenti* (Lydekker), by R. Kellogg. A new cetothere from the Modelo formation at Los Angeles, California, by R. Kellogg. Anatomical notes on Pinnipedia and Cetacea, by E. Huber.

Note: The first three of these papers deal with fossil specimens of certain cetotheres, while the fourth paper deals with the facial muscles of the modern Californian sea-lion and the modern narwhal.

SCOTT, WILLIAM BERRYMAN

A history of land mammals in the western hemisphere, by William Berryman Scott; illustrated by R. Bruce Horsfall and Charles R. Knight. Revised edition rewritten throughout. New York: The Macmillan Company, 1937. 786 p. illus. 22 cm. \$7.50. 1279

Contents (abridged): Definition and classification of mammals. Skeleton and teeth of mammals. Fossilization of mammals—technique of paleontology. Geological chronology. Origin of the Mammalia—Mesozoic Mammalia. Cenozoic continental formations of North America. Cenozoic formations of South America. Geographical distribution of mammals. Successive mammalian faunas of North America. Successive mammalian faunas of the neotropical region. Preface to the histories of the mammalian orders: Modes of evolution—extinction and migration of mammals. History of the Proboscidea. The Artiodactyla, I. Ruminantia. The Artiodactyla, II. Non-Ruminantia. The Perissodactyla, I. Hippomorpha. The Perissodactyla II. Ceratomorpha. The Amblypoda and Condylarthra. The Notoungulata. The Astrapotheria and Pyrotheria. The Litopterna. The Carnivora, I. Fissipedia. The Carnivora, II. Creodonta. The Edentata. The Marsupialia. The evolutionary process. Index.

Note: This is an introductory work for the non-professional reader on the paleontology of North America, first published in 1913. Except for the chapter on the skeleton and teeth, this edition was rewritten to include much new material. Many new illustrations have been added.

SIMPSON, GEORGE GAYLORD

The Fort Union of the Crazy Mountain field, Montana, and its mammalian faunas. Washington, D.C.: Government Printing Office, 1937. 287 p. illus. 24 cm. (Smithsonian Institution. United States National Museum. Bulletin 169) Paper, \$0.45. 1279a

Contents: Introduction. Part I, Geology and faunas: Geography. Geology. Fossil localities and faunal lists. Faunal succession and correlations. Ecology. Part II, Classification and description of mammals: Order Multituberculata Cope. Order Insectivora Gray. Order Primates Linnaeus. Order Taeniodonta Cope. Order Carnivora Vicq d'Azyr. Order Condylarthra Cope. Order Pantodonta Cope. Literature cited. Index.

Note: This monograph is chiefly devoted to the description and discussion of a large collection of Paleocene mammals from the Fort Union of central Montana belonging to the United States National Museum. The first part is geological, chiefly stratigraphic and paleontological. The location and general characteristics of the mammal-bearing area are described, followed by a résumé of its stratigraphy and geologic structure. The second and longer part is zoological, being devoted to definitions of all taxonomic groups which were originally described from this field or the conception of which is markedly affected by material from this region, and discusses the relationships and phylogeny of the mammals represented with descriptions of the specimens in the collection.

WILSON, LESLIE E.

Miocene marine mammals from the Bakersfield region, California. New Haven: The Peabody Museum of Natural History, Yale University, 1935. 143 p. illus. 23 cm. (Yale University. The Peabody Museum of Natural History. Bulletin 4) Paper, \$1.25. 1279b

Contents: Location and geology of area. Paleontology: Order Cetacea. Suborder Odontoceti. Family Delphinidae. Family Iniidae. Family Eurhinodelphidae. Suborder Mysticeti. Order Carnivora. Suborder Pinnipedia. Family Phocidae. Family Otariidae. Family Allodesmidae. Bibliography.

Note: A systematic description of the type specimen fossils from the collection found at the southern end of the San Joaquin valley, California, adjacent to the Sierra Nevada Range. Measurements of skulls and other bone structures, together with line drawings, are included. Thirty-eight titles are listed in the bibliography.

Paleobotany

AXELROD, DANIEL I.

A Miocene flora from the western border of the Mohave desert. Washington, D.C.: The Carnegie Institution of Washington, 1939. 129 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 516. Contributions to paleontology) Paper, \$1.50; cloth, \$2.00. 1280

Contents: Physical relationships. Composition of the flora. Modern relationships of the Tehachapi flora. Paleogeology of the flora. Floristic and distributional considerations. Summary. Systematic descriptions.

Note: A study of the Tehachapi flora situated within 250 miles of the southern border of the northern Miocene forest flora and directly linked with the later Tertiary history of western North America. The fossil locality which is in Kern county about eight miles northeast of Tehachapi, California, has yielded a representative collection of Miocene flora.

BERRY, EDWARD WILBER

Contributions to the paleobotany of middle and South America. Five papers. Baltimore: The Johns Hopkins Press, 1939. 168 p. illus. 25 cm. (The Johns Hopkins University studies in geology. No. 13, edited by E. B. Mathews) \$2.00. 1281

Contents: The fossil flora of Potosi, Bolivia. Freshwater mollusca and crustacea from near El Molino, Bolivia, by Henry A. Pilsbry. The fossil plants from Huallanca, Peru. A Miocene flora from the gorge of the Yumuri River, Matanzas, Cuba. Fossil plants from the state of Anzoategui, Venezuela. Eocene plants from a well core in Venezuela. Index.

Note: These papers contain for the most part systematic descriptions of new fossil specimens, together with photographs and drawings of the various plants described. Except for the second paper, all are written by Berry.

BERRY, EDWARD WILBER

Contributions to paleobotany of South America. Eight papers. Baltimore: The Johns Hopkins Press, 1937. 114 p. illus. 24 cm. (The Johns Hopkins University studies in geology. No. 12, edited by E. B. Mathews) \$2.00. 1282

Contents: An Upper Cretaceous flora from Patagonia. A Paleocene flora from Patagonia. A flora from the forest clay of Trinidad. A Late Tertiary flora from Trinidad. Late Tertiary plants from the territory of Acre, Brazil. Eocene plants from Rio Turbio in the territory of Santa Cruz, Patagonia. The Parinas sandstone of Peru. Lower Cretaceous plants beneath the floodplain of the Orinoco from the state of Monagas, eastern Venezuela.

Note: A collection of short technical papers on various aspects of the paleobotany of the region. New specimens are classified, illustrated, and described in the text.

BERRY, EDWARD WILBER

Tertiary flora from the Rio Pichileufu, Argentina. New York: The Society, 1938. 149 p. illus. 24 cm. (Geological Society of America. Special papers. No. 12) \$1.75. 1283

Contents: Present geography. Present flora. Present climate. Fossil flora. Antarctica as a center of dispersal. Lack of reality of Archiplata and Archhelenis. Review of the Tertiary floras of South America. Summary history of the Andes. Systematic descriptions. Works to which reference is made. 1937 additions to bibliography. Index.

Note: A study of the fossil flora of a part of Argentina, with a brief account of the paleobotany of South America during the Tertiary. There are fifty pages of photographs of specimens from the collection on which this study is based.

CARNEGIE INSTITUTION OF WASHINGTON

Eocene flora of western America. Washington, D.C.: Carnegie Institution of Washington, 1937. 156 p. illus. 29 cm. (Carnegie Institution of Washington. Publication no. 465. Contributions to palaeontology) Paper, \$3.75; cloth, \$4.75. 1284

Contents: The Comstock flora of west central Oregon, by Ethel I. Sanborn. The La Porte flora of Plumas county, California, by Susan S. Potbury. The flora of the Weaverville beds of Trinity county, California; with descriptions of the plant-bearing beds, by H. D. MacGinitie.

Note: A collection of papers describing new fossil leaves found in parts of California and Oregon, with notes on the geology of the areas and systematic descriptions of the specimens found.

CARNEGIE INSTITUTION OF WASHINGTON

Fossil floras of Yellowstone National Park and southeastern Oregon. Washington, D.C.: Carnegie Institution of Washington, 1933. 68 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 416. Contributions to paleontology) \$2.50. 1285

Contents: Fossil floras of Yellowstone National Park. Coniferous woods of Lamar River flora, by C. B. Read. The Trout Creek flora of southeastern Oregon, by H. D. MacGinitie.

Note: The first paper covers the preservation of the petrified wood specimens and their taxonomy; the second paper embraces the general geologic features of the region described plus a systematic classification of the Trout Creek flora of Upper Miocene age.

CARNEGIE INSTITUTION OF WASHINGTON

Middle Cenozoic floras of western North America. Washington, D.C.: Carnegie Institution of Washington, 1936. 152 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 455. Contributions to paleontology) Paper, \$2.75; cloth, \$3.75. 1286

Contents: A Miocene flora from the Blue Mountains, Oregon, by Elizabeth Oliver. Climatic implications of *Sapindus oregonianus*, by R. S. La Motte. The Miocene tilias of western America, by R. S. La Motte. An Upper Oligocene florule from Vancouver Island, by R. S. La Motte. The Upper Cedarville flora of northwestern Nevada and adjacent California, by R. S. La Motte. Supplement: Some systematic revisions in Miocene palaeobotany, 1934-36, by R. S. La Motte. Index.

Note: These papers deal largely with the systematic classification of fossil leaf specimens of the Middle Cenozoic in western North America.

CARNEGIE INSTITUTION OF WASHINGTON

Miocene and Pliocene floras of western North America. Washington, D.C.: Carnegie Institution of Washington, 1938. 270 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 476. Contributions to palaeontology) \$4.00. 1287

Contents: Late Tertiary floras from the high plains, by Ralph W. Chaney and Maxim K. Elias. A late Tertiary flora from southwestern Idaho, by Erling Dorf. A Pliocene flora from the Mount Eden beds, southern California, by Daniel I. Axelrod. The Deschutes flora of eastern Oregon, by Ralph W. Chaney. The San Pablo flora of west central California, by Carlton Condit. Index.

Note: A collection of technical papers on several aspects of North American paleontology.

CARNEGIE INSTITUTION OF WASHINGTON

Studies of the Pleistocene palaeobotany of California. Washington, D.C.: Carnegie Institution of Washington, 1934. 179 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 415. Contributions to palaeontology) \$3.50. 1288

Contents: A Pleistocene flora from Santa Cruz Island, California, by R. W. Chaney and H. L. Mason. A Pleistocene flora from San Bruno, San Mateo county, California, by Susan S. Potbury. A Pleistocene flora from the asphalt deposits at Carpinteria, California, by R. W. Chaney and H. L. Mason. Pleistocene flora of the Tomales formation, by H. L. Mason.

Note: A collection of brief papers on recent discoveries of fossil flora in certain areas of California.

CHANNEY, RALPH WORKS, AND ETHEL I. SANBORN

The Goshen flora of west central Oregon. Washington, D.C.: Carnegie Institution of Washington, 1933. 103 p. illus. 20 cm. (Carnegie Institution of Washington. Publication no. 439. Contributions to paleontology) Paper, \$2.50; cloth, \$3.50. 1289

Contents: Introduction. General geologic features. Composition of the flora. Distribution considerations. Physical conditions indicated by the flora. Correlation. Systematic descriptions. Index.

Note: The Goshen flora as known from the type locality in west central Oregon comprises 49 species of angiosperm. Most of these have their living equivalents in the temperate and tropical rain forests of the western hemisphere, and there is also a considerable element of the flora represented by similar living species in the low latitudes of the eastern hemisphere. The problems of the origin, distribution, and habitat of the Goshen flora are considered, and its age is placed as older Tertiary and probably as uppermost Eocene.

CHANNEY, RALPH WORKS, EDITOR

Pliocene floras of California and Oregon; edited by Ralph W. Chaney. Contributors: Ralph W. Chaney, Carlton Condit, Daniel I. Axelrod. Washington, D.C.: Carnegie Institution of Washington, 1944. 407 p. illus. 25 cm. (Carnegie Institution of Washington. Publication 553. Contributions to paleontology) Paper, \$4.50; cloth, \$5.00. 1289a

Contents: Introduction: History of Pliocene floral studies in western North America. Terminology applied to vegetational units of the Tertiary. Taxonomic principles involved in the study of Pliocene floras. Outline of the floras included in this volume. The Remington Hill flora. The Table Mountain flora. The Black Hawk Ranch flora. The Mulholland flora. The Oakdale flora. The Sonoma flora. The Pliocene sequence in central California. The Alford Creek flora. The Alturas flora. The Dalles flora. The Troutdale flora. Summary and conclusions. Literature cited. Appendixes: Systematic revisions. List of Pliocene species in elements and components. List of Pliocene members of the Arcto-Tertiary flora. List of Pliocene members of the Madro-Tertiary flora. Index.

Note: This monograph contains studies of seven Pliocene floras of California and three of Oregon, together with introductory matter concerning previous related studies and conclusion summarizing the relationships of these floras to one another and to 22 other floras of their approximate age in the western United States. One hundred ninety-two references are included in the bibliography and there are 64 plates of photographs.

DARRAH, WILLIAM CULP

Textbook of paleobotany. New York: D. Appleton-Century Company, Incorporated, 1939. 441 p. illus. 23 cm. (The Century biological series, Robert Hegner, editor) \$6.00. 1290

Contents: Part I, General principles: Introduction. Geological principles. Biological principles. The paleobotany of coal. Part II, The paleontological history of the vascular plants: The Psilopsida. The Lycopsida. The Sphenopsida. The Pteropsida: Filicinae. Interrelationships of the Pteridophytes. The Pteridospermae.

The Cordaitales and Ginkgoales. The Coniferales. The Bennettitales and Cycadales. Inter-relationships among the gymnosperms. The origin of the angiosperms. The geological history of the angiosperms. Part III, The succession of ancient floras: Paleozoic floras. Mesozoic floras. Cenozoic floras. The origin of the existing flora. Part IV, General results: Fossil thallophytes and bryophytes. Concepts of paleobotany. A reasonable phylogeny of vascular plants.

Note: Written from a biological point of view, this introductory text presents a comprehensive treatment of extinct plants, emphasizing the accessible and abundant types. However, representative geological aspects are considered in some detail. There is a bibliography at the end of each chapter. The author has assumed that the student will have a knowledge of general botany, plant anatomy, and some knowledge of historical geology.

DAUGHERTY, LYMAN HARRY

The Upper Triassic flora of Arizona. With a discussion of its geologic occurrence by Howard R. Stagner. Washington, D.C., 1941. 108 p. illus. 29 cm. (Carnegie Institution of Washington. Publication 526) Paper, \$1.25; cloth, \$1.75.

1290a

Contents: Introduction. Historical sketch. Geologic considerations. Composition of the flora. Physical considerations. Correlation and age. Systematic descriptions. Literature cited. Index.

Note: A description and discussion of fossil leaves and wood of the Triassic period found in Arizona. Each specimen is described in detail and illustrated in plates, and is correlated with remains of the same geologic period found in other sections of the world whenever possible.

DORF, ERLING

Upper Cretaceous floras of the Rocky Mountain region. Washington, D.C., 1942. 168 p. illus. 29 cm. (Carnegie Institution of Washington. Publication 508. Contributions to paleontology) Paper, \$2.50; cloth, \$3.00.

1291

Contents (abridged): Part I, Stratigraphy and paleontology of the Fox Hills and Lower Medicine Bow formations of southern Wyoming and northwestern Colorado. Part II, Flora of the Lance formation at its type locality, Niobrara county, Wyoming. Index of genera and species.

Note: A monograph covering the stratigraphy, composition of the flora, climatic conditions, correlation, and systematic paleobotany of the areas mentioned in the contents, with emphasis upon the succession of Upper Cretaceous floras of the West and their relation to succeeding Cenozoic floras.

ELIAS, MAXIM KONRADOVICH

Tertiary prairie grasses and other herbs from the high plains. New York: The Society, 1942. 176 p. illus. 25 cm. (Geological Society of America. Special papers. No. 41) \$1.50.

1292

Contents (abridged): Part I, Fossil and living grasses. Part II, Morphology of grasses. Part III, Taxonomy of tribe Stipeae. Part IV, Systematic description of fossils. Part V, Evolution of Stipeae and other described herbs. Part VI, Stratigraphy of late Tertiary rocks from which described plants have been collected. References cited. Explanation of plates. Index.

Note: A monograph covering the taxonomy and systematic description of the grasses and herbs mentioned, including a comparison in detail with their nearest living relatives, the Stipeae and Paniceae, and several proposed new botanical terms.

HANNA, G. DALLAS

The diatoms of Sharktooth Hill, Kern county, California. San Francisco: California Academy of Sciences, 1931-33. 102 p. illus. 25 cm. (California Academy of Sciences. Proceedings. 4th series, Vol. xx, no. 6, January 8, 1932) \$1.50.

1292a

Note: Sharktooth Hill is situated on the north side of Kern River in Sec. 25, T. 28S, R. 28E, M.D.M. The hill marks the westernmost exposure of Miocene rocks in this section. Beneath a stratum very prolific in bones and teeth of marine mammals and fishes are shales, and about 30 feet below, diatoms are present in great abundance and perfection of preservation. This paper presents an exhaustive study of the diatoms in this deposit which had not been critically studied. Specimens from the West Indies, eastern America, Spain, Italy, and Hungary were employed for purposes of identification. The geologic relationship of the exposure was presented in another paper in the *Proceedings*, 4th series, Vol. XIX, no. 7. Beneath the beds here considered are approximately 2500 feet of strata classed as Temblor, and the diatoms here described were helpful in determining the stratigraphic relationship of this horizon and the Temblor formation in general. There are 18 plates showing photographs of specimens.

HOLLICK, CHARLES ARTHUR

The Tertiary floras of Alaska. With a chapter on the geology of the Tertiary deposits by Philip S. Smith. Washington, D.C.: Government Printing Office, 1936. 185 p. illus. 29 cm. (United States. Geological Survey. Professional paper no. 182) \$1.00.

1293

Contents: Introduction: Object and scope. Historical review. Species included. Botanic relations. Fossil-plant localities. Geologic relations. Geology of the Tertiary deposits of Alaska: selected list of Geological Survey publications on the Tertiary deposits of Alaska. Marine deposits. Terrigenous deposits. Effusive igneous rocks. Intrusive igneous rocks. Systematic descriptions. Index.

Note: The object of this paper is to describe and discuss the Tertiary floras of Alaska, insofar as they are known, in a manner similar to that in which the Upper Cretaceous floras were treated in Hollick's *The Upper Cretaceous floras of Alaska*, Washington, D.C., 1930 described below. The two contributions may constitute companion papers on the later extinct floras of the territory. A geologic map of the area is included.

HOLLICK, CHARLES ARTHUR

The Upper Cretaceous floras of Alaska, with A description of the plant-bearing beds, by George C. Martin. Washington, D.C.: Government Printing Office, 1930. 123 p. illus. 29 cm. (United States. Geological Survey. Professional paper no. 159) Paper, \$0.80.

1294

Contents (abridged): Introduction. Previous investigations of Alaskan Upper Cretaceous plants. General discussion of the floras. The Upper Cretaceous plant-bearing beds of Alaska, by George C. Martin: The Cretaceous rocks of Alaska. Details of the Upper Cretaceous plant-bearing beds: Alaska Peninsula. Upper Yukon region. Rampart-Tanana district. Lower Yukon region. Koyukuk Valley. Summary. Description of species. Index.

Note: The bulk of this paper consists of the description of fossil flora, illustrated with 86 plates of photographs. The author's *The Tertiary floras of Alaska*, Washington, D.C., 1936 described above is intended as a companion volume.

HU, HSIEN-SU, AND RALPH W. CHANEY

A Miocene flora from Shantung province, China. Part I, Introduction and systematic considerations. Part II, Physical conditions and correlation. Washington, D.C.: Carnegie Institution of Washington, 1940. 147 p. illus. 29 cm. (Carnegie Institution of Washington. Publication no. 507. Contributions to paleontology) Paper, \$3.25; cloth, \$3.75.

1295

Contents: Part I, Introduction and systematic considerations: Introduction. Geologic occurrence. Composition of the flora: systematic relationships. Distribution of modern equivalents. Systematic descriptions. Part II, Physical conditions and correlation: Introduction. Physical conditions indicated by the flora: Topog-

raphy. Climate. Summary of physical history. Correlation and age. Index.

Note: A discussion of Miocene flora discovered near the village of Shanwang in Shantung province, China. Each specimen is described in detail, and compared to living plants in China, Japan, and North America. Physical conditions indicated by these flora are discussed, and an effort is made to correlate them with specimens from the same geologic period found in Manchuria, Siberia, and Japan. Each specimen is illustrated in plates.

MACGINITIE, HARRY

A Middle Eocene flora from the central Sierra Nevada. Washington, D.C.: Carnegie Institution of Washington, 1941. 178 p. illus. 28 cm. (Carnegie Institution of Washington. Publication no. 534. Contributions to paleontology) Paper, \$2.00; cloth, \$2.50. 1296

Contents: Introduction. Geology of the region. Climate and vegetation of the Chalk Bluffs area. Composition of the flora and relationship of the fossil specimens. Environment of the fossil flora. Distribution considerations. Age of the flora. Botanic provinces of the Eocene. Systematic descriptions. Bibliography. Index.

Note: A survey and systematic description of fossil flora from the Middle Eocene, based on field work among the gravel deposits of the Chalk Bluffs localities, Nevada county, California. The author concludes that the flora studied is the oldest of the six well-known Tertiary floras of the Pacific Slope. The book is lithographed from typewritten copy.

THIESSEN, REINHARDT, AND GEORGE C. SPRUNK

Coal paleobotany. Washington, D.C.: Government Printing Office, 1941. 56 p. illus. 23

cm. (United States. Bureau of Mines. Technical paper 631) Paper, \$0.15. 1296a

Contents: Introduction. External appearance of coal. Appearance of polished surface of coal. Types of plants involved in coal formation: Coniferouslike plants of the Paleozoic era. Lycopods. Cycadophytes. Summary.

Note: This paper presents only the highlights of previous research on the paleobotany of coal. Its main object is to bring to the notice of the paleobotanist the fact that coal contains an enormous amount of fossil material in a good state of preservation, and to indicate the identity of some of the plants whose structure may be discovered in common bright coals. There are 44 photomicrographs showing leaf and branch structures of plants in coal samples.

WIELAND, GEORGE REBER

The Cerro Cuadrado petrified forest. Washington, D.C.: Carnegie Institution of Washington, 1935. 180 p. illus. 30 cm. (Carnegie Institution of Washington. Publication no. 449) Paper, \$3.75; cloth, \$4.75. 1297

Contents: Discovery and age. Descriptions of species. Petrified forests. Chemistry of petrification. Brief bibliography of siliceous replacement. Cone and flower. Araucarian forests. Conclusions. Addenda. Bibliography. Index.

Note: Describes the most remarkable of all petrified conifer forests, occurring in rocks of doubtful or Rhætic age in north central Patagonia, at the base of a small peak, the "Cerro Cuadrado." The types are Araucarian, finding near relatives in Australia today. An extended comparison with existent Araucarians is given. A survey of petrified forests of note is added, with a discussion of the chemistry of petrification.

OCEANOGRAPHY

BARNES, CLIFFORD ADAMS, AND THOMAS G. THOMPSON

Physical and chemical investigations in Bering Sea and portions of the North Pacific Ocean. Seattle, Wash.: University of Washington, 1938. 202 p. illus. 25 cm. (University of Washington. Publications in oceanography. Vol. 3, no. 2) Paper, \$1.25. 1297b

Contents: Acknowledgments. Physical and chemical investigations in Bering Sea and portions of the North Pacific Ocean: Outlines of cruises and the work. Description of the region. Stations and sections. Experimental methods. Description of data tables. Description of charts and graphs. Results and discussions. Summary. Literature cited. Appendix: Tables and charts.

Note: A collection of 24 tables and 82 charts covering the results of a study of the physical and chemical conditions of the sea water in the region indicated, including temperature and chlorinity measurements for computing density distribution and currents, direct current measurements, and measurements of the distribution of dissolved oxygen and nutrient salts in the region. There is an evaluation of the results in the Introduction followed by a list of 27 references to pertinent literature.

BIGELOW, HENRY BRYANT

Oceanography; its scope, problems, and economic importance. Boston: Houghton Mifflin Company, 1931. 262 p. 21 cm. \$2.50. 1298

Contents: Introductory. Submarine geology. Submarine topography. Submarine sedimentation. Submarine dynamic geology. Physical and chemical problems of the sea water. Temperature and salinity of the sea water. Circulation. Penetration of radiant solar energy into the sea. Chemical problems of the sea. Relationship between oceanography and meteorology. Life in the sea. Oceanic zoology and botany. Marine physiology. Marine bacteriology. Economic value of oceanographic investigations. The sea fisheries. Navigational problems. Currents as affecting harbor construction and the protection of shore property. Soundings in connection with the laying of submarine cables. Oceanography and seasonal weather forecasts. Physical, chemical, geologic, and biologic unity in the sea.

Note: An attempt to describe the condition in 1931 of oceanographic research with reference to the more outstanding problems, in order to lay a basis for future research. Oceanography is discussed in its three chief divisions—geological, physical-chemical, and biological—with consideration of all the characteristics of the bottom and margins of the sea, the sea water, and its inhabitants. The work is part of a report submitted to the National Academy of Sciences in 1929 by its Committee on Oceanography.

BRADLEY, WILMOT HYDE, AND OTHERS

Geology and biology of North Atlantic deep-sea cores between Newfoundland and Ireland. Washington, D.C.: Government Printing Office, 1942. 162 p. illus. 28 cm. (United States. Geological Survey. Professional paper 196) Paper, \$1.25. 1299

Contents: Part I: Lithology and geologic interpretations, by M. N. Bramlette and W. H. Bradley. Part II: Foraminifera, by Joseph A. Cushman and Lloyd G. Henbest. Part III: Diatomaceae, by K. E. Lohman. Part IV: Ostracoda, by Willis L. Tressler. Part V: Mollusca, by Harald A. Rehder. Part VI: Echinodermata, by Austin H. Clark. Part VII: Miscellaneous fossils and significance of faunal distribution, by Lloyd G. Henbest. Part VIII:

Organic matter content, by P. D. Trask, H. W. Patnode, and others. Part IX: Selenium content and chemical analyses, by Glen Edgington and H. G. Byers. Index.

Note: A collection of papers representing various studies and analyses made on a series of eleven samples of the deep ocean bottom between the Grand Banks of Newfoundland and the continental shelf of southwest Ireland. These cores, which are eight feet or more long, represent a longer span of the earth's late geologic history as recorded in abyssal sediments than has hitherto been accessible. Because the cores are few in number and widely spaced, many of the interpretations must be received not as definite conclusions but rather as suggestions to be tested by future coring. References are given in footnotes and there are 23 plates of photographs of fossils.

CONTRIBUTIONS TO MARINE BIOLOGY: lectures and symposia given at the Hopkins Marine Station, December 20–21, 1929, at the mid-winter meeting of the Western Society of Naturalists. Stanford University, Calif.: Stanford University Press, 1930. 277 p. illus. 26 cm. \$7.50. 1299a

Contents (abridged): Factors in the evolution of the pelagic Ciliata, the Dinoflagellata, by Charles Atwood Kofoid. The oceanographic point of view, by T. Wayland Vaughan. Oceanography; a survey of some of the methods used in modern dynamical oceanography, by George F. McEwen. The distribution of oxygen in the Pacific, by Erik G. Moberg. A progress report on ionic ratios and specific gravity of sea water, by Thomas G. Thompson. A summary of studies of the phosphate content of the waters of the San Juan Archipelago, by Thomas G. Thompson and others. An oceanographic survey of the Strait of Georgia, by A. H. Hutchinson and others. Permeability: Some aspects of the physical chemistry of permeability to ions, by S. C. Brooks. Observations on *Dunaliella viridis*, Tedesco, by L. G. M. Baas-Becking. Experimental changes in the permeability of the cell, by E. Wellhorn. The accumulation of mineral elements by plant cells, by D. R. Hoagland. Photosynthesis (three papers). Early development (three papers). Marine Algae (two papers). Growth (four papers).

Note: Twenty-three papers by specialists in each of the various fields of oceanography and marine biology. Bibliographies appear at the end of each paper.

GOODMAN, JOE R., AND THOMAS G. THOMPSON

Characteristics of the waters in sections from Dutch Harbor, Alaska, to the Strait of Juan de Fuca and from the Strait of Juan de Fuca to Hawaii. Seattle, Wash.: University of Washington, 1940. 65 p. illus. 25 cm. (University of Washington. Publications in oceanography. Vol. 3, no. 3) Paper, \$0.75. 1300a

Contents: Acknowledgments. Apparatus, system of sampling, and chemical methods. Sections: Aleutian Islands—Strait of Juan de Fuca. Strait of Juan de Fuca to Hawaiian Islands. Current vectors based on pycnometric distortion. Vertical movement of the surface layers. Summary. Literature cited. Appendix: Tables and charts.

Note: Summarizes the results obtained from the survey made by representatives of the Oceanographic Laboratories of the University of Washington aboard the U.S.S. *Oglata* to aid in the occupation of a series of observing stations in two sections in the North Pacific about 150 miles apart. The data obtained consist of temperature and chlorinity values for sea water down to depths of 2,500 to 3,000 meters, from samples secured by means of modified Nansen-Knudsen bottles and Richter and Wiese reversing thermometers.

GOODMAN, JOE R., AND OTHERS

Physical and chemical investigations: Bering Sea, Bering Strait, Chukchi Sea, during the summers of 1937 and 1938, by Joe R. Goodman, John H. Lincoln, Thomas G. Thompson, and Frederick A. Zausler. Seattle, Wash.: University of Washington, 1942. 185 p. illus. 25 cm. (University of Washington. Publications in oceanography. Vol. 3, no. 4) Paper, \$1.60. 1300b

Contents: Acknowledgments. Introduction. The area. Previous investigations. Experimental methods. Discussion of data: Temperature. Chlorinity. Phosphate. Dissolved oxygen. Silicates. Nitrites. Currents. Ice. Summary. Literature cited. Appendix: Tables and charts.

Note: The bulk of the material is contained in the 117-page appendix, which presents a transcription of the tables and charts derived from the investigations and studies made by the authors of temperatures and chlorinity, dissolved oxygen, phosphate and silicate concentrations of the waters at various depths. Data explaining the origin and movement of the waters are also included, and there is a 68-page introductory analysis of general results with a list of 12 references to the world literature.

GRIER, MARY CATHARINE

Oceanography of the North Pacific Ocean, Bering Sea and Bering Strait: a contribution toward a bibliography. Seattle, Wash.: The University of Washington, 1941. 290 p. 25 cm. (University of Washington publications. Library series. Vol. 2, May, 1941) Paper, \$2.50. 1301

Contents: General references. Physical oceanography. General biology. Plankton. Invertebrata. Pisces. Aves. Mammalia. Flora. Indexes.

Note: A bibliography giving a fairly comprehensive list of references covering the world literature on the oceanography of the region. There are approximately 3,000 entries of books and publications issued from about 1800 to 1939, arranged alphabetically by author within each subject heading. The section on the Invertebrata is subdivided according to order and family. There is a considerable number of Japanese works included, which deal with technical data on tidal currents, atmospheric conditions, and hydrographic researches. There are no annotations or abstracts.

IGELSRUD, IVER, AND OTHERS

The distribution of phosphates in the sea water of the northeast Pacific, by Iver Igelsrud, Rex J. Robinson, and Thomas G. Thompson. Seattle, Wash.: University of Washington, 1936. 34 p. illus. 25 cm. (University of Washington. Publications in oceanography. Vol. 3, no. 1) Paper, \$0.25. 1301a

Contents: Introduction. Description of region investigated. The method of analysis. Results and discussion. Summary. Literature cited.

Note: A summary of investigations of inorganic phosphate in the waters of the Pacific Ocean off the northwestern Washington and the Vancouver Island coasts and of the Strait of Juan de Fuca and the waterways adjoining it on the north, including a study of the upwelling of deep ocean water, its transportation to waters north of the San Juan Archipelago, and the importance of tidal mixing as found in the various channels and straits.

ISELIN, COLUMBUS O'DONNELL

A study of the circulation of the western North Atlantic. Contribution no. 108 from the Woods Hole Oceanographic Institution. Cambridge and Woods Hole, Mass.: Massachusetts Institute of Technology and Woods Hole

Oceanographic Institution, 1936. 101 p. illus. 28 cm. (Papers in physical oceanography and meteorology. Vol. iv, no. 4) \$1.00. Orders for this number should be addressed to Woods Hole Oceanographic Institution, Woods Hole, Mass. 1302

Contents (abridged): Introduction. The Bermuda triangle: Distribution of temperature and salinity by the method of sections. Variations of temperature and salinity with depth. Correlation between temperature and salinity. The deep water. Density. Other Atlantic sections: Mid-Atlantic. Antilles current. Florida current. The Gulf Stream system: Previous subsurface investigations. The three subdivisions. Sources and character. The Sargasso Sea: Surface movements in relation to wind. Lateral movements at mid-depths. Internal mixing. Summary and conclusions. Bibliography.

Note: With the opening of the Woods Hole Oceanographic Institution in July, 1931, there was inaugurated a program of investigations in the deep waters of the western North Atlantic, where accurate, deep stations had been lacking. A general program was initiated which would be carried out gradually in order to take advantage of knowledge gained during the course of the work. This paper presents a preliminary report based on the temperature and salinity observations that have been completed. Since the movements of the sea water tie together the whole subject of oceanography, it seemed essential that data on ocean circulation be made available as soon as possible for investigators of other problems in the same area.

MARMER, HARRY AARON

The sea. New York: D. Appleton and Co., 1930. 312 p. illus. 21 cm. \$3.00. 1303

Contents: The sea of ancient times. The crossing of the ocean. Legendary isles. The Sargasso Sea. The Northwest Passage. The attainment of the Poles. The extent of the oceans. The depths of the sea. The bottom of the sea. The level of the sea. The surface waters. The waters of the depths. Ice in the sea. Waves of the sea. The tide. Tidal currents. Ocean currents. The Gulf Stream. The science of the sea. Index.

Note: A non-technical book for the layman, which combines oceanography with the history and description of the sea.

NATIONAL RESEARCH COUNCIL

Report of the Committee of Marine Ecology as related to Paleontology, Harry S. Ladd, chairman. Presented at the annual meetings of the Division of Geology and Geography, National Research Council. Washington, D.C.: National Research Council, 1941-44. 4 v. 28 cm. Paper, \$0.50 per volume. 1303a

Contents (abridged): Volume I: Introduction. Significance of fossil assemblages. Current activities of interest to geologists. Some recently published papers. Ecology of diatoms, by Kenneth E. Lohman. Recent marine ecological investigations of paleontological significance at the Scripps Institute of Oceanography, by M. L. Watland and others. Ecological studies of Foraminifera, by Earl Hamlet Myers. Recent studies of the ecology of corals, by T. Wayland Vaughan. Volume II: Ecologic relationships of some recent and fossil Foraminifera, by Earl Hamlet Myers. Ecology of some Permian Brachiopoda, by G. Arthur Cooper. Environment of early Paleozoic nautiloids, by Rousseau H. Flower. Marine ecological work along the Gulf Coast, by Gordon Gunter. Volume III: Diatoms as food of oysters, by Thurlow C. Nelson. Ecologic relationships of larger Foraminifera, by Earl Hamlet Myers. Tertiary and Cretaceous paleontology of California based on fossil fish remains, by Lore R. David. Volume IV: Biology of the Foraminifera in relation to stratigraphy and petroleum geology, by Earl Hamlet Myers. Reefs and other bioherms, by Harry S. Ladd.

Note: In addition to the short technical papers presented in this mimeographed series there are lists of recently published articles in each volume, with accounts of current research activities in the United States and abroad.

ROSSBY, CARL-GUSTAF

Dynamics of steady ocean currents in the light of experimental fluid mechanics. Contribu-

tion no. 115 from the Woods Hole Oceanographic Institution. Cambridge and Woods Hole, Mass.: Massachusetts Institute of Technology and Woods Hole Oceanographic Institution, 1936. 43 p. illus. 28 cm. (Papers in physical oceanography and meteorology. Vol. v, no. 1) \$1.00. Orders for this number should be addressed to Meteorological Division, Massachusetts Institute of Technology, Cambridge, Mass. 1304

Contents: Introduction. Theoretical discussion: Formulation of problem. Effect of the earth's rotation on lateral stresses. "Coriolian" pressure gradients. Wake stream theory. Wake stream in stratified medium. Applications to the Gulf Stream system: Temperature-salinity correlations. Oxygen-salinity correlations. References.

Note: This is a report of an investigation which may be regarded as part of a systematic effort to introduce into meteorology and physical oceanography methods and results which have contributed to the rapid growth and increasing practical significance of experimental fluid mechanics. In this paper the principal imperfections of the present theory for the oceanic circulation are first set forth. Frictional forces due to horizontal mixing are then introduced and the effect of the earth's rotation on the horizontal eddy velocities analyzed. Tollmien's theory for the mixing along the edges of a steady stream moving through a resting fluid is then discussed and certain experimental verifications are described. With the aid of a principle first stated by G. I. Taylor, Tollmien's results are applied to current systems subject to a deflecting force. Finally, certain modifications resulting from the stratification in the ocean are treated. In the second part of the paper the mixing between the Gulf Stream and its surroundings is traced with the aid of the observed distribution of temperature, salinity, and oxygen.

SEIWELL, HARRY RICHARD

Application of the distribution of oxygen to the physical oceanography of the Caribbean Sea region. Contribution no. 162 from the Woods Hole Oceanographic Institution. Cambridge and Woods Hole, Mass.: Massachusetts Institute of Technology and Woods Hole Oceanographic Institution, 1938. 60 p. illus. 28 cm. (Papers in physical oceanography and meteorology. Vol. vi, no. 1) \$0.75. Orders for this number should be addressed to Woods Hole Oceanographic Institution, Woods Hole, Mass. 1305

Contents (abridged): Introduction. Regional variation of oxygen in the Caribbean Sea region. General distribution. Above threshold depths. Below threshold depths. Relation of oxygen distribution to physical properties of the water: Summary of physical properties. General oxygen salinity relationships. General oxygen relationship to minimum salinity. Minimum oxygen concentration in relation to salinity anomaly. Minimum oxygen concentration in relation to density. Oxygen distribution and related properties as evidence of eddy diffusion: Introduction to the method. Vertical diffusion. Lateral diffusion. Oxygen and the general circulation. Oxygen and the origin of the deep water. Résumé. Bibliography.

Note: Observational data for this discussion were obtained principally during the two cruises of the oceanographic research ship, "Atlantis," to the Caribbean Sea March 7 to May 5, 1933 (stations 1487-1610) and February 2 to March 2, 1934 (stations 1935-2002). The observations supplied the necessary information for a detailed study of the distribution of oxygen in the Caribbean Sea region. These data were employed in circulation studies, for it has been found that the use of identifying properties of sea water (temperature, salinity, oxygen, etc.) in various combinations is helpful in supplementing and corroborating results obtained from application of the Bjerknes dynamic method.

SEIWELL, HARRY RICHARD

The cycle of phosphorus in the western basin of the North Atlantic. I. Phosphate phosphorus.

Contribution no. 64 from the Woods Hole Oceanographic Institution. Cambridge, Mass.: Massachusetts Institute of Technology and Woods Hole Oceanographic Institution, 1935. 56 p. illus. 28 cm. (Papers in physical oceanography and meteorology. Vol. iii, no. 4) \$1.00. Orders for this number should be addressed to Woods Hole Oceanographic Institution, Woods Hole, Mass. 1306

Contents (abridged): Introduction. Region of investigation. Methods. Vertical distribution of phosphate phosphorus. Horizontal distribution of phosphate phosphorus. Vertical upward transport of phosphate by turbulence: The exchange coefficient of eddy conductivity. Position of transport layer in water column. Vertical variation of σ_t and phosphate within the transport layer. Estimation of regional variation of coefficient of eddy conductivity. Calculation of vertical upward transport of phosphate from rich midstrata to impoverished surface layer. Depth of layer of plant activity. Bibliography.

Note: Since the discovery of the importance of phosphorus for organic production in the sea, by Brandt in 1899, and the demonstration of the complete dependence of algal growth on phosphate, by Atkins in 1923, phosphate determination has become a component part of the program of most deep-sea investigations and much general information on its distribution and variation in the open ocean has been brought to light. The material for this report has been obtained principally from "Atlantis" cruises in the western North Atlantic. It is planned to follow the present account with a second part treating other phases involved in the phosphorus cycle of this region.

SKOGSBERG, TAGE

Hydrography of Monterey Bay, California. Thermal conditions, 1929-1933. Philadelphia, Pa.: The American Philosophical Society, 1936. 152 p. illus. 29 cm. (American Philosophical Society. Transactions. New series, Vol. xxix, p. 1-152) Paper, \$3.00. 1306a

Contents: Introduction. History and purpose of survey. Location. Physiography in relation to hydrography. Methods and material. Monthly thermal conditions in the upper one hundred meters. Annual thermal conditions in the superficial strata: Thermal conditions in the upper 50 meters, in 1929. Thermal conditions in the upper 50 meters, in 1930. Thermal conditions in the upper 100 meters, in 1931. Thermal conditions in the upper 100 meters, in 1932. Thermal conditions in the upper 100 meters, in 1933. Normal annual rhythm in the upper 100 meters. Comparisons of the annual thermal conditions in the superficial strata: Thermal conditions at the surface, 50 meters, and 100 meters. Relative amounts of water of different degrees of temperature in the upper 50 meters. Monthly amplitudes or thermal variation. Surface temperatures, by the shore, from 1919 to 1934. Thermal conditions below 100 meters: Monthly thermal conditions between 100 and 250 meters. Thermal conditions between 250 and 900 meters. Annual thermal rhythm from the surface to 900 meters. Water movements underlying the thermal rhythm: Effects of the tides on the thermal rhythm. Water movements underlying the irregularities in the superficial thermal rhythm and causes of these movements. Water movements underlying the annual rhythm. Causes of other thermal characteristics. Special circulatory conditions. Circulation and bottom sediments. Water temperatures and the fisheries. Summary and conclusions. Appendix of tables of monthly average temperatures. Bibliography.

Note: This paper reports the thermal conditions as obtained in a five-year hydrographic survey of Monterey Bay, an important center of the fishing industry in California. Because of the extensive nature of the available data, it was found practical to reproduce only a limited portion of the available readings. Aside from summarizing the results of the thermal survey, the publication attempts to interpret the established thermal characteristics in terms of circulatory phenomena.

SVERDRUP, HAROLD ULRIK, AND OTHERS

Oceanographic observations of the "E. W. Scripps" cruises of 1938-40, by H. U. Sverdrup and the staff of the Scripps Institute of Oceanography.

nography. Berkeley, Calif.: University of California Press, 1942-44. 3 parts. illus. 28 cm. (Scripps Institution of Oceanography. Record of observations. Vol. 1, nos. 1-3) Paper, Part 1, \$0.75; parts 2, 3, \$1.00 each. 1306b

Contents (abridged): Volume 1: Number 1: The cruises of 1938, by H. U. Sverdrup. The "E. W. Scripps," by E. G. Moberg and J. Lyman. Results in physical oceanography, by R. H. Fleming. Diatoms, by W. E. Allen. Notes on zoöplankton, by M. W. Johnson. Tables of oceanographic observations, 1938. Number 2: Oceanographic observations on the "E. W. Scripps" cruises in 1939, by H. U. Sverdrup and staff. Oceanographic results from the "E. W. Scripps" cruise viii, May 10-July 10, 1939, by Richard B. Tibby. Soundings in the Gulf of California and off the west coast of Lower California in 1939, by Roger Revelle. Current measurements off the California coast in 1938 and 1939, by Roger Revelle and Francis P. Shepard. Tables of oceanographic observations. Number 3: The "E. W. Scripps" cruises of 1940: Cruises x to xvi. Tables of oceanographic observations, 1940.

Note: These monographs present by means of tables, charts, and descriptive notes the essential results of the first 16 cruises of the schooner *E. W. Scripps* between 1938 and 1940 which were devoted to physical and chemical observations and to studies of marine biology in the waters in and adjacent to the Gulf of California. There is little attempt at interpretative evaluation of the findings, the main purpose being to present in tabular form the statistical data recorded during the cruises.

SVERDRUP, HARALD ULRIK

Oceanography for meteorologists. New York: Prentice-Hall, Inc., 1942. 246 p. illus. 23 cm. \$4.65. 1307

Contents: Introduction. Physical properties of sea water. Observations in physical oceanography. The heat budget of the oceans. General distribution of salinity, temperature, and density. Ocean currents related to the distribution of mass. Wind currents and wind waves. Thermodynamics of ocean currents. Water masses and currents of the oceans. Interaction between the atmosphere and the oceans. Index.

Note: A text and reference book for meteorologists presenting the latest available information on the findings in physical oceanography which have bearing upon the problems of the atmosphere. The work describes the methods in current use in physical oceanography and contains a summary of our present knowledge of the current systems of the oceans and of the processes which maintain the currents. Temperature, salinity, currents of the upper layers of the oceans, and the factors controlling the existing conditions are the features which have been emphasized. Deep-water circulation of the oceans and the theories of large-scale ocean currents and of wind-driven currents have also been included. A working knowledge of the calculus is assumed on the part of the reader. Four surface temperature charts and a bibliography of 12 selected books are included.

SVERDRUP, HARALD ULRIK, AND OTHERS

The oceans, their physics, chemistry, and general biology, by H. U. Sverdrup, Martin W. Johnson, and Richard H. Fleming. New York: Prentice-Hall, Inc., 1942. 1087 p. illus. 23 cm. \$10.00. 1308

Contents: Introduction. The earth and the ocean basins. Physical properties of sea water. General distribution of temperature, salinity, and density. Theory of distribution of variables in the sea. Chemistry of sea water. Organisms and the composition of sea water. The sea as a biological environment. Populations of the sea. Observations and collections at sea. General character of ocean currents. Statistics and kinematics. Dynamics of ocean currents. Waves and tides. The water masses and currents of the oceans. Phytoplankton in relation to physical-chemical properties of the environment. Animals in relation to physical-chemical properties of the environment. Interrelations of marine organisms. Organic production in the sea. Marine sedimentation. Appendix: tables for computing geopotential distances between isobaric surfaces. Index.

Note: A comprehensive reference book on the subject. A large amount of factual information is provided, while at the same time the aim is to help the beginner and specialist to coordinate the various fields of oceanography. The bibliographies following

chapters are extensive. A number of illustrative charts are appended.

UNITED STATES. COAST AND GEODETIC SURVEY
Hydrographic manual. Revised (1942) edition. Washington, D.C.: Government Printing Office, 1942. 940 p. illus. (part col.) 26 cm. (United States. Coast and Geodetic Survey. Special publication no. 143) \$2.75. 1309

Contents (abridged): Preliminary. Control and signal building. Hydrography. Equipment and instruments. Echo sounding. Radio acoustic ranging. The smooth sheet. Records and reports. Miscellaneous. Index.

Note: A comprehensive and detailed manual and textbook describing modern methods of hydrographic surveying and equipment, including the general requirements of the United States Coast and Geodetic Survey for the execution of hydrographic surveys. The book describes in detail for the first time the instruments and methods used in echo sounding and radio range acoustics. The subject matter has been identified by a decimal numbering system to which all references in the extensive index are made. Among the separate topics treated are triangulation, topography, shore hydrographic stations, signal building, large-scale offshore surveys, survey ships and auxiliary vessels, depth finding equipment and instruments, oceanographic instruments, radio acoustic range stations, bombs and explosives, plotting control and positions, reductions of soundings, and miscellaneous reports and data. There is a large section devoted to symbols and abbreviations for nautical charts used by the Coast and Geodetic Survey, with colored illustrations, and a list of related publications and reference works. Such subjects as shore astronomic observations, triangulation, topography, tides, magnetic observations, etc., for each of which there is a separate manual, are either omitted or treated only briefly.

UNITED STATES. COAST AND GEODETIC SURVEY
Manual of current observations. Washington, D.C.: Government Printing Office, 1938. 75 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 215) Paper, \$0.15. 1309a

Contents: General explanation. Instruments for observing. Current surveys. Observations at lightships. Reduction of current records. Index.

Note: This manual gives the general requirements of the United States Coast and Geodetic Survey in the observation and reduction of currents. The pamphlet is designed to serve as a companion to the Bureau's *Manual of tide observations* (Special publication no. 196), Washington, D.C., 1941 (see Index).

UNITED STATES. COAST GUARD

International ice observation and ice patrol service in the North Atlantic Ocean. Season of 1940. By W. P. Hawley, Ed. H. Smith, C. A. Barnes, and Floyd M. Soule. Washington, D.C.: Government Printing Office, 1941. 89 p. illus. 23 cm. (United States. Coast Guard. Bulletin no. 30) Paper, Gratis. 1309b

Contents: Ice conditions, ice patrol area, 1940. Ice observation cruise, *Chelan*, May 12-June 2. Table of ice and obstruction reports. Ice observation in the Greenland sector, 1940. Oceanographic investigation in Baffin Bay in 1940. Physical oceanography, the Grand Banks region and the Labrador Sea in 1940. Table of oceanographic data.

Note: This bulletin is the latest available publication in a series of annual reports on ice observations and patrol service made by the United States Coast Guard in the interests of the International Ice Patrol. Insufficient ice drifted into the Ice Patrol area to warrant inaugurating ice patrol during the year 1940. The *General Greene* carried out the normal oceanographic program and two ice observations were made, first by the Coast Guard cutter *Chelan* and second by the Coast Guard cutter *Northland*. The former vessel searched the Labrador Current from the Tail of the Grand Banks to the Straits of Belleisle and the latter cruised along the east and west coasts of Greenland, making oceanographic observations in addition to performing ice observation duty.

UNITED STATES. COAST GUARD

The "Marion" expedition to Davis Strait and Baffin Bay under the direction of the United States Coast Guard, 1928; scientific results. Washington, D.C.: Government Printing Office, 1931-32. 2 v. illus. 23 cm. (United States. Coast Guard. Bulletin no. 19, parts 1, 3) Paper, Part I, \$0.50; part 3, Gratis. 1309c

Contents (abridged): Part I: The bathymetry and sediments of Davis Strait, by Noble G. Ricketts and Parker D. Trask. Part III: Arctic ice, with especial reference to its distribution to the North Atlantic Ocean, by Edward H. Smith.

— The "Marion" and "General Greene" expeditions to Davis Strait and Labrador Sea under the direction of the United States Coast Guard, 1928-1931-1933-1934-1935; scientific results. Washington, D.C.: Government Printing Office, 1937. 259 p. illus. 23 cm. (United States. Coast Guard. Bulletin no. 19, part 2) Paper, \$0.75. 1309d

Contents (abridged): Part II: Physical oceanography, by Edward H. Smith, Floyd M. Soule, and Olav Mosby: The northwestern North Atlantic. The West Greenland sector. The Davis Strait sector. The American sector. The Grand Banks sector. The Labrador Sea.

Note: These three volumes constitute a report based on the observations of the *Marion* expedition, 1928, and amplified by the cruises of the *General Greene* to the Labrador Sea, 1931 and 1933-35. The material consists of temperature and salinity observations from surface and subsurface, the treatment center-

ing on a description of the distribution and correlation of these two physical characteristics and their dependent variables in vertical and horizontal planes. A few oxygen observations are also presented in order to determine the vertical motion in the deeper water of the Labrador Sea. There are bibliographies in parts II and III, and a separate index in the latter. Part II has been issued also as Contribution no. 107 of the Woods Hole Oceanographic Institution, Woods Hole, Mass., 1938.

VAUGHAN, THOMAS WAYLAND, AND OTHERS

International aspects of oceanography. Oceanographic data and provisions for oceanographic research. Washington, D.C.: National Academy of Sciences, 1937. 225 p. illus. 31 cm. Gratis. 1310

Contents (abridged): Serial sections of temperature and salinity in the different ocean basins: General discussion. Atlantic Ocean and connecting seas. Pacific Ocean. Red Sea and Indian Ocean. Charting the bottom of the oceans. Submarine earthquake epicenters, magnetic observations at sea, tidal records. Results of maritime gravity research, 1923-1932, by F. A. Vening Meinesz. Catalogue of institutions engaged in oceanographic work.

Note: This study may be regarded as a companion volume or supplement to H. B. Bigelow, *Oceanography, its scope, problems, and economic importance*, Boston, 1931 (see Index). The present volume does not attempt to cover the ground of Bigelow's work, but rather is planned to show, mostly by means of charts, the status of the exploration of the different oceans for several lines of research, and to present a catalogue of institutions engaged in oceanographic work. The material is divided into three main branches, namely, the study of water masses in ocean basins, the study of the interaction of the sea and the atmosphere, with a discussion of solar radiation and its penetration into seawater, and, finally, the study of the configuration and composition of the ocean bottom. There are numerous maps and charts and a considerable amount of international data.

NATURAL HISTORY

General

BEEBE, CHARLES WILLIAM

Book of bays. New York: Harcourt, Brace and Company, 1942. 302 p. illus. 22 cm. \$3.50. 1311

Contents: Elephants of the sea. Lions of the ocean. A day of accidents. A ladder of limpets. On knees to beauty. The white Morpho of Tenacatita. Night festa in Manzanillo. From baby sailfish to La Esperanza. The river of mud and sweetness. Two bays of Purgatory. Tangola-Tangola. Salvador—de omnibus rebus. A volcano's child. Mangrove magic. Tidepools: day and night. Papagayo paradise. The bay of sea snakes. A day in the bay of Piedra Blanca. Night calls at sea (with Eric Liljencrantz). San José and the isle of jasper. Golfito: bay of jungles. Dancing fiddlers (with Jocelyn Crane). Sirens of the deep. Appendixes. Index.

Note: The chief object of the trip on which this book was based was to study as thoroughly as possible the fish, crabs, and mollusks, from tide pools down to five hundred fathoms, with more emphasis placed on ecological relationship, colors, and habit than on the collection of specimens. The work is written in semi-popular style for the interested layman and is largely a narrative of events rather than a scientific report, although the scientific names of all specimens mentioned are given in the appendix and there is a list of the published scientific articles relating to the expedition for further reference.

BEEBE, CHARLES WILLIAM, EDITOR

The book of naturalists: an anthology of the best natural history. New York: Alfred A. Knopf, 1944. 499 p. illus. 22 cm. \$3.50. 1311a

Contents (abridged): Fishing-frogs, cuckoos, and other things, by Aristotle. Disagreements between elephants and dragons, by Pliny. The migration of birds, by Frederick II. The rhinoceros and the mouse, by Conrad Gesner. Why ants have wings, by René de Réaumur. From bats and manatees to cats and camels, by Carl Linnaeus. The rattle snake, by William Bartram. The sloth, by Charles Waterton. Excerpts from the *Diary of the voyage of H. M. S. Beagle and the Origin of species*, by Charles Darwin. Mimicry, and other protective resemblances among animals, by Alfred Russel Wallace. The aims of an expedition, by Louis Agassiz. On a piece of chalk, by Thomas Henry Huxley. The water ouzel, by John Muir. The swarm, by Maurice Maeterlinck. Foreword to *A book-lover's holidays in the open*, by Theodore Roosevelt. About tadpoles, by J. Arthur Thomson. Old friends in new places, by John Burroughs. Foxes, owls, and polar bears, by Vilhjalmur Stefansson. Elephant friends and foes, by Carl Akeley. The migration of elephants, by Henry Fairfield Osborn. The uniqueness of man, by Julian S. Huxley. Selected biographical material.

Note: The editor has selected excerpts from the writings of 45 classical and modern writers and scientists in the field of natural history, presenting them in chronological order with short biographical notes on each author. The work thus offers an outline of the development of natural history as well as an introduction to the source material itself. Intended for the general reader, the selections have been chosen for their general interest and descriptive qualities rather than for purely scientific content. A short bibliography of general and individual works is included.

COMSTOCK, ANNA BOTSFORD

Handbook of nature-study. Twenty-fourth edition. Ithaca, New York: Comstock Publishing Company, Inc., 1939. 937 p. illus. 27 cm. \$4.50. 1312

Contents: Part I, The teaching of nature-study. Part II, Animals: birds, fishes, amphibians, reptiles, mammals, insects of the fields and woods, insects of the brook and pond, other invertebrate animals. Part III, Plants: wild flowers, weeds, garden flowers, cultivated crop plants, trees, flowerless plants. Part IV, Earth

and sky: the brook, rocks and minerals, the soil, the magnet, climate and weather, water forms, the skies. Bibliography. Index.

Note: A well-known text and reference book. In this edition extensive revisions have been made to accord with recent scientific knowledge. Some of the chapters have been expanded, with special emphasis on those relating to soil conservation and to astronomy. With each of the seven hundred discussions of subjects in nature, a lesson, containing a leading thought to be emphasized by the teacher, is included, with a description of the best method of developing this idea through personal observation. The nearly fifty pages of bibliography include an up-to-date list of publications.

DRACHMAN, JULIAN MOSES

Studies in the literature of natural science. New York: The Macmillan Company, 1930. 487 p. illus. 22 cm. \$4.00. 1312a

Contents: Introductory. What if anything is scientific literature? Part I, The first thirty years (the catastrophic war): Boundless providence or limitless change. The events of 1830. Other men and later years. Part II, Theories of evolution: To the grand century. Darwin the first. French and German theorists. A few eccentrics—the great discussion again. "Vestiges of creation" and "Footprints of the creator." Anatomist against philosopher (Owen and Spencer). Part III, Darwin and other Victorians: Pattern of an idler. The "Beagle" adventure. Species become an obsession. The great book—friends and a rival. Arms clash on Parnassus. Bringing up the rear. "Hobby-horses" of a retired naturalist. Gladiator—general and maid-of-all-work. Followers. Part IV, Certain special types: The great synthesists. Popularizers of science. Natural history essays and journals of travel. Unity or plurality? Is life limited to the earth? Questionnaire on the literature of science. Bibliography. Index.

Note: This volume is at the same time an introduction to and a history of the nineteenth-century literature of the natural sciences. The bibliography contains approximately 500 titles.

GRINNELL, JOSEPH

Joseph Grinnell's philosophy of nature; selected writings of a western naturalist. Berkeley: University of California Press, 1943. 237 p. illus. (part col.) 24 cm. \$2.00. 1313

Contents: Call notes of the bush-tit. The origin and distribution of the chestnut-backed chickadee. Composition of the Prince William Sound avifauna; discussion of its origin. The methods and uses of a research museum. The Colorado river as a highway of dispersal of species. Barriers to distribution as regards birds and mammals. Conserve the collector. Field tests of theories concerning distributional control. The English sparrow has arrived in Death Valley: an experiment in nature. Sequestration notes. The principle of rapid peering in birds. The museum conscience. The role of the "accidental." The trend of avian population in California. The burrowing rodents of California as agents in soil formation. A possible function of the whiteness of the breast in crevice-searching birds. Geography and evolution. Bird netting as a method in ornithology. A conservationist's creed as to wild-life administration. Geography and evolution in the pocket gopher. Tree surgery and the birds. Presence and absence of animals. Differentiation areas. Significance of faunal analysis for general biology. Linnets and dandelions. A revised life-zone map of California. Up-hill planters.

Note: Factors which limit the distribution of animals, based on details of their reactions to environment, are the prevailing theme in this collection of essays by a western naturalist. The papers are arranged in chronological order.

SMALLWOOD, WILLIAM MARTIN, AND MABEL SARAH COON SMALLWOOD

Natural history and the American mind. New York: Columbia University Press, 1941. 445 p.

illus. 23 cm. (Columbia studies in American culture. No. 8) \$4.25. 1314

Contents: Early writings on American natural history. Natural history in the colleges, 1640-1790. What Americans studied in European universities. Some early cultural centers. Diffusion of natural history culture. The contribution of publishers, artists, and engravers to the science of natural history. The part played by the microscope. The philosophy of the naturalist. Amos Eaton and the academies. Early teaching of natural history in the colleges. Natural history struggles for academic recognition. The passing of the naturalist. Bibliography. Index.

Note: This volume presents a study of the role of the naturalist in the development of science and culture in America during the period prior to 1850. The material is limited to the eastern United States, where the early settlements were made and the early cultural centers began. Individual naturalists are selected for detailed consideration as being typical of the period, and no attempt is made to include all of the important naturalists of America. Emphasis is laid on the study of living things although some attention is given to geology and mineralogy. There are excerpts from the writings of various scientists of the period and reproductions of original title-pages and text illustrations. The extensive bibliography covers manuscripts, books, periodicals, and newspapers used as references by the authors.

SMITHSONIAN INSTITUTION

A field collector's manual in natural history. Prepared by members of the staff of the Smithsonian Institution. Washington, D.C.: The Smithsonian Institution, 1944. 118 p. illus. 13 cm. (Smithsonian Institution. Publication 3766) Paper, \$0.50. 1314a

Contents: Introduction. General instructions. Mammals. Birds. Reptiles. Amphibians. Fishes. Acorn worms. Mollusks. Insects. Spiders. Crustaceans and miscellaneous vertebrates. Earthworms. Leeches. Echinoderms. Corals. Plants. Living animals. Anthropological materials. Fossil vertebrates. Fossil invertebrates and plants. Rock specimens and ores. Minerals. Meteorites.

Note: A brief pocket guide to the mechanical details of collecting, labeling, measuring, preserving, skinning, packing, shipping, and general handling of all types of specimens, prepared primarily for those amateur naturalists in the armed forces who are stationed abroad in non-combat zones and who wish to collect some of the rocks, plants, and animals which they may encounter in recreational field trips.

Bibliography

ALTSHELER, BRENT

Natural history index-guide. An index to 3,365 books and periodicals in libraries; a guide to things natural in the field. Where and how to find the most important objects of natural interest in all countries as described in the leading publications by the popular authors and well-known scientists and explorers of various nationalities. Second edition revised and enlarged in 15 sections with 23 divisions. New York: The H. W. Wilson Company, 1940. 583 p. 26 cm. Sold on service basis. Write for quotation. 1315

Contents: Introduction. General index. Geography. Microscopy. Atmosphere. Astronomy. Meteorology. Geology. Paleontology (fossil vertebrates). Botany. Zoology. Anthropology. Hygiene, health. Food and drink. Equipment. Main bibliography. Supplemental bibliography.

Note: The basic material of this work is a bibliography of 3,658 titles and 2,500 authors, covering works in English or in English translations from about 1800 to 1940. The index, which covers approximately three-fourths of the book, contains some 54,000 separate references under about 9,500 headings arranged in the general groups indicated in the table of contents. The general index, which comes first, presents all the subject-headings in one alphabetical order, with page references after each giving the section in which they are classed. The latter gives the final reference to the main and supplementary bibliographies. The

second edition constitutes a slight rearrangement of material and additional references covering the period 1936-1940.

Natural History of Various Regions

ALDRICH, JOHN WARREN, AND BENJAMIN PATTERSON BOLE, JR.

The birds and mammals of the western slope of the Azuero peninsula, Republic of Panama. Cleveland, O., 1937. 196 p. illus. 23 cm. (Scientific publications of the Cleveland Museum of Natural History. Vol. VII) \$1.00. 1316

Contents: Introduction: The Azuero peninsula. Previous zoological explorations. Bole-Aldrich expedition; collecting stations. Ecology of the region. Topography and vegetation. Climatic factors. Faunal relationships. Community relationships of bird and mammal populations. Annotated list of birds. Annotated list of mammals. List of references.

Note: A study of specimens of birds and mammals collected on the western side of the Azuero peninsula in Panama in 1932 for the Cleveland Museum of Natural History. The list of birds is prepared by J. W. Aldrich and the list of mammals by B. P. Bole, Jr. A brief description of the area in which the collection was made precedes the lists. Information provided for the specimens includes subspecific characters of new races, measurements of adult male and adult female, type, geographic distribution, and remarks on variations, etc.

BAILEY, VERNON

Cave life of Kentucky, mainly in the Mammoth Cave region; with chapters on the birds, by Florence Merriam Bailey and on the invertebrates, by Leonard Giovannoli. Prepared in the Bureau of Biological Survey, United States Department of Agriculture, in cooperation with the Kentucky State Geological Survey. Notre Dame, Ind.: The University Press, 1933. 256 p. illus. 23 cm. \$1.25. 1317

Contents: Introduction. Mammals of the cave region. Birds of the cave region, by Florence Merriam Bailey. Fishes of the caves and cave region. Reptiles of the cave region. Amphibians of the caves and cave region. Invertebrates of the caves, by Leonard Giovannoli. Bibliography of more important publications. Illustrations. Index.

Note: This volume, reprinted from the *American midland naturalist*, vol. xiv, no. 5, 1933, is devoted to a comprehensive report on the general natural history of the Mammoth Cave region, with special reference to the caves themselves. The chapter on birds covers about one-half of the volume. The bibliography contains approximately 110 references.

BARBOUR, THOMAS

That vanishing Eden; a naturalist's Florida. Boston: Little, Brown and Company, 1944. 250 p. illus. 21 cm. \$3.00. 1318

Contents: The first to arrive. Bartram's Florida. Mounds, Seminole. The norther and the hurricane. Forests and fire. Camping. Beaches and sponges. Springs and lakes. Mammals. The Florida ditches. The garden of Eden. Alligators and crocodiles. The islands and the Keys. The Kampong. The Fairchild Tropical Garden. The Everglades National Park. The future. Index.

Note: Essentially a collection of essays, many of them based on the author's personal experiences. The book is of interest to general readers and to naturalists.

BEEBE, CHARLES WILLIAM

Nonsuch: land of water. With 55 illustrations. Published under the auspices of the New York

Zoological Society. New York: Harcourt, Brace and Company, 1932. 259 p. illus. (part col.) 22 cm. \$3.50. 1319

Contents: Mount Bermuda. The cedars of Nonsuch. Almost Island. Slicking for flying fishes. Battlefield of the shore. Flounders are wonderful. Migration. Feathered tourists. Cahows and longtails. Milord the weather. The destiny of a blue shark. Two citizen crabs of Nonsuch. Snail folk. A motherly knight in armor. The schools of little arrows. Text identifications. Illustration. Index.

Note: Well written popular book which describes life in the waters about Nonsuch, Bermuda. Bird and animal life on the island are also discussed.

591.98
e972 CUTRIGHT, PAUL RUSSELL

The great naturalists explore South America. New York: The Macmillan Company, 1940. 340 p. illus. 24 cm. \$3.75. 1320

Contents: Part I: South America and the naturalists. Part II: The vampire bat. Armadillos. Sloths. The anteaters. The puma. The jaguar. The coati. Peccaries. The tapir. The guanaco. The rodents. The manatee. Monkeys. Bird migrants to South America. The rhea. The condor. The hoatzin. Toucans. Hummingbirds. Cock-of-the-rock. Turtles. Caimans and crocodiles. The giant boas. Poisonous serpents. The piranha. Sting-rays. Electric eels. Jungle pests. Insects as food. Butterflies. Bibliography. Index.

Note: This work is divided into two distinct parts. The first is a résumé of the travels and experiences of the great naturalists, such as von Humboldt, Darwin, Wallace, and Hudson, who explored and wrote of South America during the nineteenth and twentieth centuries. The second part is a series of chapters on several of the mammals, birds, reptiles, fish, and insects indigenous to South America. Each chapter gives attention to the more important observations made on these animals by the naturalists as well as their classification, geographical distribution, general description, and habits. There are 42 full-page photographs of various birds, reptiles, and mammals described in the text. Only those animals which the great naturalists found most important or most interesting are considered in the present work. There is a short bibliography of literature written in English.

BIOLOGY

General

ARTSCHWAGER, ERNST FRIEDRICH

5703
1471
Dictionary of biological equivalents; German-English. Baltimore, Md.: The Williams and Wilkins Company, 1930. 239 p. illus. 23 cm. \$2.50. 1320a

Contents: Preface. Acknowledgments. Abbreviations used in this dictionary. Common German abbreviations. Irregular verbs. Metrical equivalents. Important reference books and related dictionaries. Descriptive part. Plates.

Note: Designed to facilitate the intelligent reading of German scientific literature in the field of biology. All words of Latin and Greek derivation have been omitted whenever the English equivalent would be essentially a repetition. In the new German spelling many mute letters, found in older literature, have also been omitted, particularly the *h* following *t*. There are 6 pages of plates showing anatomical details of plants and animals with their German language equivalents. A total of about 16,000 terms are listed.

5705
133
BIOLOGICAL SYMPOSIA; a series of volumes devoted to current symposia in the field of biology. Lancaster, Pa.: The Jaques Cattell Press, 1940-43. 10 v. illus. 25 cm. Vols. I-III, o.p.; Vols. IV and V, \$3.00; Vols. VI and X, \$3.50; Vol. VII, \$3.25; Vols. VIII and IX, \$2.50. 1320b

Contents (abridged): Volume IV: Population problems in Protozoa. Theoretical and practical aspects of polyploidy in crop plants. Experimental control of development and differentiation. The species problem. Volume V: Comparative biochemistry. Intermediate metabolism of fats. Carbohydrate metabolism. Biochemistry of choline. Volume VI: Symposium on temperature. Symposium on isolating mechanisms. Symposium on the genetic control of embryonic development. Volume VII: Visual mechanisms. Volume VIII: Levels of integration in biological and social systems. Volume IX: Sex hormones—their actions and metabolisms. Hormonal factors in the inversion of sex. Volume X: Frontiers in cytochemistry; the physical and chemical organization of the cytoplasm.

Note: A compilation of papers originally presented at various meetings of American learned societies and scientific associations from 1937 to 1943. The symposia are comprehensive in their specialized fields of biology and the accomplishments of outstanding research workers are represented in the numerous papers. Literature citations follow most of the papers, but there are no discussions.

BRADLEY, JOHN HODGDON, JR.

560
1572
Parade of the living. New York: Coward-McCann, Inc., 1930. 308 p. 22 cm. \$3.00. 1320c

Contents: Children of the sun. A ghost walks. Shapes in the dark. When the last were first. A new thing under the sun. Spawn of necessity. The vegetable version of progress. An anatomy of hell. When the back of the camel broke. Saga of the dinosaurs. Sailors of forgotten seas. Pilgrims of the air. Time brews a change. Hoofprints. Trail of terror. Tales that dead men tell. Hobgoblins of the flesh. Pathways of desire. Old wine in new bottles. Evolution in reverse. Highway to the moon.

Note: An attempt at understanding man's place in the evolution of the earth by a reexamination of the knowledge derived from the geological and biological sciences, written from the viewpoint of the intelligent layman who wishes to obtain a broad picture of the contributions of these special fields.

COLD SPRING HARBOR SYMPOSIA ON QUANTITATIVE BIOLOGY. Cold Spring Harbor, L.I., N.Y.: The

Biological Laboratory, 1933-42. 10 v. illus. 28 cm. Each, \$4.50. 1320d 570.6
c67e

Contents (abridged): Volume I: Surface phenomena. Volume II: Aspects of growth. Volume III: Photochemical reactions. Volume IV: Excitation phenomena. Volume V: Internal secretions. Volume VI: Protein chemistry. Volume VII: Biological oxidations. Volume VIII: Permeability and the nature of cell membranes. Volume IX: Genes and chromosomes: structure and organization. Volume X: The relation of hormones to development.

Note: These ten volumes contain the papers presented at the annual symposia on quantitative biology held at The Biological Laboratory, Cold Spring Harbor, from 1933 to 1942. The aim of the meetings was to bring together a group of workers representing the borderline fields of biology, chemistry, physics, and mathematics, and to give them ample opportunity to discuss at leisure problems related to a specific topic of current interest. The symposia were financed by grants made by the Rockefeller Foundation, and foreign as well as American scientists were in attendance. About 30 papers are presented in each volume in addition to short discussions transcribed from stenographic notes. The majority of the papers are concerned with the presentation of specialized and even controversial aspects of the subject, and assume a familiarity with the background on the part of the reader. There are bibliographies after most of the papers.

DUGGAR, BENJAMIN MINGE, EDITOR

570
D878
Biological effects of radiation; mechanism and measurement of radiation, applications in biology, photochemical reactions, effects of radiant energy on organisms and organic products, with the cooperation of Janet Howell Clark, Kenneth S. Cole, Farrington Daniels [and others]. New York: McGraw-Hill Book Company, Inc., 1936. 2 v. illus. 23 cm. \$12.00. 1320e

Contents (abridged): Volume I: Preface. Photons and electrons. Measurements of X-rays and radium. Statistical treatment of biological problems in irradiation. Photochemistry. The effect of radiation on proteins. Radiation and the vitamins. Effects of X-rays and radium upon regeneration. The physiological effects of radiation upon organ and body systems. Short electric wave radiation in biology. Motor responses to light in the invertebrate animals. The action of radiations on living protoplasm. Volume II: Photo-periodism. Plant growth in continuous illumination. The effects of light intensity upon seed plants. Effect of the visible spectrum upon the germination of seeds and fruits. Some infrared effects on green plants. The effects of radiation on fungi. The effects of radium rays on plants. Growth movements in relation to radiation. Chlorophyll and chlorophyll development in relation to radiation. Effects of radiation on bacteria. Radiation and the study of mutation in animals. Induced chromosomal alterations. Subject index. Alphabetical list of contributors.

Note: A collection of papers by physicists, biologists and other specialists covering the effects of radiant energy on the biological processes of plants and animals. Theoretical aspects of the mechanism and measurement of radiation, photochemical reactions, and the application of such physicochemical advances in biological research are considered in detail. There are extensive bibliographies accompanying each contribution.

EAST, EDWARD MURRAY, EDITOR

570.4
E91b
Biology in human affairs, by Walter V. Bingham, Hugh S. Cumming, Edward M. East (and others). Edited by Edward M. East. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1931. 399 p. 22 cm. \$3.50. 1321

Contents: Biology and human problems, by E. M. East. The prospects of the social sciences, by F. H. Hankins. The renaissance of psychology, by Joseph Jastrow. Educational psychology, by L. M. Terman. Psychology in industry, by W. V. Bingham. Heredity, by E. M. East. The frontiers of medicine, by Morris Fishbein. The outlook of public health work, by H. S. Cumming and A. M. Stimson. Physiology of to-day, by E. K. Marshall, Jr. Zoology and human welfare, by H. M. Parshley. Efforts to increase the food resources, by D. F. Jones. Diet and nutrition, by E. V. McCollum.

Note: Twelve papers by leading scientists. The book is primarily for laymen.

570.4
EA73
ESSAYS IN BIOLOGY in honor of Herbert M. Evans, written by his friends. Berkeley and Los Angeles: University of California Press, 1943. 686 p. illus. 27 cm. \$10.00. 1322

Contents: Herbert M. Evans, biographical data. Bibliography of Herbert McLean Evans, 1904-1942, compiled by Thomas Cowles. Kidney-explantation experiments in relation to arterial hypertension, by F. M. Allen. The influence of the endocrine organs on intestinal absorption, by T. L. Althausen. The impact of the introduction of iron on medical and religious thought, by W. C. Alvarez. The physiology of the salt-treated adrenalectomized animal, by Evelyn Anderson. Contributions to the history of the bird's egg previous to incubation, by J. E. Furkinje, translated by C. W. Bartelmez. The localization of lipids in cytoplasm, by R. R. Kensley. The source of equine gonadotrophin, by H. H. Cole and Harold Ross. On the female testes or ovaries, by Regner De Graaf, translated by G. W. Corner. The biological standardisation of the vitamins, by Katharine H. Howard. The prevention of deafness, by S. J. Crowe. Gene *H* and testosterone in the fowl, by C. H. Danforth. The influence of hormones on the sexual behavior of domestic fowl, by D. E. Davis and L. V. Domm. Pituitary gonadotrophins, by Heinz Kraenkel-Conrat, C. H. Yi and Miriam E. Simpson. Estrogen assay in the human, by S. C. Reed. Functional interrelation of cerebral cortex with basal ganglia and cerebellum, by J. F. Fulton. The solubility of proteins and their separation from mixtures with special reference to serum, by A. A. Green. Gonadotrophic stimulation of the ovaries of the adult rhesus monkey, by C. G. Hartman. The pathologic, clinical and biochemical correlation of tumors of the testis, by Frank Minnan. History of hypophysial diabetes, by B. A. Moussay. The sphygmograph: a double stethoscope for the comparison and lateralization of sound, by W. J. Kerr. On the significance of the forgotten thermodynamic theorems of Carnot, by F. O. Koenig. John Banister and the pulmonary circulation, by S. V. Varkey and Oswald Kemkin. Comparison of the conditions under which estrogens and carcinogenic hydrocarbons are tumorigenic, by Alexander Lipschütz. Lobulo-alveolar mammary growth induced in hypophysectomized rats by injections of ovarian and hypophysial hormones, by W. R. Lyons. Pulmonic interstitial emphysema and its sequelae: an anatomical interpretation, by C. C. Macklin and Madge T. Macklin. Charles Edward Brown-Séquard, by R. H. Major. The undischarged ovarian follicle, by F. H. A. Marshall. Mechanism of the descent of the testicle under the action of sex hormones, by Thales Martins. A hemorrhagic state in the vitamin E-deficient fetus of the rat, by K. E. Mason. Relationships of sodium and potassium to carbohydrate metabolism, by Irvine McQuarrie. Harvey's ideas of embryonic nutrition, by A. W. Meyer. Observations on the pathogenesis of undulant fever, by K. F. Meyer. French medical education as a legacy from the Revolution, by J. M. D. Olmsted. Cytological differences between castration and thyroidectomy basophils in the rat hypophysis, by J. D. Reese, A. A. Koneff, and P. Wainman. Studies on the growth of lymph nodes, thymus, and spleen in the rat, by W. O. Reinhardt. The self-selection of diets, by C. P. Richter. The relationship of the anterior pituitary to the thyroid and the adrenal cortex in the control of carbohydrate metabolism, by Jane A. Russell. Vesalius and Don Carlos, a historical footnote, by J. B. de C. M. Saunders. Impotence as a result of witchcraft, by H. E. Sigerist. The coagulation of blood: quantitative viewpoints, by H. P. Smith. An experimental anatomical study of sensory masking, by I. M. Thompson. The effect of progesterone and lactogenic hormone upon prolongation of pregnancy in the lactating mouse, by Kaisa Turpeinen. Is increased capillary fragility a sign of ascorbic acid subnutrition? By Osmo Turpeinen. The experimental production of pseudohemaphroditism in the monkey, by G. van Wagenen and J. B. Hamilton. The heart in myxedema, by J. J. Wang. Studies on growth of deer antlers: II. Seasonal changes in the male reproductive tract of the Virginia deer (*Odocoileus virginianus borealis*) with a discussion of the factors controlling the antler-gonad periodicity, by G. B. Wimlock. Sex differentiation in heterogenous parabolic twins (*Ambystoma X Triturus*), by Emil Witschi and Harriet M. McCurdy. Ovum, cycle, and menstruation, by Bernhard Zudek.

GOLDSCHMIDT, RICHARD BENEDICT

Ascaris, the biologist's story of life. New York: Prentice-Hall, Inc., 1937. 390 p. illus. 21 cm. \$3.25. 1322a

Contents (abridged): The animal and its surroundings. Form and color. The skin. Body fluids. The nervous system and its finer structure. The ear and the sense of hearing. Sense of equilibrium. The connections within a nervous system. The brain. Acquisition and intake of food. The foodstuffs. Digestive enzymes. Bacteria as helpers. Absorption. Combustion and metabolism. The two sexes. Egg and sperm cells. Sex and the sex hormones. Nucleus and heredity. Cell division and chromosomes. The chromosomes as bearers of hereditary traits. Sex chromosomes and sex determination. Mendelian heredity. Mendelian heredity of more than one trait. Mendelism and selection. Animal and plant breeding. Development. Segmentation and organ-forming stuffs. Nutrition of the embryo. Metamorphosis. Life cycles of parasites. Index.

Note: A general survey of animal biology intended mainly for the layman, presenting the science of life in a form which aims to combine pleasant reading with accurate information. Useful as collateral reading for beginning high school and college students. There are 160 illustrations in the text.

HJORT, JOHAN

The human value of biology. Cambridge, Mass.: Harvard University Press, 1938. 241 p. illus. 20 cm. \$2.50. 1323

Contents: Philosophy and research. The renaissance. The biological philosophy of the renaissance. Analogies of experience. The study of life. The meaning of species. Mental and physiological experience. Biology and the science of population. Biology and social service. Sociology in the light of biology.

Note: This volume is of as much interest to students of sociology and government as it is to biologists. It is based upon the author's work in the marine fisheries and in the whaling industry. His research, which has been concerned with population problems in the sea, has made him conscious of the special problems of living populations as distinguished from controlled phenomena in the laboratory. The first part of his book is devoted to a history of biological science and its relations to current philosophical systems. The author insists that biology should be interpreted by biologists and should free itself from domination by philosophies derived from physics and mathematics. The methods by which it developed as a science seem to him to fit its problems and materials better than those borrowed from the ideal sciences. He adds a strong demand for a wider study of population biology, the principles of which must be basic to any rational sociology, politics, and government.

INTERNATIONAL CONGRESS FOR MICROBIOLOGY, 3d, New York, 1939. Report of proceedings, New York, September 2-9, 1939. Edited for the Executive Committee and the conveners of sections by M. Henry Dawson, general secretary. New York: International Association of Microbiologists, 1940. 883 p. 26 cm. \$5.00. 1323a

Contents (abridged): General sessions lectures: Properties of viruses, by W. M. Stanley. Electrophoresis methods for the isolation and characterisation of biologically important substances, by Arne Tiselius. Bacterial nutrition, by Paul Fildes. Microbial metabolism and its significance to the microbiologist, by A. J. Kluyver. The functions of antibodies in relation to protein structure, by J. R. Marrack. Some problems in the genetics of the fungi, by B. O. Dodge. The efficient parasite, by N. H. Swellengrebel. Die endothelialen Entwicklungsformen der Malaria Parasiten im Lichte der Phylogenie der Hämosporeiden, by Eduard Reichenow. Recent findings and new perspectives in malaria prophylaxis, by A. Missiroli. Abstract of communications: General biology: Variation and taxonomy. Microbiological chemistry and physiology. Viruses and viral diseases. Rickettsiae and rickettsial diseases. Protozoology and parasitology. Fungi and fungous diseases. Medical and veterinary bacteriology. Agricultural and industrial microbiology. Immunology. Index of contributors.

Note: Besides the 11 papers presented in the general sessions lectures and more than 700 abstracts of communications, this record of proceedings offers administrative and organizational details, a report on the permanent International Commission for the organization of congresses, and a list of world members. Discussions follow most of the abstracts.

JAEGER, EDMUND CARROLL

A source-book of biological names and terms. Illustrations by Merle Gish and the author. Springfield, Ill.: Charles C. Thomas, 1944. 256 p. illus. 25 cm. \$3.50. 1323b

Note: An alphabetical list of 12,000 word elements from which scientific biological names and terms have been or can be made. With them are given their Greek, Latin, or other origins and their concise meanings, together with numerous examples of their use in scientific nomenclature. The examples have been selected to show as wide a variety of forms as possible and thus exhibit the many different applications which a combining form may have. All the more commonly known genera and technical terms are included besides those used only by specialists. A large number of prefixes and suffixes are also introduced, thus giving the student a key to the literal meaning of the scientific names and terms used in taxonomy and general biology. There are about 50 line drawings in the text.

LILLIE, FRANK RATTRAY

The Woods Hole Marine Biological Laboratory. Chicago, Ill.: The University of Chicago Press, 1944. 284 p. illus. 23 cm. \$4.00. 1324

Contents: List of illustrations. The geography and early history of Woods Hole. The origin of marine laboratories in Europe and America. The founding and early history of the Marine Biological Laboratory. The material growth of the Marine Biological Laboratory. Policies, organization, and administration. Research at the Marine Biological Laboratory: the first twenty years. Four leaders. Community life. The Woods Hole Oceanographic Institution. Appendixes. Index.

Note: This book, the first complete account of the Laboratory, makes the reader feel something of the enthusiasm that went into its making and continues today in the teaching and research there. Some of the investigations and contributions to scientific knowledge on which the Laboratory's reputation is based are discussed. The descriptions of life in the dormitories, the gay fellowship of the mess hall, the picnics, dances, and tennis games, the friendships and romances of the Woods Hole community make a fascinating story in themselves.

MOLECULAR FILMS, THE CYCLOTRON, & THE NEW BIOLOGY; essays by Hugh Stott Taylor, Ernest O. Lawrence, & Irving Langmuir. New Brunswick, N.J.: Rutgers University Press, 1942. 95 p. illus. 23 cm. (Rutgers University. Publications of the one hundred seventy-fifth anniversary celebration. No. 4) \$1.25. 1325

Contents: Fundamental science from phlogiston to cyclotron, by Hugh Stott Taylor. Molecular films in chemistry and biology, by Irving Langmuir. Nuclear physics and biology, by Ernest O. Lawrence. Commentaries, by Leslie A. Chambers and J. R. Dunning.

Note: Three scientists present historical and contemporary concepts that will help solve some of the most difficult problems in biology. The historical background is provided by Dr. Taylor; the cyclotron, an atom smasher and transmuter, is described by its inventor, Dr. Lawrence; and the surface film technique, which has already proved to be of great value in physics and chemistry, is discussed by Dr. Langmuir.

MOULTON, FOREST RAY, EDITOR

Aerobiology. Publications committee: Elvin C. Stakman, chairman, Edmund B. Lambert, Stuart Mudd, Malcolm H. Soule. Washington, D.C.: American Association for the Advancement of Science, 1942. 289 p. illus. 26 cm. (Publication of the American Association for the Advancement of Science. No. 17) \$4.00. 1326

Note: Papers presented at a meeting of the American Association for the Advancement of Science held in connection with the celebration of the fiftieth anniversary of the University of Chicago. The volume is divided into two sections, "extramural aerobiology" with eight papers, and "intramural aerobiology" with twenty-nine papers. The first section deals with forms of

plant and animal life which are carried aloft by the air and deposited either locally or transported many miles. The papers discuss methods of determining the kinds and numbers of organisms carried by the air, whether they are injurious insects, allergens or pathogens, and the dispersion of species and races. Papers in section two discuss contagion by air-borne infectious materials, the expulsion of secretions from the nose and mouth by sneezing and coughing, the spread of epidemics of children's diseases, and the bactericidal and physiological effects of ultraviolet radiation and aerosols. Each paper includes a bibliography.

NEEDHAM, JAMES GEORGE

About ourselves; a survey of human nature from the zoological viewpoint. With illustrations by William D. Sargent. Lancaster, Pa.: The Jaques Cattell Press, 1941. 276 p. illus. 26 cm. \$3.00. 1327

Contents: Our place in the living world. The primates. Man's remote ancestry. The development of the nervous system. The development of the brain. The development of behavior. Instinct. Learning. Infancy. Nature and nurture in the human species. Population. Social nurture. The components of social behavior. The role of instinct in human affairs. The chief products of the folkways. War in its biological aspects. Government in its biological aspect. Religion in its biological aspects.

Note: In simple, direct language this book explains the evolutionary progress of man's development as an animal—then discusses progressively population, social nurture and behavior, social instincts, folkways, war, government, and religion in their biological aspects.

PENNSYLVANIA UNIVERSITY. BICENTENNIAL CONFERENCE

Cytology, genetics, and evolution. Philadelphia: University of Pennsylvania Press, 1941. 168 p. illus. 23 cm. \$2.00. 1328

Contents: Chromosomes and heredity: The nature of the gene, by M. Demerec. Chromosome structure, by Charles W. Metz. The sex chromosomes, by Franz Schrader. Cytogenetics and evolution: Chromosomal interchanges, by Albert F. Blakeslee. Chromosomal differences between races and species of *Drosophila*, by T. Wobzhansky. Evolution of the germplasm, by Clarence E. McClung. Cytology and genetics of Protozoa: Hereditary status of the rhizopods, by Herbert S. Jennings. Nuclear behavior and reproduction in ciliated Protozoa, by William F. Diller. Inheritance in ciliated Protozoa, by T. M. Sonneborn. Physiology of the nucleus: The physico-chemical properties of the nucleus, by Leon Churney. The chromosomes of the amphibian nucleus, by William R. Duryee. Radiation and the cell nucleus, by Paul S. Henshaw.

Note: A collection of twelve technical papers by outstanding professors of zoology in various American colleges and other research workers. Bibliographies are given at the end of most of the papers.

SEARS, PAUL BIGELOW

This is our world. Norman: University of Oklahoma Press, 1937. 292 p. illus. 20 cm. \$2.50. 1329

Contents: King's X. The living symphony—and the modern dissonance. The pattern on inanimate nature. The theater of life. The atmosphere at work. Water, the great sustainer. Soil, the reservoir of life. The pattern of living nature. What is life? The pageant of life. Plants, life on the move. The living environment. The pattern of life. Succession, the growth of communities. The pattern of human cultures. Man, the human animal. Society, the communities of man. Disease, the failure of adjustment. Technology, slave or master? Whose move next?

Note: A non-technical account of man and his world, intended for the educated but not scientifically trained reader. The author's intent has been to present a picture of the almost forgotten world in which human beings really live, the world we see only in faint distortions in office or apartment. The approach is largely philosophical rather than scientific, and the emphasis is upon the "culture pattern," or immediate environment of the human being, and his reactions to the physical world about him.

WHEELER, WILLIAM MORTON

Essays in philosophical biology. Selected by

G. H. Parker. Cambridge, Mass.: Harvard University Press, 1939. 261 p. illus. 20 cm. \$3.00.

1329a

Contents: The ant-colony as an organism. Jean-Henri Fabre. On instincts. The termitodoxa, or biology and society. The organization of research. The dry-rot of our academic biology. Emergent evolution and the development of societies. Carl Akeley's early work and environment. Present tendencies in biological theory. Hopes in the biological sciences. Some attractions of the field study of ants. Animal societies.

Note: Selected papers of the famous American naturalist, entomologist, and scholar, William Morton Wheeler (1865-1937), late curator of insects at the Harvard Museum of Comparative Zoology and specialist in the study of the growth and social behavior of insects. These essays, chosen from over 450 published works by Professor Wheeler, reveal his deep understanding not only in the field of his specialty but of science, literature, and knowledge in general, at the same time reflecting the unique blend of humor and philosophy which characterized his professional writings.

WOODS, ROBERT S.

The naturalist's lexicon; a list of classical Greek and Latin words used or suitable for use in biological nomenclature. With abridged English-classical supplement. Pasadena, Calif.: Abbey Garden Press, 1944. 282 p. 24 cm. \$2.75.

1329b

Note: A dictionary designed to render more available to naturalists the definitions and correct pronunciations of Greek and Latin words frequently encountered in the literature of their field. Greek words are listed in the Latinized forms in which they normally occur, with the Greek forms given in parentheses. The intention has been to include not only classical words which have been actually employed in the construction of generic and specific names of animals and plants, but all others which might seem applicable to that purpose. The total number of words defined is approximately 15,600. No attempt has been made to cover personal and place-names, and compound words are listed only when they occur in the original languages. The supplement serves the purpose of an index for locating the desired Latin or Greek words in the body of the lexicon.

Textbooks

BARROWS, HENRY ROBBINS

General biology. A textbook for college students. New York: Farrar and Rinehart, Inc., 1935. 624 p. illus. 21 cm. \$3.50.

1330

Contents: Protoplasm and the cell. Plant and animal tissues. The classification of organisms. The plant groups. The animal groups. Nutrition. Responsiveness. Endocrine correlation. Cell division, maturation, and fertilization. Reproduction and development of plants. Reproduction and development of animals. Heredity. The ancestors of existing organisms. The organism and its environment. Appendixes. Index.

Note: A text designed to meet the needs of a full year course in elementary college biology. It is generously illustrated. The appendixes contain sections on the vitamins, a classification of organisms, short biographies of eminent biologists, a subject bibliography of about 250 references, and glossary.

CLARK, CLARENCE C., AND R. H. HALL

This living world. Drawings by Louise Waller Germann. New York: McGraw-Hill Book Company, Inc., 1940. 519 p. illus. 23 cm. \$3.25.

1331

Contents: Changing concepts. Solid surfaces. Life's domain. Living chemicals. The patterns of life. Down to the sea. Size and cunning. The last million years. Comparative features. The human organism. Movements of materials. Life continues. Sensations. Correlating mechanisms. Keeping well. The long road.

Note: This is the second volume of a two-volume series published under the general title *A college course in science*. The companion volume by the same author is entitled *This physical world* (see Index). The present volume is designed to give the student who is not primarily interested in science some under-

standing of his own nature and that of the living world about him. The book deals with the physical conditions of the earth which affect life, the nature of living things, living creatures of the present and geologic past and their relationships to each other, and the structure and functioning of the human body.

HAUPT, ARTHUR WING

Fundamentals of biology. Third edition. New York: McGraw-Hill Book Company, Inc., 1940. 443 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences; A. F. Shull, consulting editor) \$3.00.

1332

Contents: Introduction. Protoplasm and the cell. Unicellular organisms. The lower plant groups. Vegetative organs of seed plants. Reproduction in seed plants. Metabolism and irritability in plants. The lower animal groups. The higher invertebrates. The vertebrates. Chief animal tissues. Metabolism in animals. Coordination in animals. Reproduction and development in animals. Physical basis of heredity. Mendelian laws of heredity. Application of hereditary principles. Adaptation. Saphrophytism, parasitism, and symbiosis. The facts of evolution. The life of the past. The causes of evolution. The evolution of man. Appendix. Index.

Note: This textbook is intended for use in orientation courses in college. Emphasis is placed on the aspects of the subject which are of value in a general rather than a technical education. The present edition contains minor changes throughout. The included material on coordination in animals, vitamins and hormones, and immunity to disease is largely new.

HUNTER, GEORGE WILLIAM, AND OTHERS

Biology: the story of living things, by George W. Hunter, Herbert Eugene Walter, and George William Hunter III. New York: American Book Company, 1937. 680 p. illus. 23 cm. \$3.75.

1333

Note: The ecological approach is emphasized in this course in general biology for colleges. The first third mainly offers opportunities for outdoor contact with living things, the second third provides laboratory work for the winter months, while the final third involves generalizations and conclusions which are possible after the student has acquired a background of his own in field or laboratory. Among the features of this text are a careful balance of botany and zoology, material on conservation policies, anthropology, parasitism, endocrines, advantages of being a vertebrate, unusual angles of man's fight for survival, environment, natural forces, disease, and other related factors. Bibliographies at the end of each chapter except chapter iv.

HUNTER, GEORGE WILLIAM, III

Manual for college biology. New York: American Book Company, 1938. 288 p. illus. 24 cm. \$1.50.

1334

Note: Prepared especially to accompany Hunter, Walter, and Hunter's *Biology: the story of living things* (see above), but also suitable for use with other standard college texts. Constructed in the form of a modified workbook, the outline supplies the objectives, materials, teaching suggestions and directions, with summaries, questions for discussion, and additional projects. Detachable worksheets enable the student to turn in assignments while retaining the book itself. Exercises are arranged in the following groups: natural history, fundamentals of structure and function, organisms illustrating biological principles, the maintenance of the individual, the maintenance of the species, this changing world, and man as a conqueror.

JEAN, FRANK COVERT, AND OTHERS

Man and his biological world, by Frank Covert Jean, Ezra Clarence Harrah, and Fred Louis Herman, with the editorial collaboration of Samuel Ralph Powers. Boston: Ginn and Company, 1944. 631 p. illus. 23 cm. \$3.50.

1335

Contents (abridged): Unit I, Life became associated with protoplasm, which requires a constant supply of food. Unit II, Living organisms must provide for the perpetuation of their own kind. Unit III, Living things must adjust themselves to their

environments. Unit iv, Science has made great discoveries relative to the nature and control of disease. Unit v, Synthesis and decomposition form a cycle in nature. Unit vi, The adaptations of plants and animals have been seriously disturbed by man. Unit vii, Living organisms have evolved in response to a changing environment. Unit viii, Mendel discovered genetic principles which make possible the improvement of all living species. Unit ix, Man's cultural development moved slowly at the outset but has been greatly accelerated by science and invention. Glossary. Index.

Note: This is a companion volume to the authors' *Man and his physical universe*, Boston, 1934 (see Index), and is designed for use as a textbook in special survey courses for freshmen, the emphasis being upon clarity and simplicity of exposition and interest of style. The field of general biology is covered, with short chapters on evolution, heredity, ecology, and ethnology, with more detailed treatment of physiology and disease. A large number of photographs and drawings add interest to the text, and no great amount of prior knowledge of the subject is assumed. There are questions and reference lists at the end of each chapter. The present work is a revision of volume II of the authors' *An introductory course in science for colleges*, Boston: Ginn and Company, 1934, 2 volumes.

MACDOUGALL, MARY STUART, AND ROBERT HEGNER

Biology, the science of life. New York: McGraw-Hill Book Company, Inc., 1943. 963 p. illus. 23 cm. \$4.00. 1336

Contents (abridged): The foundations of biology. Plant biology. Animal biology. General biology—organs, systems, and their functions. The biology of man. Some biological principles and theories. Applied biology—biology and human welfare—conservation. The history of biology. Appendix. Glossary. Index.

Note: A simply written introductory textbook for college courses.

MAVOR, JAMES WATT

General biology. Revised edition. New York: The Macmillan Company, 1941. 897 p. illus. 24 cm. \$4.00. 1337

Contents (abridged): Part I, The living world: The different kinds of plants and animals. The world of life. The cell, the unit of life. The physical basis of life. Part II, Plant life: The thallus plants. Bacteria. Liverworts and mosses. The ferns and their relatives. The alternation of generations and its significance. The gymnosperms. The angiosperms. The root, stem, and leaf of the seed plants. Plant physiology. Evolution in the plant kingdom. The economic importance of plants. Part III, Animal life: Unicellular animals. Saclike animals with ectoderm and endoderm. Flatworms. The round worms. The segmented worms. The arthropods. Additional phyla. Invertebrate evolution. The vertebrates. Part IV, Anatomy and physiology of the frog and man. Part V, Principles: The development of the individual (embryology). The physical basis of heredity. Heredity. The history of life on the earth. The history of the theory of evolution. The evidences for organic evolution. The mechanism of evolution. Early man. Index.

Note: A textbook for beginning college courses. The treatment places emphasis on the scientific method and stresses facts which can be easily verified either in the laboratory or from common experience. In the second edition an ecologic and systematic approach has been substituted in the first three chapters. The chapters on the cell principle and protoplasm have been revised, the chapter on bacteria has been rewritten, and there are a number of other important changes. The companion laboratory manual is the author's *Laboratory exercises in general biology*, New York: The Macmillan Company, 1942, 305 p., paper, \$2.50.

MOMENT, GAIRDNER BOSTWICK

General biology for colleges. New York: D. Appleton-Century Company, Incorporated, 1942. 661 p. illus. 22 cm. (The Century biological series; Robert Hegner, editor) \$4.00. 1338

Contents: Foundations of biology. Universal characteristics of living things. Classification of the living world. Survey of plant architecture and ways of life. Plant life: nutrition. Conduction, support and absorption. Behavior and growth. Reproduction. Relationships of plants and animals. Animal life: protection, sup-

port and motion. Circulation. Nutrition. Respiration. Excretion. Nervous coordination. Sense organs. Hormonal coordination. Reproduction. Development. Heredity. Evolution. The origin of species. History of life on this planet. The animal kingdom. Glossary. Index.

Note: The author of this text had a three-fold purpose: to present the essential facts and principles of the subject; to indicate the experimental evidence upon which the facts and principles rest; and to reveal the human significance of biology. The results of research, dissection, and experimentation are incorporated in the text on a liberal basis. Extensive lists of pertinent books accompany the chapters.

PARSHLEY, HOWARD MADISON

Biology. New York: John Wiley & Sons, Inc., 1940. 232 p. illus. 22 cm. (The sciences; a survey course for colleges, edited by Gerald Wendt) \$2.25. 1339

Contents: The scope of biology. Protoplasm and the cells. Cells and tissues. The classification of animals and plants. Nutrition. Reproduction. Heredity. Behavior and coordination. Ecology. Variation and evolution. Appendix: Highlights of biological history. Bibliography. Glossary. Index.

Note: A brief, inclusive survey of scientific biology, this book presents a comprehensive view of a complex subject. Phases of plant and animal life are used equally to illustrate the facts set forth. Each chapter has a brief bibliography, and a fuller list of books is given in the appendix. Easily understandable by the layman.

PLUNKETT, CHARLES ROBERT

Outlines of modern biology. New York: Henry Holt & Company, 1930. 711 p. illus. 22 cm. \$4.00. 1340

Contents: Part I, Protoplasm: Matter and energy in living things. Structure of living things: the cell and the organism. Chemical composition of protoplasm and its products. Physico-chemical structure of protoplasm. Exchanges between the cell and its environment: diffusion, osmosis, permeability. Chemical reactions in the living organism: catalysis and enzymes. Part II, Nutrition: Nutrition of the animal cell. Nutrition of the green plant cell. Other modes of nutrition. The food cycle. Nutritive mechanisms of multicellular plants. Nutritive mechanisms of multicellular animals. Part III, Response: Stimulation and response. Effectors. Receptors. Coordination. Behavior of organisms. Part IV, Reproduction: Growth and cell division. Reproduction of simple organisms. Reproduction of multicellular animals. Reproduction of multicellular plants. Heredity. The mechanism of development. Part V, Evolution: Variation and selection. Natural selection; the origin of species. Results of evolution. The origin and nature of life. Appendix: Classification of organisms; Chemical symbolism and nomenclature; Classification of chemical compounds. Bibliography. Index.

Note: This comprehensive, elementary text presents biology as a consistent, integrated body of knowledge and theory, aiming not merely to describe but to explain the phenomena with which it deals. A shorter and simpler textbook written on the same plan is the author's *Elements of modern biology*, New York: Henry Holt & Company, 1934, 540 p., \$3.25.

ROGERS, JAMES SPEED, AND OTHERS

Man and the biological world, by J. Speed Rogers, Theodore H. Hubbell, and C. Francis Byers. New York: McGraw-Hill Book Company, Inc., 1942. 607 p. illus. 23 cm. \$3.50. 1340a

Contents (abridged): Part I, The individual organism: The organization of the individual. The framework of the body. The intake of materials and energy. Respiration and excretion. The circulatory system. Coordination and control. The reproductive system. The organization of the individual plant. Roots and their functions. The leaf and its functions. Flowers and fruits. Part II, The continuity of the race: The individual as a member of the race. The reproduction of animals. Reproduction in plants. Mendel's laws of inheritance. Some complications of Mendelian inheritance. Variation as the basis for hereditary distinctions. Part III, The changing generations; the evolution of life in time and space: How the concept of organic evolution developed. Evidences of evolution from living organisms. The evolutionary significance of taxonomy, ecology, and biogeography. The geo-

logical background of evolution. The older records of life. The age of reptiles. The age of mammals. The races of modern man. The mechanism of evolution. Part iv, The economic and social interrelationships of organisms: The physical environment of organisms. The biotic environment of organisms. Appendix. Index.

Note: A textbook for use in college survey courses, intended for students who desire a general cultural knowledge of the subject rather than a professional training. The work stresses an appreciation of the data and reasoning on which biological principles are based. The appendix contains a bibliography of 147 books for browsing, collateral reading, and general reference, plus a glossary of approximately 800 words used in the biological sciences.

SHULL, AARON FRANKLIN, AND OTHERS

Principles of animal biology, by A. Franklin Shull, with the collaboration of George R. Larue and Alexander G. Ruthven. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1941. 417 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences, A. F. Shull, consulting editor) \$3.50. 1341

Contents: The growth of knowledge of biology. Primary organization of living matter. Some elementary chemistry. The functions of protoplasm and cells. Cell division. From one cell to many cells. Basic organization of the metazoa. Physical support and movement. Material for growth and replacement. Respiration and release of energy. Transportation system. Disposal of wastes. Integration of activities. Reproduction. The breeding behavior of animals. Embryonic development. Genetics. Principles of taxonomy. The groups of animals. Animals and their environment. Geographic distribution. Fossil animals. Modification of species.

Note: This textbook for college students provides a body of principles which may be brought under such topics as morphology, physiology, ecology, taxonomy, geographic distribution, paleontology, and evolution. The present revision places greater emphasis upon function, in order to cultivate the student's interest in the workings of the living machine. To this end descriptions of the mechanisms of regulation have been scattered through the physiological parts of the book, and the account of the autonomic nervous system has been extended. The same authors have prepared *Laboratory directions in Principles of animal biology*, fifth edition, New York, McGraw-Hill Book Company, Inc., 1942, 102 p., \$1.00, for use with this textbook.

STANFORD, ERNEST ELWOOD

Man and the living world. New York: The Macmillan Company, 1940. 916 p. illus. 22 cm. \$3.75. 1342

Contents (abridged): Science and living things—introduction. The green plant, manufacturer of foodstuffs and of raw materials for industry. The human body, its structure and functions. The maintenance and health of the body. Foods, nutrition, poisons, and disease: Foods and nutrition. Poisons and their actions. Disease and its treatment. Microorganisms and their relation to human life. A survey of the animal kingdom. A survey of the plant kingdom. Evolution and heredity: The evolution of man. Heredity, genetics and human heredity. Domestication and breeding of plants and animals. The biological resources of the United States and their utilization: The soil. Forest resources of the United States. Conservation of our wild life. Index.

Note: A survey of biological science for college students. It presents interesting but scientifically accurate studies of the chief biological sciences, with emphasis on their importance to civilization. It is intended for use in beginning courses and it does not take the place of texts devoted to a single science.

STRAUSBAUGH, PERRY DANIEL, AND BERNAL R. WEIMER

General biology; a textbook for college students. New York: John Wiley & Sons, Inc., 1938. 555 p. illus. 23 cm. \$3.75. 1342b

Contents: Life. What is its nature? How does it manifest itself in the organism? Metabolism: How is food manufactured? How can food be digested and absorbed? How is food transported and distributed? How is energy released? Respiration. What other waste materials are produced and eliminated? The

cycles in nature. How do plants and animals adjust themselves to their environment? How do living organisms grow and reproduce? How do plants and animals inherit? How are plants and animals named and classified? The animal kingdom: What are invertebrates? What are chordates? The plant kingdom: What are thallophytes and bryophytes? What are pteridophytes and spermatophytes? How are living organisms related to their environment? What is evolution? How is biology related to the other sciences? Index.

Note: This textbook, which is designed for the general college student, the professional student, and the premedical student, is based on living things and gives a fundamental understanding of structure and function. The treatment emphasizes not the machine and its functions, but rather the plant and the animal as working machines, thus enabling the student to form a mental picture of the organism as a whole. A survey of the animal and plant kingdoms is given as a part of the book with the primary objective of creating interest in and appreciation of nature. The publishers have also issued Weimer and Core's *A new manual for the biology laboratory*, New York: John Wiley & Sons, Inc., 1944, 213 p., paper, \$2.00, for use with the present text. Another textbook by the same authors written from the same viewpoint but intended for briefer courses in their *Elements of biology*, New York: John Wiley & Sons, Inc., 1944, 461 p., \$3.25.

WELLHOUSE, WALTER HOUSLEY, AND GEORGE O. HENDRICKSON

College biology. Third edition. New York: F. S. Crofts & Co., 1944. 391 p. illus. 22 cm. \$3.25. 1343

Contents (abridged): Protoplasm, its form and activities as shown in simple organisms. Structure and activities of complex organisms. How organisms are classified. Structure and activities of chordate animals. Development of modern animals. Behavior and heredity. The struggle for existence and adaptation. Index.

Note: An introduction to the principles of biology for the college student and general reader. Emphasis is on the biological basis of human social behavior. The third edition includes a new chapter on conservation. References are given at the end of most chapters.

WILLIAMS, SAMUEL HOWARD

The living world. New York: The Macmillan Company, 1937. 704 p. illus. 22 cm. \$3.60. 1344

Contents: Part I, The biological aspects of living things: The study of nature. The influences of the environment. The colors of animals. The defenses and life span of animals. Sound—its production, perception, and function in the biological world. Part II, The kinds of animals and where they live: The classification of animal habitats. The life in caves. Water life. Its general characters. The life on an ocean beach. The worms. The mollusks. The arthropods: how to distinguish them. Arthropods: the spiders and their relatives. Arthropods: the insects. The fishes of creeks, rivers, brooks, ponds, and lakes. The amphibians. The reptiles. The study of birds. The study of mammals. Part III, Plant study: The study of plants. The study of trees. Part IV, Methods of study: Practical suggestions for study. Appendix. Index.

Note: A textbook for college courses in nature study, ecology, or field biology, or for a cultural course in general biology. The appendixes include a list of exercises and questions, with answers, and a list of biological supply companies.

WOODRUFF, LORANDE LOSS

Foundations of biology. Sixth edition. New York: The Macmillan Company, 1941. 773 p. illus. 22 cm. \$3.75. 1345

Contents: The scope of biology. Cellular organization of life. The physical basis of life. Metabolism of organisms. The multicellular organism. The plant body. Reproduction in plants. Survey of the plant kingdom. The animal body: invertebrate. Survey of the animal kingdom: invertebrates, vertebrates. The animal body: vertebrate. Nutrition. Circulation. Respiration. Excretion. Reproduction. Coordination. Origin of life. The continuity of life. Fertilization. Development. Genetics. Organic adaptation. Origin of species. The human background. Biology and human welfare. Biological history. Bibliography. Glossary. Index.

Note: This college textbook is a general treatment of both plants and animals. In this edition two chapters giving a synoptic view of representatives of the plant and animal kingdoms and about one hundred new figures have been added.

YOUNG, CLARENCE WHITFORD, AND OTHERS

The human organism and the world of life; a survey in biological science, by Clarence W. Young, G. Ledyard Stebbins and Clarence John Hylander. Illustrations by Clarence John Hylander. New York: Harper & Brothers, 1938. 657 p. illus. 22 cm. \$3.50. 1346

Contents: The substance and structure of the human body. Metabolism. Circulation and respiration in the human body. Digestion, assimilation, and excretion in the human body. Maintenance systems in animals. The bodies of plants. The web of life. Communicable diseases. Functional diseases. Human reproduction. Reproduction in plants and animals. The reproductive cycle. The principles of heredity. The fact of evolution. The outcome of evolution. What causes evolution? Human evolution. The response system: the effectors. The nervous system. The sense organs. Internal adjustments. Behavior and mental activity. Growth responses in plants and animals. Movement responses in plants and animals. The development of human behavior. The behavior of the individual. Mental illness and mental health. Conclusion. Appendixes: The classification of organisms. The branches of biological science. Suggested reading. Index.

Note: A survey in biological science, presenting for the freshman college student a picture of the life of man. The text gives him an appreciation of the uses and potentialities of the biological sciences and their significance for social change, and makes him aware of his own nature, considered from a broad biological point of view. The text is the outgrowth of an experiment at Colgate University in the establishment of a survey course in biological science.

Freshwater Biology

EDDY, SAMUEL

A study of fresh-water plankton communities. Urbana, Ill.: University of Illinois Press, 1934. 93 p. illus. 26 cm. (Illinois biological monographs. Vol. xii, no. 4) Paper, \$1.00. 1346a

Contents: Introduction. Areas studied. Methods. Constitution of the plankton in streams: Stable streams. Impounded streams. Young streams. Constitution of the plankton in lakes and ponds: Shallow lakes and perennial ponds. Temporary ponds. Deep glacial lakes. Seasonal communities as indicated by plankton organisms: Stable streams and perennial ponds. Young streams. Temporary ponds. Glacial lakes. Plankton development and related factors: Age of water. Temperature. Velocity and water level. Turbidity. Light. Chemical factors. Biological factors. Interrelations of factors. Geographical distribution and ecological classification. Summary. Check list of names of species. Tables. Bibliography. Index.

Note: A study based on more than 2,000 collections, showing that permanent fresh-water communities exist, reach maturity, and show aspects comparable to terrestrial communities. The existence, rank, behavior, and status of the plankton element is determined.

HUTCHINSON, GEORGE EVELYN

A contribution to the limnology of arid regions, primarily founded on observations made in the Lahontan basin. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1937. 85 p. illus. 24 cm. (Connecticut Academy of Arts and Sciences. Transactions. Vol. 33, p. 47-132) \$1.00. 1346b

Contents: Introduction. Part I, The lakes of the Lahontan basin: General characters of the basin. Pyramid Lake. Winnemucca Lake. Big Soda Lake. Big Washoe Lake. Little Washoe Lake. Carson Lake. Part II, The limnology of arid regions: Distribution of closed lake basins in arid regions. Chemical composition. Biological effects of dilution and concentration. Ratio of substances present. Trophic standard. Productivity. Alkalitrophy. Pans and playa-lakes. Summary. Appendix: Introduction to an elementary theory of the stability of meromictic lakes. Literature cited.

Note: In 1933 the author had an opportunity to study certain of the desert lakes that lie scattered throughout the basin of the extinct Lake Lahontan in the state of Nevada, and in this paper he reports the data obtained in this expedition. These observations also led to a reconsideration of previous work on the lakes of arid regions, which forms the second part of the report. In this discussion he has drawn on the published works of other authors and also on his own experience in the Punjab and arid highlands of Indian Tibet, obtained during the course of the Yale North India Expedition.

LIMNOLOGICAL SOCIETY OF AMERICA

Problems of lake biology. Publication committee: R. E. Coker, chairman, Chancey Juday, Raymond C. Osburn and Paul S. Welsh; Forest Ray Moulton, editor. Washington, D.C.: Published for the American Association for the Advancement of Science by the Science Press, 1939. 142 p. illus. 26 cm. (American Association for the Advancement of Science. Publications. No. 10) \$2.50. 1347

Contents: Some physical and chemical factors in the metabolism of lakes. Utilization of solar energy by aquatic organisms. Distribution of bacteria in lakes. Some relationships of phytoplankton to limnology and aquatic biology. Zooplankton in relation to the metabolism of lakes. Microscopic fauna of the sandy beaches. Rooted aquatic plants and their relation to limnology of fresh-water lakes. Role of bottom fauna in productivity of lakes. Position of fish and other higher animals in the economy of lakes.

Note: These papers were presented at a symposium organized by the Limnological Society of America. While the subject of lake biology includes such related factors as physical size, shape and depth of the lake, source and temperature of its water, hydrostatic pressures at various depths, etc., the discussion here is limited to plant and animal life, both microscopic and macroscopic, which may be found in lakes. Each paper includes an extensive bibliography.

MORGAN, ANN HAVEN

Field book of ponds and streams; an introduction to the life of fresh water. With about 330 illustrations, including 23 plates in color and black and white. New York: G. P. Putnam's Sons, 1930. 448 p. illus. (part col.) 18 cm. (Putnam's nature field books) \$3.50. 1348

Contents: Water plants and animals and how they live. Life in ponds and streams. Collecting and preserving water animals. Simpler plants and animals. Higher plants. Sponges (Porifera). The hydras, fresh water jellyfishes (Cœlenterata). Free-living flatworms (Planaria). Wheel animalcules (Rotifera). Bryozoans (Bryozoa or Polyzoa). Threadworms (Nematoda) and bristleworms (Oligochaeta). Leeches (Hirudinea). Crustaceans (Crustacea). Water-mites (Hydracarina). Aquatic insects (Insecta). Snails and mussels (Mollusca). Lampreys and fishes. Salamanders, frogs, and toads, found in or near water (Amphibia). Turtles and snakes, found in or near water (Reptilia). Bibliography. Glossary. Index.

Note: A pocket-size handbook primarily for the amateur naturalist. Written in non-technical language, the work gives short descriptions of the various common forms of life including habits, habitats, size, breeding habits, plus a drawing or photograph.

MOULTON, FOREST RAY, EDITOR

Problems of lake biology. Publication committee: R. E. Coker, chairman, Chancey Juday, Raymond C. Osburn, Paul S. Welsh. Forest Ray Moulton, editor. Lancaster, Pa.: The Science Press, 1939. 142 p. illus. 26 cm. (American Association for the Advancement of Science. Publication no. 10) \$2.00. 1348a

Contents: Some physical and chemical factors in the metabolism of lakes, by D. S. Rawson. The utilization of solar energy by aquatic organisms, by George L. Clarke. The distribution of

bacteria in lakes, by Arthur T. Henrici. Some relationships of phytoplankton to limnology and aquatic biology, by G. W. Prescott. The zooplankton in relation to the metabolism of lakes, by Willis L. Tressler. The microscopic fauna of the sandy beaches, by Robert W. Pennak. Rooted aquatic plants and their relation to the limnology of fresh-water lakes, by L. R. Wilson. Role of the bottom fauna in the productivity of lakes, by Frank E. Eggleton. The position of fish and other higher animals in the economy of lakes, by F. E. J. Fry.

Note: A collection of nine papers presented at a 1939 symposium on the problems of lake biology. They offer a systematic, comprehensive, and documented survey which is intended as a foundation for future work and an outline of the region to be explored. References are printed at the ends of chapters.

NEEDHAM, JAMES GEORGE, AND PAUL R. NEEDHAM

A guide to the study of fresh-water biology, with special reference to aquatic insects and other invertebrate animals and phyto-plancton. Fourth edition, revised and enlarged. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1938. 88 p. illus. 21 cm. Paper, \$1.00. 1349

Contents: Part I, Aids to recognition of fresh-water organisms: Insects. Crustaceans. Molluscs. Plancton. Other lesser invertebrates. Part II, A program of class work in fresh-water biology: Collecting methods and apparatus. Equipment. Practical exercises: Land-and-water studies. Association studies. Adjustment studies. Economic studies. Demonstrations.

Note: A brief pamphlet designed to facilitate the recognition of fresh-water organisms in the field and in the laboratory. It offers a number of keys, tables, and figures which describe and illustrate the various genera. Vertebrate animals and vascular plants as well as inhabitants of salt and alkaline waters are omitted. The fourth edition contains additions to the list of genera whose immature aquatic stages were formerly unknown. There are 25 practical exercises for use in elementary college classes.

NEEDHAM, JAMES GEORGE, AND J. T. LLOYD

The life of inland waters; an elementary textbook of fresh-water biology for students. Third edition. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1937. 438 p. illus. 21 cm. \$3.00. 1350

Contents: Introduction. The nature of aquatic environment. Types of aquatic environment. Aquatic organisms. Adjustment to conditions of aquatic life. Aquatic societies. Inland water culture. Bibliography. Index.

Note: The subject of this book is fresh-water life: its forms, its conditions, its fitness, its association, and its economic aspects. Particular emphasis is placed upon the ecologic side, while due attention is paid to the educational, sanitary, social, civic, and aesthetic considerations.

A SYMPOSIUM ON HYDROBIOLOGY. Madison, Wis.: The University of Wisconsin Press, 1941. 405 p. illus. 24 cm. \$3.50. 1350a

Contents (abridged): Fragments of the history of hydrobiology, by James G. Needham. Human culture forms as influenced by lakes, by Paul B. Sears. Lakes in relation to terrestrial life patterns, by Aldo Leopold. The economic phases of riparian land use, by George S. Wehrwein. The sediments of inland lakes, by William H. Twenhofel. Sedimentation in artificial lakes, by Stafford C. Hupp. The penetration and scattering of solar and sky radiation in natural water bodies of the Pacific Northwest, by Clinton L. Uterback. Dissolved oxygen in relation to lake types, by Paul S. Welch. The role of nitrogen and phosphorus in biochemical oxygen demand dilution water, by William L. Lea. Aquatic bacteria in relation to the cycle of organic matter in lakes, by Selman A. Waksman. The occurrence of actinomycetes of the genus *Micromonospora* in inland lakes, by Wayne W. Umbreit. Abstracts of papers presented in a volunteer program.

Note: A collection of 32 papers presented at a symposium on hydrobiology held at the University of Wisconsin on September 4-6, 1940, together with the abstracts of 16 additional papers from contributors not attending the conference. There are references following most of the papers, which average 12 pages in length.

WELCH, PAUL SMITH

Limnology. New York: McGraw-Hill Book Company, Inc., 1935. 471 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences, A. F. Shull, consulting editor) \$5.00. 1351

Contents: Preface. Part I, Preliminary considerations: Introduction. Fresh-water environments. Lakes, their origin and diversity. Part II, Nature of fresh-water environments: Physical conditions and related phenomena. Chemical conditions and related phenomena. Part III, Biological relations: Influence of physical conditions. Influence of chemical conditions. Organisms in inland waters. Plankton. Bacteria, other fungi, and the non-plankton algae. Higher aquatic plants and their limnological significance. Nekton. Benthos. Biological productivity. Part IV, Some special types of lentic environments: Ponds. Bog lakes. Part V, Lotic environments: Running waters in general. Bibliography. Index.

Note: A background of elementary physics, chemistry, botany, and zoology is assumed in this text for advanced students. Stress is placed on the chemical, physical, and biological factors which determine the kind and amount of life normally supported by the various kinds of fresh-water units, and discussion is given of various biological phenomena associated with the problems of biological productivity. The classified bibliography is extensive.

Marine Biology

ALLAN HANCOCK PACIFIC EXPEDITIONS

Reports of the collections obtained by Allan Hancock Pacific Expeditions of Velero III off the coast of Mexico, Central America, South America, and Galapagos Islands, 1932-1941. Los Angeles, Calif.: University of Southern California Press, 1936-44. 10 v. illus. 25 cm. (University of Southern California. Allan Hancock Pacific Expeditions. Vol. 1-10) Vol. I, part 1, \$1.00; part 2, \$3.50; part 3, \$3.00. Vol. II, part 1, \$0.25; part 2, \$0.50; part 3, \$0.75; part 4, \$0.50; part 5, \$2.00; part 6, \$0.75; part 7, \$0.50; part 8, \$0.75; part 9, \$1.00; part 10, \$0.50; part 11, \$0.50; part 12, \$2.00; part 13, \$2.50; part 14, \$3.50; part 15, \$1.00; part 16, \$0.50. Vol. III, part 1, \$0.25; part 2, \$0.75; part 3, \$0.75; part 4, \$0.75; part 5, \$1.50; part 6, \$0.75; part 7 and 8, \$2.00; part 9, \$0.50; part 10, \$3.50. Vol. IV, part 1, \$2.50; part 2, \$1.00; part 3, \$1.00; part 4, \$0.50. Vol. V, part 1, \$0.50; part 2, \$1.50; part 3, \$2.00; part 4, \$3.00; part 5, \$0.50; part 6, 7, and 8, \$1.50; part 9, \$1.50. Vol. VI, part 1, \$2.50; part 2, \$1.25; part 3, \$1.50; part 4, \$1.50. Vol. VII, part 1 and 2, \$3.50; part 3, \$2.50; part 4, \$1.50; part 5, \$1.00. Vol. VIII, part 1, \$0.50; part 2, \$1.75; part 3, \$2.50; part 4, \$1.00. Vol. IX, part 1, \$1.00; part 2, \$0.50; part 3, \$0.50; part 4, \$1.50; part 5, \$1.50. Vol. X, part 1, \$3.00. 1351a

Contents: Volume 1: General account of the scientific work of the Velero III in the eastern Pacific, 1931-41, no. 1: Historical introduction, Velero III, personnel, by C. McLean Fraser. No. 2: Geographical and biological associations, by C. McLean Fraser. No. 3: A ten-year list of the Velero III collecting stations, by C. McLean Fraser. Appendix of collecting stations of the Allan Hancock Foundation for the year 1942. Volume 2, no. 1: A new brittle star from the Galapagos Islands, by Fred Ziesenhenn. No. 2: Description of a new blennioid fish of the genus *Acanthemblemaria* from the Pacific coast of Panama, by George S. Myers and Earl D. Reid. No. 3: A new genus of Distomes (*Trema-*

toda) with lymphatic vessels, by Harold W. Manter. No. 4: Parasitic copepods taken during the third Hancock Expedition to the Galapagos Islands, by Charles Branch Wilson. No. 5: Some monogenetic trematodes from the Galapagos Islands and the neighboring Pacific, by Frank G. Meserve. No. 6: Three new trematodes from the Galapagos marine iguana *Amblyrhynchus cristatus*, by Paul T. Gilbert. No. 7: Eight new species of gobioid fishes from the American Pacific coast, by Isaac Ginsburg. No. 8: Land and brackish water Mollusca of Cocos Island, by G. Dallas Hanna and Leo George Hertlein. No. 9: Nematode parasites of the Galapagos land iguana, by Ashton C. Cuckler. No. 10: New species of Nycteribiidae (*Diptera pupipara*) from islands in the Gulf of California, by Hugh Scott. No. 11: A remarkable new genus of sea-urchin (Spatangidae), by Hubert Lyman Clark. No. 12: Marine mollusks from Panama collected by the Allan Hancock Expedition to the Galapagos Islands, 1931-1932, by A. M. Strong and Leo George Hertlein. No. 13: Revision of the nemertean fauna of the Pacific coasts of North, Central, and northern South America, by W. R. Coe. No. 14: Digenetic trematodes of fishes from the Galapagos Islands and the neighboring Pacific, by Harold W. Manter. No. 15: The Acanthocephala collected by the Allan Hancock Pacific Expedition, 1934, by Harley J. Van Cleave. No. 16: The geographical distribution of digenetic trematodes of marine fishes of the tropical American Pacific, by Harold W. Manter. Volume 3, no. 1: Mosses of the G. Allan Hancock Expedition of 1934, collected by Wm. R. Taylor, by William Campbell Steere. No. 2: Myxophyceae of the G. Allan Hancock Expedition of 1934, collected by Wm. R. Taylor, by Francis Drouet. No. 3: Lichens of the G. Allan Hancock Expedition of 1934, collected by Wm. R. Taylor, by Carroll William Dodge. No. 4: Plankton diatoms of the Gulf of California obtained by the G. Allan Hancock Expedition of 1936, by W. E. Allen. No. 5: Plankton diatoms of the Gulf of California obtained by the G. Allan Hancock Expedition of 1937, by E. E. Cupp and W. E. Allen. No. 6: Phycomyces recovered from soil samples collected by W. R. Taylor on the Allan Hancock 1939 Expedition, by F. K. Sparrow, Jr. Nos. 7-8: Field observations on the Algae of the Gulf of California. A review of the genus *Rhodymenia* with descriptions of new species, by Elmer Yale Dawson. No. 9: Some lichens from the American tropics collected by Wm. R. Taylor, by Joyce Hedrick. No. 10: The marine Algae of the Gulf of California, by Elmer Yale Dawson. Volume 4, nos. 1-3: Hydroids of the 1932, 1933, 1934, 1935, 1936, 1937, and 1938 Allan Hancock Pacific Expeditions, by C. McLean Fraser. No. 4: Distribution of the hydroids in the collections of the Allan Hancock Expeditions, by C. McLean Fraser. Volume 5, no. 1: Three new anomuran crabs from the Gulf of California, by Steve A. Glassell. No. 2: New brachyuran crabs from the Galapagos Islands, by John S. Garth. No. 3: Some new species of brachyuran crabs from Mexico and the Central and South American mainland, by John S. Garth. No. 4: The stomatopods of the west coast of America, by Waldo L. Schmitt. No. 5: A new genus and species of barnacle from Ecuador, by I. E. Cornwall. Nos. 6-8: The noctuid moths of the Galapagos Islands from the collections of the Allan Hancock Foundation. The genus *Bulia* Walker in Mexico and Central America. The male genitalia of *Eptopomponia multipunctata* (Druce), by A. Glenn Richards, Jr. No. 9: Pycnogonids from the Allan Hancock Expeditions, by William A. Hilton. Volume 6, no. 1: A report on some arenaceous Foraminifera, by Jerome A. Cushman and Irene McCulloch. No. 2: Some Textulariidae of the Pacific Coast, by C. G. Lalicker and Irene McCulloch. No. 3: Some Nonionidae in the collections of the Allan Hancock Foundation, by Joseph A. Cushman and Irene McCulloch. No. 4: Some Virgulinae in the collections of the Allan Hancock Foundation, by Joseph A. Cushman and Irene McCulloch. Volume 7, no. 1: Polychaetous annelids. Part I-Aphroditidae to Pisionidae, by Olga Hartman. No. 2: New species of polychaetous annelids from southern California, by Olga Hartman. No. 3: Polychaetous annelids. Part II-Chrysopetalidae to Goniadidae, by Olga Hartman. No. 4: Polychaetous annelids. Part III-Spionidae. Some contributions to the biology and life history of Spionidae from California, with keys to species and genera and descriptions of two new forms, by Olga Hartman. No. 5: Polychaetous annelids. Part IV-Pectinariidae, with a review of all species from the western hemisphere, by Olga Hartman. Volume 8, no. 1: A new genus of brittle stars, Amphipontus, by Alex Hill. No. 2: New ophiurans of the Allan Hancock Pacific Expedition, by Fred C. Ziesenhenn. No. 3: The Holothuriodea collected by the Velero III during the years 1932 to 1938, by Elisabeth Deichmann. No. 4: New Eastern Pacific sea stars, by Fred C. Ziesenhenn. Volume 9, no. 1: Report on fishes from Allan Hancock Expeditions in the California Academy of Sciences, by Alvin Seale. No. 2: A new genus and species of pearl fish, family Carapidae, from off Gorgona Island, Colombia, by Earl D. Reid. No. 3: A key to the pipefishes of the Pacific American coasts with descriptions of new genera and species, by Earl Stannard Herald. No. 4: Four new genera and ten new species of eels from the Pacific coast of tropical America, by George S. Myers and Charles B. Wade. No. 5: The Pacific American atherinid fishes of the genera

Eurystole, Nectarges, Coleotropis, and Melanorhinus, by George S. Myers and Charles B. Wade. Volume 10, no. 1: Polychaetous annelids, part V: Eunicea, by Olga Hartman. Polychaetous annelids from California. Polychaetous annelids, part VI: Paraonidae, Magelonidae, Longosomidae, Ctenodrilidae, and Sabellaridae, by Olga Hartman.

Note: This series of monographs and technical papers, which is still in the process of publication at this writing, represents the results of observations and collections made by the members of the Allan Hancock Pacific Expeditions between 1932 and 1941. Each of the papers is concerned mainly with systematic descriptions of the numerous specimens collected. A later series, also published by the University of Southern California, is the *Allan Hancock Atlantic Expedition*, of which report no. 2, *Caribbean marine Algae of the Allan Hancock Expedition*, 1939, by William Randolph Taylor, 1942, 148 p., paper, \$3.50, and report no. 3, *Polychaetous annelids*, by Olga Hartman, 1944, 34 p., paper, \$1.00, have been issued up to December, 1944. Each of the reports listed above may be purchased separately.

BIGELOW, HENRY BRYANT, AND OTHERS

Phytoplankton and planktonic Protozoa of the offshore waters, Gulf of Maine, by Henry B. Bigelow, Lois C. Lillick, and Mary Sears. Philadelphia: The American Philosophical Society, 1940. 88 p. illus. 29 cm. (American Philosophical Society. Transactions. New series, Vol. xxxi, part III) Paper, \$1.75. 1351b

Contents: Part I, Numerical distribution, by Henry B. Bigelow, Lois C. Lillick, and Mary Sears: Introduction. Numerical occurrence of diatoms, peridinians, coccolithophorids, and silicoflagellates. Notes on some factors affecting the abundance of phytoplankton in the Gulf. Summary. Numerical distribution of planktonic Protozoa in the upper 80 meters of water. Summary. Part II, Qualitative composition of the planktonic flora, by Lois C. Lillick: Introduction. The Gulf of Maine proper. Seasonal floral succession in nearby localities. Comparison with other boreal regions. Summary.

Note: Quantitative collections at representative locations in the Gulf of Maine made from the *Atlantis* in June, July, September, October, and December of 1933 and in January, March, April, May, June, July of 1934, and August of 1936 form the chief basis of this report. Information has also been drawn freely from earlier publications both for the offshore waters of the Gulf, for the Bay of Fundy, and for various inshore localities. The paper presents this regional sampling data and evaluates the results. Ninety-six references are listed.

CARNEGIE INSTITUTION OF WASHINGTON. TORTUGAS LABORATORY

Papers from Tortugas Laboratory of Carnegie Institution of Washington. Volume xxxiii. Washington, D.C.: Carnegie Institution of Washington, 1942. 195 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 524) Paper, \$4.00; cloth, \$5.00. 1351c

Contents: Gasterostomes (Trematoda) of Tortugas, Florida, by Harold W. Manter. Swarming of the Atlantic palolo worm, *Leodice fucata* (Ehlers), by Leonard B. Clark and Walter N. Hess. The reactions of the Atlantic palolo, *Leodice fucata*, to light, by Leonard B. Clark and Walter N. Hess. Cytological studies on the structure and division of three new ciliates from the littoral earthworm of Tortugas, by Ralph Wichterman. A new ciliate from a coral of Tortugas and its symbiotic zooxanthellae, by Ralph Wichterman. The ecology of the vegetation and topography of the sand keys of Florida, by John H. Davis, Jr.

Note: At the time of the writing of this note this volume was the latest collective volume published in a series begun in 1908. The series deals with various aspects of marine biology. Many of the volumes are collections of papers by various authorities. A few are monographs by single authors. Several of the latter type are described separately in this work (see Index).

PARR, ALBERT EIDE

Quantitative observations on the pelagic sargassum vegetation of the western North Atlantic, with preliminary discussion of morphology

and relationships. New Haven, Conn.: Bingham Oceanographic Foundation, 1939. 94 p. illus. 23 cm. (Peabody Museum of Natural History, Yale University. Bulletin of the Bingham Oceanographic Collection. Vol. 6, article 7) Paper, \$1.40. 1351d

Contents: Introduction; Method. Vertical dispersion of floating weeds. Taxonomic discussion. Artificial key to the drifting weeds. Ecological classification. Descriptive atlas of eupalagic weeds. *S. natans* series; *S. fluitans* series: preliminary discussion of relationships of eupalagic weeds; description of fertile, attached plant of *S. fluitans*. General quantitative and geographical results: Dominant forms (*S. natans* I and *S. fluitans*)—Caribbean and Cayman Seas, Gulf of Mexico, Sargasso Sea; annual fluctuations, correlated variations in weed distribution. Distribution of less abundant vegetation. Duration and nature of pelagic phase of the floating Sargassa. List of hauls. Summary.

Note: A detailed description with illustrations of the floating weeds in the Sargasso Sea and their quantitative distribution. Conclusions regarding the question of maintenance of the pelagic vegetation are drawn from the quantitative data. This study supersedes those by Krümmel and Winge whose data were not truly representative in a quantitative sense. The bibliography contains 19 sources of direct reference.

RILEY, GORDON ARTHUR

Plankton studies. III. Long Island Sound. New Haven, Conn.: Bingham Oceanographic Foundation, 1941. 93 p. illus. 23 cm. (Peabody Museum of Natural History, Yale University. Bulletin of the Bingham Oceanographic Collection. Vol. 7, article 3) Paper, \$1.35. 1351e

Contents: Methods. Analysis of Long Island Sound surface waters: Temperature and light. Oxygen. Chlorophyll. Nutrients. Zooplankton. Discussion—the relationship of plankton and environment; comparison with other regions. Experimental studies: Descriptive section—Oxygen production and consumption. Consumption and regeneration of nutrients. Chlorophyll production and consumption. Zooplankton. Statistical section—Reactions in the dark bottle (oxygen consumption, chlorophyll consumption, phosphate production). Productive processes (oxygen production, phosphate consumption, chlorophyll production). Application of experimental results to problems of plankton production: Short period changes in biological substances in the Sound waters and their relation to environmental conditions. Short period changes in the Sound waters in relation to concurrent events in experimental bottles. Productivity—definition, gross production, phytoplankton production. Biological efficiency. Comparison with other regions. Summary. References. Table of analysis of Long Island Sound waters.

Note: A study of the interactions of plankton and environment from an analysis of 10 samples of surface water taken at various times during the year to show some variation in Sound waters. Horizontal and vertical variation is not shown, nor is an effort made to identify and list the organisms found. The bibliography includes 32 references.

RILEY, GORDON ARTHUR

Plankton studies. IV. Georges Bank. New Haven, Conn.: Bingham Oceanographic Foundation, 1941. 73 p. illus. 23 cm. (Peabody Museum of Natural History, Yale University. Bulletin of the Bingham Oceanographic Collection. Vol. 7, article 4) Paper, \$1.10. 1351f

Contents (abridged): Introduction. Methods. Descriptive section: Physical basis of the survey. The measurement of phytoplankton. The distribution of plant pigments. The distribution of nitrate and phosphate. Percent saturation of oxygen. Oxygen production and consumption. Discussion: Nutrients. Phytoplankton—the relation of plant pigments to environmental factors; the relation of oxygen production and percent saturation to environmental factors, the seasonal cycle, productivity. Summary. References. Tables.

Note: A study of the quantitative aspects of the phytoplankton of Georges Bank in relation to environmental factors which influence its growth and distribution. This is part of a general survey to obtain needed information about the spawning and larval development of the haddock, and an important part of the

Foundation's "Plankton studies" series. References include 26 books and papers.

YALE UNIVERSITY. PEABODY MUSEUM OF NATURAL HISTORY

Scientific results of the first, second, and third oceanographic expeditions of the "Pawnee," 1925-1927. New Haven, Conn.: Bingham Oceanographic Foundation, 1927-37. 3 v. illus. 23 cm. (Yale University. Peabody Museum of Natural History. Bulletin of the Bingham Oceanographic Collection. Vol. 1-3) Paper, \$12.15 per set. 1351g

Contents: Volume I, Scientific results of the first oceanographic expedition of the "Pawnee," 1925: Fishes, by C. M. Breder, Jr. Crustacea, by Lee Boone. Mollusca, by Lee Boone. Echinodermata, by Lee Boone. Coelenterata, by Lee Boone. Volume II, Scientific results of the second oceanographic expedition of the "Pawnee," 1926: Elasmobranchia, by C. M. Breder, Jr. Nematognathi, Apodes, Isospondyli, Synentognathi, and Thoracostraci, by C. M. Breder, Jr. Heterosomata to Pediculi, by C. M. Breder, Jr. Deepsea fishes, by A. E. Parr. Mollusks, by Lee Boone. Echinoderms, by Lee Boone. Volume III, Scientific results of the third oceanographic expedition of the "Pawnee," 1927: Ceratiodea, by A. E. Parr. Shallow water teleosts, by A. E. Parr. Deepsea eels, exclusive of larval forms, by A. E. Parr. Deepsea Berycomorphi and Percomorphi, by A. E. Parr. Concluding report on fishes, by A. E. Parr.

Note: A collection of 16 papers presenting the results of the three oceanographic expeditions referred to in the title, consisting largely of detailed descriptive catalogues, with numerous figures and other illustrations of the specimens of marine life obtained from the numerous collections made under the auspices of the Bingham Oceanographic Foundation. Each of the papers listed above is available separately.

Microscopy

ALLEN, ROY MORRIS

The microscope. New York: D. Van Nostrand Company, Inc., 1940. 286 p. illus. 23 cm. \$3.00. 1352

Contents: Historical. Optical principles of the microscope. Modern instruments. Illumination. Testing of microscope objectives. Getting the most out of the microscope. Preparation of material for microscopical examination. Bibliography. Glossary. Index.

Note: This book explains in detail the construction and use of the microscope. It assumes no previous experience with a microscope on the part of the reader, and it requires no knowledge of optics or mathematics. The instruments described include the leading types of both American and European manufacturers. The methods and technique of using the instruments and preparing specimens for examination, reflect the author's specialized experience of more than forty years.

ALLEN, ROY MORRIS

Photomicrography. New York: D. Van Nostrand Company, Inc., 1941. 365 p. illus. 23 cm. \$5.50. 1353

Contents: Fundamental principles of photomicrography. Modern photomicrographic equipment. Homemade equipment. The technique of photomicrography. Special photomicrographic processes. Microphotography. Photographic processes, materials and equipment. Illustrative photomicrographs. Index.

Note: This book is designed for beginners and also for persons already familiar with the use of the microscope. To serve the needs of the first group, certain elementary information on the microscope is included, although this instrument is not treated so fully as in the author's *The microscope* described above. Many illustrations of equipment are included.

BURTON, ELI FRANKLIN, AND W. H. KOHL

The electron microscope. Drawings by Dorothy Stone. New York: Reinhold Publishing Corporation, 1942. 233 p. illus. 23 cm. \$3.85. 1354

Contents: Preface. Acknowledgments. Vision. Light microscopes. What is light? Wave motion and wave motion media. The wave theory of light accepted. The electromagnetic theory of light. The electron. The dual theory of light. The dual theory of the electron. The motion of electrons in electrical fields. Electrostatic electron mirrors and lenses. Magnetic lenses. The history of the electron microscope. The electrostatic electron microscope. Applications of the electrostatic electron microscope. The compound electron microscope—magnetic type. What the electron microscope can accomplish. General bibliography. Index.

Note: The first book published in English on this important new tool of science. The senior author built the first successful electron microscope in America. The discussion will be found valuable for its simple and interesting explanation of the principles of optics.

CHAMOT, ÉMILE MONNIN, AND CLYDE WALTER MASON

Handbook of chemical microscopy. Second edition. New York: John Wiley & Sons, Inc., 1938-40. 2 v. illus. 23 cm. Vol. I, \$4.50; Vol. II, \$5.00. 1355

Contents (abridged): Volume I: Principles and uses of microscopes and accessories. The optical system of the microscope. Microscopes for use in chemical laboratories. Illumination of transparent objectives. Illumination of opaque objects. Methods for the preparation of materials for microscopical study. Special methods for interpretation of appearances and observation of physical properties. Ultramicroscopy. Photomicrography and microprojection. The study of doubly refracting materials by means of the polarizing microscope. Chemical crystallography. Determination of refractive indices of liquids and solids. Microscopical measurements. Particle size determination. Quantitative analyses of heterogeneous mixtures. Appendix. Index. Volume II: Chemical methods and inorganic qualitative analysis. Manipulative methods of a general character. Methods of applying reagents in microscopical qualitative analysis. Detection of the elements of Group I of the periodic system. Detection of the elements of Group II, III, IV, V, VI, VII, VIII. Detection of the rare earths. The detection of anions. Special reagents yielding reactions with a number of cations. Qualitative analysis of material of unknown composition. Appendix. Index.

Note: The principles and methods of practical microscopy, written for students and research workers in chemistry, mineralogy, and allied fields. The general arrangement of the material in this edition remains the same as in the earlier one, but several sections have been revised and modernized. In Volume I the material on microscopic measurements has been expanded and new data added on preparation of specimens and illumination methods. A new chapter on particle-size determination is included. Volume II contains additional information on manipulative methods and a new section on the detection of rare earths. Numerous bibliographic footnotes are given in each volume.

CONN, HAROLD JOEL, AND OTHERS

The history of staining, by H. J. Conn, with contributions from Lloyd Arnold, A. F. Blakeslee, R. S. Cunningham, S. I. Kornhauser, F. W. Mallory, and Eugene Unna. Geneva, N. Y.: Biological Stain Commission, 1933. 141 p. illus. 22 cm. \$2.00. 1355a

Contents: The pioneers in staining. Sir John Hill. Joseph von Gerlach. Cochineal dyes. Logwood dyes. Rudolf Heidenhain. Paul Mayer. Anilin dyes in histology. Paul G. Unna. The development* of bacteriological staining methods. Paul Ehrlich. The development of cytological staining. Walther Flemming. The staining of blood and parasitic Protozoa. John Billing. The use of dyes as vital stains. Gustav Mann. Index.

Note: A series of short papers originally published in *Stain technology* during the years 1928-1933, here gathered together in book form. No effort has been made to treat the history of any one field exhaustively, but the entire history of staining is covered and there are references for further study at the end of each chapter. There is a portrait and a short biographical memoir of each of the scientists whose names appear in the Contents.

CORRINGTON, JULIAN DANA

Working with the microscope. New York:

Whittlesey House, McGraw-Hill Book Company, Inc., 1941. 418 p. illus. 23 cm. \$3.50. 1356

Contents: The microscope. Temporary mounts for immediate study. Simple balsam mounts. Procedures in microtechnique. Processed balsam mounts. Cell mounts. Stained whole mounts. Smear preparations. Bacteria. Microscopic skeletons. Grinding hard objects. Sectioning: manual and freezing methods. Sectioning: celloidin method. Sectioning: paraffin method. The newer techniques. Special preparations. Preparation and use of reagents.

Note: A comprehensive, practical manual for those concerned with microscopy and microtechnique, except the advanced professional. Directions cover the operation of the microscope as well as the preparation of all types of slides—whole mounts, smears, sections, and isolations. How to fix, stain, section, and mount materials so they may be examined under the microscope to the best possible advantage, proceeding from the simplest of mounts to the highly technical.

COWDRY, EDMUND VINCENT

Microscopic technique in biology and medicine. Baltimore: The Williams & Wilkins Company, 1943. 206 p. 23 cm. \$4.00. 1357

Note: A laboratory handbook for the technician, supplying definite information about specific matters in a quasi-dictionary form, self-indexing under a single alphabetic order. The reader may turn to a structure in which he is interested, or to an element, or to the name of a particular technique. There are many cross-references and ample documentation to lead to further information if required.

EASTMAN KODAK COMPANY

Photomicrography: an introduction to photomicrography with the microscope. Fourteenth edition. Rochester, N.Y.: Eastman Kodak Company, 1944. 174 p. illus. (part col.) 22 cm. \$2.00. 1358

Contents: Apparatus. General optical principles. Adjustment of the apparatus. Low-power photomicrography. Photomicrography by incident illumination. Image contrast. Photomicrography with ultraviolet light. Photomicrographic materials. Exposure. Processing and printing. Motion photomicrography. Color photomicrography. Selected bibliography. Index.

Note: A simplified discussion of the pertinent fundamentals of optics and photography as well as practical instruction in the technique of photomicrography. No attempt is made to include all of the possible methods, the bibliographic references being provided for those readers who desire more extensive and advanced discussion of the subject. The work is useful to the professional technical worker in the laboratory.

EMIG, WILLIAM HARRISON

Stain technique. Lancaster, Pa.: The Science Press Printing Company, 1941. 75 p. 25 cm. \$1.00. 1358a

Contents: Dyes first used. Chemical and physical properties of dyes. General uses of biological stains. Staining with contrast dyes. Biological stains: Synthetic organic dyes. Natural organic dyestuffs. Inorganic coloring matters. Index.

Note: A loose-leaf manual designed to provide concise instruction in the correct usage of biological stains by introducing the chemistry of color precipitates, the arrangement of stains into a few classes depending on their manner of application, and the outline for staining with combinations of two, three, or four dyes. Includes only those phases of dyeing which assist the student in a practical application of stain technique.

GAGE, SIMON HENRY

The microscope. Seventeenth edition, revised. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1941. 617 p. illus. 23 cm. \$4.00. 1359

Contents: Introduction: Description of the electron microscope. Microscopes and their parts. Bright-field microscopes; lighting, natural and artificial; experiments with microscopes. Dark-field microscopy and its application. The polarizing microscope; some optical principles in microscopy. Micro-spectroscope; pocket spectroscope. Ultra-violet (or fluorescence) microscope; physical analysis. Interpretation of appearances. Magnification and mi-

cometry. Drawing with the microscope and projection apparatus; class demonstrations. Photographing embryos and small animals; photographic enlargements; photographing with the microscope. Cabinet; slips and cover-glasses; mounting, labeling, and storing microscopical specimens. Fixing and preservation of tissues, organs, and entire organisms; infiltrating; imbedding, sectioning, staining, and mounting for the microscope. Serial sectioning of organs, small animals, and embryos; preparation of models. Micro-incinerations and optical appliances for their examination. History of lenses and microscopes. Bibliography. Index.

Note: The primary aim of the work is to guide those unfamiliar with the microscope into an understanding of it, of its limitations and uses. Added attention is given in this seventeenth edition to the electron microscope, polaroid for the micro-polariscope, plastics as mounting media, high pressure mercury lamps for ultra-violet radiation, and bright mercury lines for photographing. Lists of collateral reading follow the chapters in addition to the bibliography on pages 581-594.

GUYER, MICHAEL FREDERIC

Animal micrology; practical exercises in zoological micro technique. With a chapter on drawing by Elizabeth A. (Smith) Bean. Fourth revised edition. Chicago, Ill.: The University of Chicago Press, 1936. 331 p. illus. 22 cm. \$2.50. 1360

Contents: Introductory. Preparation of reagents. General statement of methods. Killing and fixing. Simple section methods. The paraffin method. Straining and mounting. The dioxan method. The colloiding method. The freezing method. Metallic substances for color differentiation. Isolation of histological elements. Tooth, bone, and other hard objects. Infection of blood and lymph vessels. Objects of general interest. Blood. Bacteria. Some embryological methods. Some cytological methods. Reconstruction of objects from sections. Drawing. Appendixes. Index.

Note: This laboratory manual of zoological micro-technique has been widely used in biological laboratories since the publication of the first edition in 1906. In the fourth edition such formulas and methods as have been found superior to older procedures have been added. These include the dioxan technique.

MCCLUNG, CLARENCE ERWIN, EDITOR

Handbook of microscopical technique for workers in animal and plant tissues. With eighty-two illustrations. Second edition, revised and enlarged. New York: P. B. Hoeber, Inc., 1937. 698 p. illus. 24 cm. \$8.00. 1360a

Contents (abridged): Prefaces. Introduction. List of contributors. General methods. Special methods: Methods for the study of fresh material. Bacteriological methods. General botanical microtechnique. Cytological methods. Embryological methods. Histological methods. Protozoological methods. Fixation and fixatives. Stains and staining. Miscellaneous. Index.

Note: A detailed text for both beginner and advanced student. The first section, 40 pages in length, deals with basic methods, and is intended for persons entirely unfamiliar with microscopy. The balance of the book was planned for the experienced investigator and laboratory worker. The separate sections of the book were written independently by a large number of contributors, and were included without change by the editor, with the result that there are contradictions.

MUNOZ, FRANCISCO J., AND HARRY A. CHARIPPER

The microscope and its use. Brooklyn, N.Y.: Chemical Publishing Company, Inc., 1943. 334 p. illus. 22 cm. U.S., \$2.50; foreign countries, \$2.90. 1361

Contents (abridged): The evolution of the microscope. The modern microscope. Illumination. The microtome. The use and care of the microscope. The stereoscopic microscope. The metallurgical microscope. The polarizing microscope. Accessories for use with the microscope. Common errors in the use of the microscope. Glossary. Bibliography. Index. Index of illustrations.

Note: This practical guide explains the use of the microscope not only for the biological sciences but also for metallurgy,

geology, chemistry, ballistics, etc. It covers the care of the instrument, lists some of the common errors in using it, and describes numerous useful accessories.

SHILLABER, CHARLES PATTEN

Photomicrography in theory and practice. New York: John Wiley & Sons, Inc., 1944. 773 p. illus. 22 cm. \$10.00. 1362

Contents (abridged): The microscope—nomenclature and definitions. Lamp houses, lamps, methods of lighting, and photometric units. Light, lenses, images, and objectives. Oculars, illuminating apparatus, slides, cover glasses, and the effect of dirt on the optical system. Optical light filters and the control of glare. Cameras, photosensitive material, formulae and photographic technique. Mounting media, stains, reagents, and solvents; their use and application in photomicrography. Analysis of practical photomicrographical problems. Glossary. Addendum. Index.

Note: A text and reference book which presents the fundamental principles of the microscope, some of the related problems in optics and mechanics, the theoretical implications of the subject, and the practical application in the production of evenly exposed and in-focus negatives. Stress is placed on the necessity for exact and precise alignment of all optical parts and the student is led to judge the accuracy of his own technique independently of all factory or salesroom adjustments, to find the proper balance for his optical equipment, and to select any required lens combination correctly. Mathematical derivation of optical formulas involves only elementary algebra and trigonometry. There are laboratory exercises and test questions at the end of each chapter and numerous illustrations of apparatus and typical photomicrographs.

Evolution

DOBZHANSKY, THEODOSIUS GRIGORIEVICH

Genetics and the origin of species. Second edition, revised. New York: Columbia University Press, 1941. 446 p. illus. 23 cm. (Columbia biological series, edited at Columbia University; general editor, L. C. Dunn. No. xi) \$4.25. 1363

Contents: Organic diversity. Gene mutation. Mutation as a basis for racial and specific differences. Chromosomal changes. Variation in natural populations. Selection. Polyploidy. Isolating mechanisms. Hybrid sterility. Patterns of evolution. Species as natural units. Literature. Index.

Note: A summary and synthesis of the new experimental evidence, and a reassessment of the older theories of biology and genetics, with particular reference to the origin of new variations in animals and plants and the perpetuation of these by heredity. Evolution is seen as a change in the genetic composition of populations, and populations are shown to follow laws which may be derived by mathematical reasoning as extrapolations of the known behavior of the fundamental units of reproduction, the genes and chromosomes. Modern experimental studies are brought to bear on the questions of sterility in species hybrids and of the mechanisms which are effective in keeping species separate, a field in which the author has made some original contributions. The second edition incorporates the advances made in the study of population genetics between 1937 and 1941, and emphasizes the existence of certain unsolved problems in this field, offering some working hypotheses for research workers. The bibliography contains about 1,000 references to the world literature of the subject.

FENTON, CARROLL LANE

Studies of evolution in the genus *Spirifer*. Philadelphia: Wagner Free Institute of Science, 1931. 436 p. illus. 24 cm. (Wagner Free Institute of Science. Publications. Vol. II) Paper, \$6.00. 1363a

Contents: Foreword, by Rudolph Ruedemann. Introduction: The stratigraphy of the Hackberry stage, by C. H. Belanski. Section I, General discussion and conclusions: Objects, materials, methods. Taxonomy and nomenclature. Evolution versus fluctuation. Evolutionary trends. Rejected theories and hypotheses. A physiological theory of racial senescence. Bibliography. Section II,

Descriptions and plates: Introductory discussion. The *Spirifer orestes* Phratry. The *Spirifer hungerfordi* Gens. Plates and explanations.

Note: This study of three restricted groups belonging to the fossil brachiopod genus *Spirifer* is intended partly as taxonomic and partly as evolutionary material, and presents a survey of the ecology of these brachiopods as it can be inferred from the sediments which contain them and the fossil organisms among which they are found. The material is based upon more than 10,000 specimens collected from the Hackberry stage at its typical exposures in Floyd and Cerro Gordo counties in Iowa. The bibliography lists 170 references and there are 50 plates of photographs.

GOLDSCHMIDT, RICHARD BENEDICT

The material basis of evolution. New Haven: Yale University Press, 1940. 436 p. illus. 23 cm. (Yale University. Mrs. Hepsa Ely Silliman memorial lectures, 1939) \$5.00. 1364

Contents (abridged): Introduction. The problem. Microevolution. The micromutations. The single mutations. Local polymorphism. Subspecies and geographic variation. Limiting features of subspecific variation. The species. Macroevolution. Chromosomes and genes. Macroevolution and micromutation. The reaction system. Pattern effect and systemic mutation. Evolution and potentialities of development. Conclusion. Bibliography. Index.

Note: This volume is based on the Silliman lectures delivered at Yale University. It is not an attempt to present an objective review of the present status of the problem of evolution, but rather an inquiry into the types of hereditary differences which might possibly be used in evolution to produce the great differences between groups. Dr. Goldschmidt summarizes a wide range of facts from taxonomy, geographical distribution, morphology, embryology, paleontology, and the new developments of genetics. He holds that the neo-Darwinian theory applies only within the species and is no longer tenable as a general theory of evolution. To account for the larger steps in evolution he offers a theory based on mutational changes in the hereditary materials controlling reaction velocities in development.

GREGORY, WILLIAM KING, AND HENRY C. RAVEN

Studies on the origin and early evolution of paired fins and limbs. New York: New York Academy of Sciences, 1941. 88 p. illus. 23 cm. (New York Academy of Sciences. Annals. Vol. XLII, p. 273-360) Paper, \$1.00. 1365

Contents: Part I, Paired fins and girdles in ostracoderms, placoderms, and other primitive fishes. Paired fins in the crossopterygians. Part II, A new restoration of the skeleton of Eusthenopteron (Pisces Crossopterygii, Devonian, Quebec) with remarks on the origin of the tetrapod stem: Body-form. Vertebral column. Median fins. Girdles and paired fins. Summary of main skeletal characters. The living Eusthenopteron. Derivation and relationships. Part III, On the transformation of pectoral and pelvic paddles of Eusthenopteron type into pentadactylate limbs. Part IV, A new theory of the origin of the pelvis of tetrapods. Discussion and summary. Bibliography.

Note: Four essays, with illustrations and bibliography, intended to throw further light on the problem of how the paired fins and girdles of the earlier vertebrates arose.

JENNINGS, HERBERT SPENCER

Genetic variations in relation to evolution; a critical inquiry into the observed types of inherited variation, in relation to evolutionary change. Princeton: Princeton University Press, 1935. 138 p. illus. 22 cm. \$1.00. 1366

Contents: Introductory. Structure of the germ plasm. Genetic variations resulting from new combinations of genes. Genetic variations resulting from irregularities in the structure and operation of the genetic system. Gene mutations. Are the gene mutations observed in experimental genetics the basic material of progressive evolution? Genetic variation in unicellular organisms, with special relation to the inheritance of environmental effects and reactions. What is the method of operation of the genetic system in bringing about genetic variations under the long-continued action of environmental conditions?

Note: A critical inquiry into the observed types of inherited

variation, in relation to evolutionary change. The book is based on the Vanuxem lectures given at Princeton University in 1934. Suitable for the general reader with scientific interests.

MAYR, ERNST

Systematics and the origin of species from the viewpoint of a zoologist. New York: Columbia University Press, 1942. 334 p. illus. 23 cm. (Columbia biological series, edited at Columbia University; general editor, L. C. Dunn. No. XIII) \$4.00. 1366a

Contents: Introduction, by Theodosius Dobzhansky. The methods and principles of systematics. Taxonomic characters and their variation. Phenomena of geographic variation. Some aspects of geographic variation. The systematic categories and the new species concept. The polytypic species, in nature and in systematics. The species in evolution. Nongeographic speciation. The biology of speciation. The higher categories and evolution. Literature. Index.

Note: A summary of the existing knowledge in the field of systematics or animal taxonomy, and a detailed analysis of the principal concepts upon which taxonomic work is based. The author presents some of the evidence of the systematist on the question of the origin of species, and special emphasis has been placed on the most recent literature and on the field with which the writer is most familiar, the ornithology of the Pacific islands. The chief accomplishment of the book is the correlation of the evidence and points of view of modern systematics with those of other biological disciplines, particularly genetics and ecology. The bibliography contains approximately 350 references to the world literature of zoology, biology, and taxonomy.

MORGAN, THOMAS HUNT

The scientific basis of evolution. Second edition. New York: W. W. Norton & Company, Inc., 1935. 306 p. illus. 22 cm. \$3.75. 1367

Contents: Preface. Introduction. The cellular basis of heredity and evolution. Mendelian inheritance and its relation to the distribution of the genes. Variability and artificial selection. Adaptation and natural selection. Mutation. The theory of sexual selection and hormones. Embryonic development and its relation to evolution. The inheritance of acquired characters. The social evolution of man. Evolution as a response to "the order of nature." Mechanistic and metaphysical interpretations of biology and of evolution. References to literature. Index.

Note: The author repudiates many popular ideas and theories and assembles the known facts about evolution and the process of heredity in an effort to put the subject on a scientific basis.

NEWMAN, HORATIO HACKETT

Evolution, genetics, and eugenics. Third edition. Chicago: The University of Chicago Press, 1932. 620 p. illus. 23 cm. \$3.50. 1367a

Contents (abridged): Part I, Introductory and historical: Introduction. Historical account of the development of the evolution theory. Part II, Evidences of organic evolution: Is organic evolution an established principle? The fundamental postulate underlying all evidences of evolution. Evidences from morphology, by George John Romanes. Evidences from classification. Evidence from blood tests, by W. B. Scott. Evidences from embryology. Critique of the recapitulation theory, by W. B. Scott. Evidences from paleontology. The evolution of man: paleontology, by Richard Swann Lull. Evidences from geographic distribution. Part III, The mechanism of evolution (genetics): Introductory statement. The biological background of genetics. Introduction to the study of persistence factors. Heredity in pure lines. Sex determination and sex differentiation. Mendel's laws of heredity. The factor hypothesis as applied to plants, by John M. and Merle C. Coulter. The factor hypothesis as applied to animals. Review of Mendelism. Sex-linked heredity. Linkage, crossing-over, and the architecture of the germ plasm. Part IV: Eugenics. Part V: Accessory reading. Bibliography. Glossary. Index.

Note: Presents an account of the various phases of evolutionary biology condensed within the scope of one volume of moderate size. Although designed to be used in college courses, it is not strictly a textbook, since it consists largely of excerpts from both the classical evolutionary writers and the modern writers. Unification has been accomplished by the aid of editorial connecting passages and critical remarks. The third edition has an enlarged section on eugenics.

SHULL, AARON FRANKLIN

575
2898
Evolution. New York: McGraw-Hill Book Company, Inc., 1936. 312 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences, A. F. Shull, consulting editor) \$3.00.

1368

Contents: Order in diversity among living things. The similarities indicating kinship. Geographic distribution and the time and place of origin of species. Fossils suggest evolution. The material basis of evolution. Recombination of genes and its bearing on evolution. Primary sources of variation. Genes and characters. Direction of mutation. Shifting gene ratios. Guidance by natural selection. Proposed special forms of natural selection. Decline and revival of natural selection. Isolation in the formation of species. Nonadaptive characters. Geographic races. The evolution of evolution. Emergent evolution. Literature cited. Index.

Note: A review of the field of evolution as it appears to modern biologists, with genetic bearings indicated wherever these may reasonably be assumed. The work is intended as a textbook for beginning college courses in the subject but is not too difficult for the interested layman. The first four chapters are devoted to a review of the evidence of evolution, while the rest of the volume is devoted to specific instances and agencies of plant and animal evolution. The list of references cited constitutes a useful bibliography for the beginning student.

SIMPSON, GEORGE GAYLORD

575
288+
Tempo and mode in evolution. New York: Columbia University Press, 1944. 237 p. illus. 23 cm. (Columbia biological series, L. C. Dunn, general editor. No. xv) \$3.50.

1368a

Contents: Introduction. Rates of evolution. Determinants of evolution. Micro-evolution, macro-evolution, and mega-evolution. Low-rate and high-rate lines. Inertia, trend, and momentum. Organism and environment. Modes of evolution. Works cited. Index.

Note: The topics treated in this monograph by a leading paleontologist do not embrace the whole subject of evolution, but they are fundamental in nature and broad in scope, being among the basic evolutionary phenomena that have tended to be obscured by increasing specialization and which overlap many different fields of research. Data and theories from paleontology, genetics, neozoology, zoogeography, ecology, and several other specialties are synthesized in a general theory which infers not only the course but also the mechanisms of evolution. The word "tempo" is meant to suggest all of the problems of evolutionary rates, their acceleration and deceleration, the conditions of exceptionally slow or rapid evolutions, and phenomena suggestive of inertia and momentum. The group of related problems implied by the word "mode" involves the study of the pattern of evolution to determine how populations became genetically and morphologically differentiated. One hundred and eighty-one American and foreign works are listed in the bibliography.

Genetics

BLANC, RICHARD, AND OTHERS

590.5
CA
v.49
Seven papers in genetics and physiological genetics of *Drosophila melanogaster*. Berkeley, Calif.: University of California Press, 1942. 183 p. illus. 26 cm. (University of California publications in zoology. Vol. 49, nos. 1-7) Paper, \$2.00.

1368b

Contents: Observations in the production of wing scalloping in *Drosophila melanogaster*, by Richard Blanc. Phenocopies and X radiation in *Drosophila melanogaster*, by Richard Blanc and Werner Braun. Effect of X radiation upon bristle pattern in *Drosophila melanogaster*, by Richard Blanc and Claude A. Villee, Jr. Effect of changes in time of development on the phenotype of mutants of *Drosophila melanogaster*, by Werner Braun. Further study of genetic modification of dominance, especially by position effects, by Eldon J. Gardner. Further contribution to the analysis of scalloped wings in *Drosophila melanogaster*, by R. Goldschmidt and Eldon J. Gardner. Study of hereditary homeosis: the mutant tetraltera in *Drosophila melanogaster*, by Claude A. Villee, Jr.

Note: These papers present the results of various experiments, made to study the hereditary constitution of fruit flies, and the effects of X-rays, prolonged development, and differences in feeding and environment, upon their physical development. There are several plates and drawings illustrating physical differences and each paper concludes with a discussion, a summary and a brief bibliography.

BRIDGES, CALVIN BLACKMAN, AND KATHERINE S. BREHME

506
2218
The mutants of *Drosophila melanogaster*. Washington, D.C.: Carnegie Institution of Washington, 1944. 257 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 552) Paper, \$2.50; cloth, \$3.00.

1368c

Contents: Nomenclature and symbolism. Mutants and aberrations listed and described in order of symbols. Descriptions of wild-type stocks. Linkage maps. Appendix: bibliography of Calvin Blackman Bridges, 1913 to 1944.

Note: The compilation of descriptions of the mutants of *Drosophila melanogaster* contained in this volume was made by the senior author from the mutation list which he had maintained and continually revised from 1914 to his death in 1938 and which included the data concerning all significant mutations and reoccurrences found by himself and other workers in the laboratory of Dr. T. H. Morgan at Columbia University and later at California Institute of Technology. He also used the information published in Carnegie Institution of Washington Publications 237 (1916), 278 (1919), 327 (1923), and 421 (1931), and in Morgan's *The genetics of Drosophila*, New York, 1925. After his death a systematic survey of the literature was made by the junior author covering all available publications on the genetics of *Drosophila* through December, 1942. An attempt was made to include such information concerning the mutations as would be of use to investigators, and to document all data as thoroughly as possible. The mutations are listed in one alphabetical order in the present volume. There are three plates of reference maps of various chromosomes.

CASTLE, WILLIAM ERNEST

599.32
2279
The genetics of domestic rabbits; a manual for students of mammalian genetics, and an aid to rabbit breeders and fur farmers. Cambridge: Harvard University Press, 1930. 31 p. illus. 23 cm. \$1.25.

1369

Contents: Introduction. Color mutation. Mutations producing a spotted coat. Structural mutations of the coat. A mutation in color of fat. Linkage. Multiple allelomorphs. Genetic constitution of various breeds. Body size and ear length. Lop-eared rabbits. Silvers. Criteria of true-breeding types and individuals. Conclusion. References. Plates.

Note: For a study of the evolution of breeds, the rabbit is unsurpassed, since the parent species still exists wild and hybridization has not occurred with any second species to complicate the process. This discussion of the rabbit will help the rabbit breeder better to understand the genetic constitution of his animals. At the same time, students of genetics will find the information useful in enabling them to understand what rabbit breeders of this and previous centuries have accomplished and how they have been able to accomplish it.

CASTLE, WILLIAM ERNEST

575.1
22794
Genetics and eugenics; a text-book for students of biology and a reference book for animal and plant breeders. Fourth revised edition. Cambridge, Mass.: Harvard University Press, 1930. 474 p. illus. (part col.) 24 cm. \$3.00.

1369a

Contents (abridged): Part I, The biological basis of genetics: The place of life in the universe. Chromatin, the directing agency of life and the material basis of heredity. Reproduction. Chromosome reduction. Relation of genetics to the evolution theory. Part II, The historical development of genetics: Darwin's theory of evolution and its evidences. Contributions of Lamarck, Weismann, and Spencer. Attempts to classify and measure variation. The mutation theory of De Vries and the modern theory. Discovery and rediscovery of Mendel's law. Part III, The essential

facts of genetics: Mendel's law. Some Mendelian terms and their uses. The unit-characters of rodents, cattle, horses, swine, sheep, dogs, cats, poultry, plants, and insects. Linkage. Artificial production of mutations. Inheritance of size. Genetic changes and the chromosomes. Hybrid vigor or heterosis. Galton's law. Part iv, Eugenics: Human crosses. Physical inheritance. Heredity of general mental ability, insanity, epilepsy, and feeble-mindedness. Possibility and prospects of breeding a better race. Bibliographies. Index.

Note: The fourth edition of this standard work on genetics gives a more extended account of human heredity than contained in former editions, and there is new material on the unit-characters of rodents, polyploidy, parthenogenesis, and the artificial production of mutations. The text has been written with the needs of the interested layman as well as the student in mind. The bibliographies contain about 1800 references to the world literature of the subject and there are 170 illustrations and charts.

CASTLE, WILLIAM ERNEST

575.1 Mammalian genetics. Cambridge, Mass.:
Harvard University Press, 1940. 169 p. illus.
23 cm. \$2.00. 1369b

Contents: Heredity in general. Mendelian inheritance. Modified Mendelian ratios. Linkage, as illustrated in the study of rabbit genes. Known genes of rodents other than the rabbit. Hybridization and hybrid vigor. Self-sterility, bipolar sexuality. Sex differentiation. Sex determination. Sex-linked inheritance in *Drosophila* and in mammals. Inheritance of blood groups in man and rabbit. Dominance; multiple alleles. Lethal genes; balanced lethals. Genes having pathological effects—"sublethal" genes. Maternal inheritance. The inheritance of body size. Variation and selection; quantitative characters; pure lines. Major contribution of fish genetics. The more important gene mutations of domestic mammals. Index.

Note: A summary of the extant knowledge of the genetics of mammals as of 1940. The subject of the heredity of man is not included since it is as yet not subject to laboratory experiment. The reader is assumed to possess a clear knowledge of the anatomy and physiology of mammals and of the cytology of gametogenesis and fertilization. The author emphasizes that the use of the present work as a text requires supplementary laboratory study, for which he has prepared his *Manual for a laboratory course in genetics, to accompany the textbook Mammalian genetics*, Cambridge, Mass.: Harvard University Press, 1940, 36 p., \$0.40. There are references at the end of each chapter except chapter III and 131 photographs and drawings.

CLAUSEN, JENS CHRISTIAN, AND OTHERS

Experimental studies on the nature of species.
I. Effect of varied environments on western
North American plants, by Jens Clausen, David
D. Keck, and William M. Hiesey. Washington,
D.C.: Carnegie Institution of Washington, 1940.
452 p. illus. 25 cm. (Carnegie Institution of
Washington. Publication no. 520) Paper, \$3.50;
cloth, \$4.50. 1369c

Contents: Introduction. *Potentilla glandulosa* and its allies. *Potentilla gracilis* and its allies. *Potentilla drummondii* and *Potentilla breweri*. Studies in the genus *Horkelia*. The genus *Zauschneria*. *Penstemon*, a study in cytotaxonomy and transplanting. The *Achillea millefolium* complex. The genus *Artemisia*. Miscellaneous species. Review of literature. Conclusions. List of chromosome numbers found in plants of the present experiments. New species, subspecies, combinations, and names published in this book. Literature cited. Index.

Note: This volume deals with experiments in transplanting perennial wild plants to different natural environments, with new evidence from the authors' cytological and genetic studies of these materials. The relation between heredity and environment is clarified and a foundation laid for the elucidation of principles relating to the organization of plant species. Intended as the first volume of a projected series on experimental plant studies.

COLIN, EDWARD CECIL

575.1 Elements of genetics; Mendel's law of hered-
ity, with special application to man. Philadel-
phia: The Blakiston Company, 1941. 386 p.
illus. 22 cm. \$3.00. 1370

Contents (abridged): Mendel. Dominance and the law of segregation. Dihybrids: The law of independent assortment. Chromosomes and Mendel's laws. Linkage and crossing-over. The rediscovery of Mendel's work. The factor principle; action and interaction of genes. Heredity in man. Sex determination and differentiation. Sex-linked heredity. Heredity and environment. The gene and mutation. Inbreeding and crossbreeding. Heredity and evolution. Improvement of the human species (eugenics). Glossary. Index.

Note: This textbook for college students presents material for an introductory course in the elements of genetics with emphasis on the applications to man. Based upon long teaching experience, the author's treatment and organization of the subject give a concise and intelligible explanation of the classic laws of Mendel and of the supplementary principles of heredity. There is included a thorough discussion of the economic importance of genetics to plant and animal breeding, the contribution of genetics to human biology, and genetics as an aid to the understanding of evolution. An abundance of illustrations, carefully graded problems at the end of the chapters, and a glossary are included.

FASTEN, NATHAN

Principles of genetics and eugenics; a study of
heredity and variation in plants, animals and
man. Boston: Ginn and Company, 1935. 407 p.
illus. 21 cm. \$3.25. 1371

Contents: The scope and need of genetics. Theories of heredity. Inheritance of acquired characters. The cell. Germ cells and heredity. Sex and its determination. Multiple individuals. Monsters and abnormal individuals. The immortal germ plasm. Mendelian principles of heredity. The gene hypothesis. Sex linkage and nondisjunction. Linkage and crossing over. Variation and species formation. Improvement of organism. Eugenics. Problems of eugenics—physical and physiological traits. Problems of eugenics—mental traits and social factors. Eugenics and human betterment. Bibliography. Glossary. Index.

Note: An elementary course for colleges. The subject is presented against its historical and biological backgrounds. Special attention is given to the factors of heredity, variation, and environment in the production of organisms, and to the roles played by the endocrine glands in normal and abnormal development. Much space is given to human heredity.

GOLDSCHMIDT, RICHARD BENEDICT

Gene and character: iv-viii. Berkeley, Calif.:
University of California Press, 1937. 62 p. illus.
25 cm. (University of California publications in
zoology. Vol. 41, nos. 20-24) Paper, \$0.75 per
set. 1371a

Contents: Part iv: Further data on the development of wing mutants in *Drosophila*. Part v: Further data on the vg dominigenes in *Drosophila melanogaster*. Part vi: Dominigenes and vg allelomorphs, by Richard Goldschmidt and Elizabeth Höner. Part vii: The "nonhereditary" kn effect in *Drosophila*. Part viii: A selection experiment with dominigenes.

Note: Parts I and II of this report of experimental findings in the genetics of *Drosophila* appeared in the *Zeitschrift für induktive Abstammungs- und Vererbungslehre*, Leipzig, 1935, and Part III as "Gen und Aussehencharakter" in *Biologisches Zentralblatt*, Leipzig, 1935. The five short papers here presented summarize the results of the author's own experimental work and that of others in the field. There are short bibliographies at the end of each paper.

GOLDSCHMIDT, RICHARD BENEDICT

Physiological genetics. New York: McGraw-
Hill Book Company, Inc., 1938. 375 p. illus. 23
cm. (McGraw-Hill publications in the zoologi-
cal sciences, A. F. Shull, consulting editor)
\$4.00. 1372

Contents: Introduction. The mutated gene and the potentialities of development. The cytoplasm and the activation of the gene. The nature of the gene. Bibliography. Author index. Subject index.

Note: A notable pioneering work by an internationally known authority. Not only has the author assembled and reviewed the entire body of available data regarding the action of the hereditary material in development, but he has also made an attempt

to organize it into the skeleton of a future science of physiological genetics. Thus the book is an authoritative statement of accomplishment and outlook in the present task of geneticists to discover and amplify a generalized scheme for the physiological operations of the genetic system.

JENNINGS, HERBERT SPENCER

Genetics. New York: W. W. Norton & Company, Inc., 1935. 373 p. illus. 22 cm. \$3.75. 1373

Contents: Preface. Subject matter of genetics. The genetic system. Operation of the genetic system, as exemplified by its relation to sex. Relation of genetic system to characteristics: X-chromosome as type. Relation of genetic system to characteristics: autosomes and Y-chromosomes. Constitution of the chromosomes: genes and their relations to characteristics. The genetic system as a whole. Relation of genes to characteristics. Rules and ratios of inheritance. Relation of characteristics to environment: its interaction with heredity. Effects of mixing diverse organisms. Hybridization. General relations in the operation of the genetic system through the passage of generations. Genetic variations: changes in the structure and operation of the genetic system. Genetic variations: changes in the operation of single genes. Mutations. Index.

Note: A presentation of the fundamental features of genetics for the beginning college student and the intelligent layman. The early chapters cover the detailed facts and relations of the materials of heredity in sharply defined form or as numbered propositions. The later chapters discuss more generally the relations observed in successive generations. Bibliographies at the end of each chapter.

KINSEY, ALFRED CHARLES

The gall wasp genus *Cynips*; a study in the origin of species. Bloomington, Ind.: University of Indiana, 1930. 577 p. illus. 22 cm. (Indiana University studies. Vol. xvi. Waterman Institute for Scientific Research publication no. 42; Contribution from the Department of Zoology, Indiana University, no. 220; Entomological series no. 7) Paper, \$2.50. 1373a

Contents: Part I, The origin of species: The taxonomic method. Basis of present study. The species concept. Mutations. Physiological species. The isolation of species. Hybridization. Phylogenetic history. Part II, Systematic data: Subgenus *Cynips*. Subgenus *Antron*. Subgenus *Besbicus*. Subgenus *Philonix*. Subgenus *Atrusca*. Subgenus *Acraspis*. Appendixes. Index.

Note: An intensive study of 93 species represented by more than 17,000 insects and 54,000 galls, involving an exposition of the nature of species, individual variation, mutation, and hybridization in nature, and the factors affecting the origin of species. The thesis is maintained that species, defined as populations with common heredity, are realities rather than merely mental concepts, and preserve a morphologic and physiologic identity under varying conditions, over vast areas, and through periods of time that may extend beyond the present geologic epoch. About 500 works published prior to 1930 are listed in the bibliography.

KINSEY, ALFRED CHARLES

The origin of higher categories in *Cynips*. Bloomington, Ind.: Indiana University, 1936. 333 p. illus. 25 cm. (Indiana University publications. Science series, no. 4. Contributions from the Department of Zoology no. 242. Entomological series no. 10) Paper, \$2.50. 1373b

Contents: Summary. Part I, Evolutionary discussion: Current concepts of higher categories. Bases of present study. Modern phylogenetics. Terminology of the higher categories. Characters in higher categories of *Cynips*. The nature and origin of higher categories. On the correlation of taxonomy and genetics. Part II, Systematic data: Subgenus *Cynips*. Subgenus *Antron*. Subgenus *Atrusca*. Subgenus *Philonix*. Subgenus *Acraspis*. Appendixes. Index.

Note: This is a systematic study of 70 species of gall wasps new to the genus *Cynips*. New data has also been added on some of the species included in the author's earlier monograph, *The gall wasp genus Cynips*, Bloomington, Ind., 1930, described above. Most of the new species in the present paper are from

Mexico, and the study includes all that is known of the Mexican and Guatemalan representatives of the group. The origin of higher categories in the genus is clarified through the inclusion of these Mexican insects. One hundred and two titles appear in the bibliography.

LINDSEY, ARTHUR WARD

A textbook of genetics. New York: The Macmillan Company, 1932. 354 p. illus. 22 cm. \$3.00. 1374

Contents: History. The rise of genetics. Orientation: the importance of genetics. The biological background: Reproduction of animals. Reproduction of plants. The science of genetics: The materials of genetics. Mendelian inheritance. The chromosome theory. Sex. Linkage. Interaction of factors. Biometry. Genetics and evolution: The source of organic characters. The chromosome complex. Hybridization. Practical applications: Genetics in plant breeding. Animal breeding. Heredity in man. Behavior and heredity. Eugenics. Index.

Note: The book opens with a historical introduction, planned to treat the gradual development of the study of heredity and thereby to place the usual facts concerning Mendel's work in their proper background of earlier experiment. The body of the book treats the facts and theories of genetics. By separating the facts of pure genetics from the matter which bears definitely upon evolution, and incorporating the latter in three chapters where their importance in the evolutionary process is briefly discussed, the author has defined clearly the relationship which exists here. The latter part of the book deals with the practical aspects of genetics in plant and animal breeding, and with human heredity and eugenics. The treatment of eugenics and human heredity has been made as full as is consistent with the usual type of course offered in colleges.

PATTERSON, JOHN THOMAS, AND OTHERS

Studies in the genetics of *Drosophila*. Directed by J. T. Patterson. Austin, Tex.: The University of Texas, 1940. 256 p. illus. 25 cm. (University of Texas. Publication no. 4032) Paper, price ? 1376

Contents: The relation between chiasma formation and disjunction, by Meta Suche Brown. Chiasma formation in the bobbed region of the X-chromosome of *Drosophila melanogaster*, by Meta Suche Brown. Segregation and crossing-over in a 2, 3 translocation in *Drosophila melanogaster*, by Sarah Bedichek Pipkin. Multiple sex-genes in the X-chromosome of *Drosophila melanogaster*, by Sarah Bedichek Pipkin. The effect of artificially produced tetraploid regions of the chromosomes of *Drosophila melanogaster*, by Walter J. Burdette. Effect of temperature on fertility of hyperploid males of *Drosophila melanogaster*, by Russell W. Camley. Experimentally produced aneuploidy involving the autosomes of *Drosophila melanogaster*, by J. T. Patterson and others. The w^{m6} and its derivatives, by A. B. Griffen and Wilson S. Stone. The second arm of chromosome 4 in *Drosophila melanogaster*, by A. B. Griffen and Wilson S. Stone. Changing the structure of the genome in *Drosophila melanogaster*, by A. B. Griffen and Wilson S. Stone. Evolution of the *virilis* group in *Drosophila*, by J. T. Patterson and others. Hybridization in the *mulleri* group of *Drosophila*, by J. T. Patterson and J. F. Crow.

PATTERSON, JOHN THOMAS, AND OTHERS

Studies in the genetics of *Drosophila* II: Gene variation and evolution. Directed by J. T. Patterson. Austin, Tex.: The University of Texas, 1942. 200 p. illus. 25 cm. (University of Texas. Publication no. 4228) Paper, \$1.00. 1376a

Contents: Interspecific hybridization in the genus *Drosophila*, by J. T. Patterson. Heterosis in *Drosophila hydei*, by Wilson S. Stone. Analysis of the repleta group of *Drosophila*, by Linda T. Wharton. Cross fertility and isolating mechanisms in the *Drosophila mulleri* group, by J. F. Crow. Relationships in the *melanica* species group, by A. B. Griffen. Genetic relationships in the *Drosophila funebris* group, by G. B. Mainland. A study of intersexes produced by a dominant mutation in *Drosophila virilis*, blanco stock, by W. W. Newby. The Ix^b factor and sex determination, by Wilson S. Stone. Distribution of the *virilis* group in the United States, by J. T. Patterson. Genetic and cytological analysis of the *virilis* species group, by J. T. Patterson, Wilson S. Stone, and A. B. Griffen.

PATTERSON, JOHN THOMAS, DIRECTOR, AND OTHERS

557.1
2217
Studies in the genetics of *Drosophila* III. The Drosophilidae of the Southwest. Austin, Texas: The University of Texas, 1943. 327 p. illus. 26 cm. (The University of Texas publication no. 4313, April 1, 1943) \$2.50. 1376b

Contents: The Drosophilidae of the Southwest, by J. T. Patterson. Geographical description of species of the genus *Drosophila* in the United States and Mexico, by J. T. Patterson and R. P. Wagner. Analysis of the metaphase and salivary chromosome morphology within the genus *Drosophila*, by Linda T. Wharton. Index to species.

Note: A series of papers based on experimental work carried out over a period of years in the genetics laboratory of the University of Texas. Bibliographies of pertinent literature accompany all of the papers. A fourth collection not available to the writer of this note has been published as follows: *Studies in the genetics of Drosophila* IV, Austin, Texas: The University of Texas, 1944, 223 p., price, ?

SHULL, AARON FRANKLIN

575.1
2217
Heredity. Third edition. New York: McGraw-Hill Book Company, Inc., 1938. 442 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences; A. F. Shull, consulting editor) \$3.50. 1377

Contents: Preface. Extract from preface to first edition. Development of knowledge of genetics. Fundamental structure of organisms. Production of new cells. Origin of new individuals. Development of new individuals. Mechanism of heredity. Simplest phenomena of heredity. Dominance. Backcross and test-cross. Sex-linkage. Multiple alleles. Lethal genetic characters. Two or more independent pairs of genes. Interactions of genes. Modified F_2 ratios. Modification by environment. Chance and heredity. Linkage. Proof that genes are in chromosomes. Non-Mendelian inheritance. Determination and development of sex. Heredity and evolution. Inheritance of human structural characters. Human heredity: physiological characters. Inheritance of mental characters. Practical applications of heredity. Eugenics. The population problem. Race problems. Immigration. Appendix: Quantitative characters. Questions and problems. Literature cited. Index.

Note: A college textbook intended for use in connection with lecture courses for students seeking only a general knowledge of the subject. The emphasis is upon the relation of the laws of heredity to the cultural and social phenomena, and the author seeks to establish the social outlook on a valid foundation of genetics. The third edition represents an almost complete re-writing of the original text in order to include newer illustrations of genetic phenomena, as well as to alter the original method of presentation by placing, for example, the description of chromosome mechanism in advance of the discussion of genetic results, and to include a bibliography.

SINNOTT, EDMUND WARE, AND OTHERS

586
2217
#451
The comparative anatomy of extra-chromosomal types in *Datura stramonium*, by Edmund Ware Sinnott, Helen Houghtaling, and Albert F. Blakeslee. Washington, D. C.: Carnegie Institution of Washington, 1934. 50 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 451) Paper, \$1.50; cloth, \$2.50. 1377a

Contents: Introduction. Constitution of extra-chromosomal types in *Datura*. Anatomy of the diploid. Pedicel structure in the diploid. Material and methods. Anatomy of polyploid types. Pedicel anatomy of heteroploid types. Genetic analysis. Morphogenetic analysis. Anatomy of stem, leaf and root in heteroploid types. Summary. Literature cited.

Note: A comparative study of the various polyploid and heteroploid (primary and secondary) types in *Datura stramonium*, special attention being paid to the anatomy of the floral pedicel because of the ease with which comparable material may thereby be secured. The structures are described and measure-

ments are given for the average areas of the various tissue systems as seen in the transverse section of the pedicel in these mutant types and of the average cross-sectional area and the volumes of the component cells of certain of these tissues. There are 19 plates of photomicrographs and 16 references to the world literature of the subject.

SINNOTT, EDMUND WARE, AND L. C. DUNN

Principles of genetics. Third edition. New York: McGraw-Hill Book Company, Inc., 1939. 408 p. illus. 23 cm. (McGraw-Hill publications in the botanical sciences; E. W. Sinnott, consulting editor) \$3.50. 1378

1932
Contents: The science of genetics. Heredity and variation. Mendel's laws of inheritance. The expression and interaction of factors. Multiple-factor inheritance. The physical basis of inheritance. Linkage and crossing over. Genes and chromosomes. Cytoplasmic inheritance. Determination of sex. Inbreeding and heterosis. The origin of hereditary differences. Genetics and evolution. Genetics and development.

Note: A standard text revised to include recent developments. The fact that one of the authors is a botanist and the other a zoologist makes for a well-balanced, well-rounded treatment. The general plan of presentation is based on the experience of ten years in teaching a course in elementary genetics to college juniors.

SNYDER, LAURENCE HASBROUCK

The principles of heredity. Second edition. Boston, New York: D. C. Heath and Company, 1940. 452 p. illus. (part col.) 23 cm. \$3.50. 1379

575.1
2217
#451
Contents: The study of heredity. Simple Mendelian inheritance. The physical background of Mendelian inheritance. Crosses involving two pairs of factors. Modified two-factor ratios. Probability. Sex-linked factors. Lethal factors. Multiple alleles. Sex-influenced factors. Sex-limited factors. Multiple factors. Linkage. The cytological basis of crossing over. The mapping of chromosomes. Chromosomal aberrations. The proof of the hypothesis that the heredity factors are carried in the chromosomes. Genes and mutations. Giant chromosomes. The genetics of domestic animals. The genetics of cultivated plants. Selection and inbreeding. The statistical treatment of variation. The determination of sex. How genes act. The inheritance of physical and physiological traits in man. The inheritance of mental traits in man. Eugenics. The analysis of human family histories. Index.

Note: Intended for a college semester course for beginning students of heredity or for general readers. In order to arouse and hold the student's interest and stimulate his thoughts along lines of genetic principles and their consequences, the development has been carried out largely on the basis of organisms with which he is familiar and utilizes human characters where feasible as the source of data. Each chapter is followed by problems and brief reference bibliographies of related works. In the second edition material has been brought up to date and a new chapter added which covers recent developments in the study of salivary chromosomes. The number of problems has been increased.

STURTEVANT, ALFRED HENRY, AND T. DOBZHANSKY

586
2217
#451
Contributions to the genetics of certain chromosome anomalies in *Drosophila melanogaster*. Washington, D.C.: Carnegie Institution of Washington, 1931. 81 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 421) Paper, \$1.75; cloth, \$2.25. 1380

Contents: The known and probable inverted sections of the autosomes of *Drosophila melanogaster*, by A. H. Sturtevant. Translocations between the second and third chromosomes of *Drosophila* and their bearing on the *cenothera* problems, by T. Dobzhansky and A. H. Sturtevant. Two new attached-X lines of *Drosophila melanogaster* and further data on the behavior of heterozygous attached-X's, by A. H. Sturtevant.

Note: Papers giving the results and conclusions of genetic and cytological studies on crossover reducers, chromosomal translocations, and attached-X stocks of the fruit fly *Drosophila melanogaster*. Lists of cited literature accompany the papers.

STURTEVANT, ALFRED HENRY, AND G. W. BEADLE

576.1
\$193.1 An introduction to genetics. Philadelphia: W. B. Saunders Company, 1939. 391 p. illus. (part col.) 20 cm. \$3.25. 1381

Contents (abridged): Sex chromosomes. Sex-linkage. Autosomal inheritance. Chromosome maps. Relation of crossing over to meiosis. Intra-chromosomal rearrangements. Lethals. Translocations. Multiple alleles. Mutations. Position effect. Determination and differentiation of sex. Overlapping phenotypes, selection and hybrid vigor. Heterogeneous populations. Polyploidy. Species differences. Extrachromosomal inheritance and maternal influences. Genes and phenotypes. Historical. Appendix. Index.

Note: Designed as a text for college students who have had an introductory course in biology. The chromosomal basis of heredity is introduced at the very beginning. Extensive use is made of studies on salivary gland chromosomes of *Drosophila*. Sex-linkage and ordinary Mendelian heredity are introduced early to facilitate the organization of laboratory work. The treatment is based to a large extent on maize and *Drosophila*, but examples are also given of a wide variety of organisms, including man. At the end of each chapter there are references and also problems which are to be worked out by the student.

WALTER, HERBERT EUGENE

1930 Genetics, an introduction to the study of heredity. Fourth edition. New York: The Macmillan Company, 1938. 412 p. illus. 22 cm. \$3.00. 1382

Contents: Introduction. The observational avenue of approach. The experimental method of approach. The statistical approach. The cytological method of approach. The architecture of the germplasm. The contributions of sex. The developmental method of approach. The application to man. Human conservation. Problems for practice. Appendixes. Bibliography. Index.

Note: A textbook for the beginning student which emphasizes the historical background out of which modern genetics is arising. The treatment is aimed at simplicity and ease of understanding for the uninitiated. A knowledge of elementary college biology is assumed but no mathematics beyond simple algebra is required. The subject of sex-linked inheritance is given detailed study and the importance of the experimental method is indicated. The appendixes contain statistical data for interpreting measurements, method of tracing characters, list of possible human traits, hereditary or acquired, and other related information. The bibliography lists about 180 works of a general nature related to genetics.

WHITE, EDITH GRACE

Principles of genetics. With 179 illustrations. St. Louis: The C. V. Mosby Company, 1940. 352 p. illus. 22 cm. \$2.50. 1383

Contents (abridged): Rise of genetics. Laws of Mendel. Cytologic basis. Sex-linkage. Modified Mendelian ratios. Chromosomes and genes. Linkage. Chromosome maps. Mutations. Induced mutations. Present status of gene. Genetics of sex. Hormone influence. Sex-intergrades. Sex determination. Improving domestic types. Measuring variations. Human inheritance. Genetics of multiple births. Heredity and environment. Eugenics. Appendix. Index.

Note: An introductory textbook for college courses. A select list of references is placed at the end of each chapter, together with review questions, and problems where appropriate.

Biological Physics

RASHEVSKY, NICOLAS

570.2
\$182 Advances and applications of mathematical biology. Chicago: The University of Chicago Press, 1940. 214 p. illus. 19 cm. \$2.00. 1384

Contents: Diffusion phenomena in cells. Coupled reactions: applications to cell respiration. Diffusion forces as a possible

cause of cell division. Cellular growth. Cellular forms and movements. Protoplasmic streaming. Excitation in peripheral nerves. Some remarks on the physicomathematical aspects of central excitation and inhibition. Mathematical biophysics of some simple neurological structures: applications to reaction times. Discrimination of intensities. Mathematical biophysics of psychophysical discrimination. Perception of visual patterns. Index.

Note: Supplement to the author's earlier work, *Mathematical biophysics*, Chicago, 1938 (see below), which dealt mainly with the theoretical foundations of physicomathematical concepts. The present work covers the applications of the mathematical theory to various observations, especially those demonstrable by the approximation method outlined in the appendix of the former book. This method is here applied to cell respiration, cell division, cell growth, cell forms, and cytoplasmic streaming. Theoretical results are compared with quantitative experimental data where available. The approximation method simplifies the mathematics used and makes the book accessible to a wider circle of readers. Suitable as a text for courses in mathematical biophysics and as collateral reading in advanced courses in biology, physiological psychology, and related sciences.

RASHEVSKY, NICOLAS

570.2
\$18m Mathematical biophysics; physicomathematical foundations of biology. Chicago: The University of Chicago Press, 1938. 340 p. illus. 24 cm. \$4.00. 1385

Contents (abridged): Part I, Mathematical biophysics of vegetative cells: The diffusion equation. The spherical cell. Connected chemical reactions. Coupled reactions. Mechanical forces in diffusion fields. Mechanical stability of metabolizing systems. Some biological aspects of the foregoing. Nonlinear diffusion cases. Other factors influencing the stability and spontaneous division of cells. Outline of a physicomathematical theory of organic form. Part II, Mathematical biophysics of excitation and conduction in peripheral nerves: General considerations on irritability. Blair's theory of excitation. Rashevsky's theory of excitation and inhibition. Hill's theory of excitation. Part III, Mathematical biophysics of the central nervous system: General considerations on central excitation and inhibition. Hysteresis phenomena in physicochemical systems. A neurologically interesting case of hysteresis. Conditioned reflexes. Discrimination of relations. The Gestalt problem. Delayed reflexes and application to the theory of error elimination. Appendix. Index.

Note: A monograph presenting the results of the author's researches in the field of mathematical biology, which stands in the same relation to experimental biology as mathematical physics stands to experimental physics, and is based on the physical interpretations of biological phenomena. The work presents a mathematical theory of metabolizing systems related to the distribution of concentrations in diffusion fields and the mechanical forces produced by such fields. This leads to physicomathematical theories of cell respiration, cell division, forms of multicellular organisms, and related biological phenomena. The second part of the book presents a study of cell irritability, with a mathematical theory evolved for excitation and conduction in nerves. Finally, the author develops a physicomathematical theory of the central nervous system, including a large number of psychological and neurological phenomena. There are references at the end of each chapter.

STUHLMAN, OTTO

612.614
\$192.1 An introduction to biophysics. New York: John Wiley & Sons, Inc., 1943. 375 p. illus. 23 cm. \$4.00. 1386

Contents: Biophysically active X-rays. Applied radioactivity. Biophysical characteristics of the eye. Emission and absorption of biophysically active light. The structure and properties of surfaces and membranes. The biophysical problem of nerve conduction. Auditory biophysics. The compound microscope; the electron microscope. Physical constants. Problems. Name index. Subject index.

Note: An introduction to the applications of physical methods and equipment to the solution of biological and medical problems. The discussions include a fundamental cross-section of physical methods and physical principles applied to biology, the use of isotopes as tracers in physiological investigations, the application of ultraviolet light to physiological problems, the use of microscopy with particular regard to electron microscopes, physiological acoustics, classical physiological optics, important biophysical instruments, and recent developments and applications in radiology.

Ecology

CARPENTER, JOHN RICHARD, COMPILER

581.15
c22c
An ecological glossary. Norman: University of Oklahoma Press, 1938. 306 p. illus. 20 cm. \$4.00. 1387

Contents: Preface. The development of ecological nomenclature. A—Z. Literature cited in glossary. Historical bibliography. Appendix: Comparison of plant-sociological terminology, terms by DuRietz '30. Comparison of sociological units, after DuRietz '30. Community classification, after Shelford '32. Subdivisions of the biotic formation, after Carpenter. Biotic areas in North America, after Shelford '26. Life zones and biotic communities in America north of the Amazon, after Shelford, Jones, and Goldberg '26. Life zones of North America, after Merriam, *et al.*, 1910. Zoological regions of the world, after Wallace. Vegetation regions of the world, after Grisebach '72. Mammalian geographic realms and regions, after Lydekker '96. Faunistic realms of the world, after F. Dahl '23. An example of seasonal composition and appropriate nomenclature, after Carpenter '35. The active processes of erosion, after Malott '28.

Note: Defines nearly 3,000 terms that occur in ecological literature. Includes variant meanings and gives references to papers in which definitions and concepts are discussed in detail. The appendix includes many ecological maps.

CLEMENTS, FREDERIC EDWARD, AND VICTOR E. SHELFORD

✓ Bio-ecology. New York: John Wiley & Sons, Inc., 1939. 425 p. illus. 23 cm. \$4.50. 1388

Contents: Nature and relations of bio-ecology. Community functions; the dynamics of the biotic formation. Reaction: the influence of community on habitat. Coaction: the interrelations of organisms. Aggregation, competition and cycles. Migration. Climax and sere. The North American grassland: Stipa-Antilocapra biotic formation (biome). Aquatic climax communities. Marine biotic communities. Appendix. Index.

Note: A highly technical survey of the general field of interrelationships of combined animal and plant communities, valuable not only as a manual for the teacher and student of biology, but as a reference for the ecologist and biologist. The book shows how, in practice, bio-ecological data deal with the study of biotic communities or microcosms, or the science of community populations of plants and animals. Bio-ecology deals also with the cause-and-effect relations between habitat on the one hand and the organism and community on the other. An extensive bibliography is included.

DICE, LEE RAYMOND

✓ The biotic provinces of North America. Ann Arbor, Mich.: University of Michigan Press, 1943. 78 p. illus. 26 cm. \$1.75. 1388a

Contents: Introduction. Descriptions of the biotic provinces: Eskimoan. Hudsonian. Canadian. Carolinian. Austroriparian. Illinoisian. Texan. Saskatchewanian. Kansan. Comanchian. Aleutian. Sitkan. Oregonian. Montanian. Coloradan. Navahonian. Palusian. Artemisian. Californian. Sanlucian. Sonoran. Mohavian. Sinaloan. Apachian. Durangan. Chihuahuan. Tamaulipan. Potosian. Veracruzian. Literature cited. Index.

Note: A new classification of the natural biological areas of North America from the Arctic zone to middle Mexico, by a biologist whose field trips have brought him into almost all of them. The classification is based primarily on vegetation, but takes account also of climate, physiography, and animal life. The ecological point of view is maintained throughout, with emphasis on the relationship between the plants and animals and their environment. One hundred and fifty-two titles are listed in the bibliography.

JUST, THEODOR, EDITOR

Plant and animal communities, comprising the proceedings of the Conference on Plant and Animal Communities held at the Biological Laboratory, Cold Spring Harbor, Long Island, N.Y., from August 29th to September 2nd, 1938. Notre Dame, Ind.: University of Notre Dame Press, 1939. 255 p. illus. 23 cm. \$2.50. 1388b

Contents: Plant associations on land, by Henry S. Conrad. Littoral marine communities, by G. E. MacGinitie. Fresh-water communities, by Frank E. Eggleton. The biome, by J. Richard Carpenter. The individualistic concept of the plant association, by H. A. Gleason. The unistratal concept of plant communities (the unions), by Theodor Lippmaa. The climax and its complexities, by Stanley A. Cain. Social coordination and the super-organism, by Alfred E. Emerson. On the analysis of social organization among vertebrates, with special reference to birds, by N. Tinbergen. Analytical population studies in relation to general ecology, by Thomas Park.

Note: A cross-section of current concepts with suggestions for future work is the general aim of these ten papers. The book tries to bridge the gaps existing particularly between cis- and trans-atlantic ecology and between the botanical and zoological aspects. Bibliographies and stenographic records of discussions follow each chapter.

SEARS, PAUL BIGELOW

Life and environment; the interrelations of living things. New York: Teachers College, Columbia University, 1939. 175 p. illus. 22 cm. (The science in modern living series; basic science material for use in modern education, S. R. Powers, editor.) \$1.85. 1388c

Contents: Life and environment inseparable. A phase of advancing human culture. The main divisions of environment. Human society as environment. The community, a moving equilibrium. The working organism in the community. The nature of ecology. Ecology in the service of society. Appendix.

Note: The first of a projected series of studies of basic scientific materials bearing upon important situations and problems of modern living. The present work is an interpretation of situations and problems arising out of the interrelations between human society and its living and nonliving environment, including plants, animals, soil, air, rain, heat, cold, fire, wind. The author is a recognized authority in the field of animal ecology and a pioneer in the application of ecological methods to the study of man and his social organization.

WILLIAMS, ARTHUR BALDWIN

The composition and dynamics of a beech-maple climax community. Cleveland, O.: Cleveland Museum of Natural History, 1936. 92 p. illus. 23 cm. (Cleveland Museum of Natural History. Scientific publications. Vol. vi) Paper, \$0.50. 1388d

Contents: Introduction. Description of area studied. Climate. History of the area studied. Character of the forest. Character of animal population. Aspect. Plants and animals. Summary and conclusions. Literature cited.

Note: The approach in this study is to the biotic community as a whole. The work seeks to determine both its plant and animal content, the number and abundance of species, their relations to each other and to the community as a whole, seasonal and yearly variations in numbers and activities, territorial relations, food relations, the stage of successions represented, changes now going on, environmental conditions including soil and climate, and the effect of these upon the community. Special emphasis is laid upon the vertebrates and the major plant forms.

Cytology

COWDRY, EDMUND VINCENT, EDITOR

Special cytology; the form and functions of the cell in health and disease; a textbook for students of biology and medicine. Second edition. 757 illustrations. New York: P. B. Hoeber, Inc., 1932. 3 v. illus. (part col.) 24 cm. \$30.00. 1389

Contents: Volume I, Foreword, by Alexis Carrel. Skin, by E. V. Cowdry. Hair, by Mildred Trotter. Teeth, by Isaac Schour. Mucous membrane of the nasal cavity and the paranasal sinuses, by J. Parsons Schaeffer. Epithelium of the lower respira-

tory tract, by William Snow Miller. Salivary glands, by D. L. Stormont. Gastric glands, by R. R. Bensley. Intestinal epithelium, by Charles Clifford Macklin and Madge Thurlow Macklin. Cytology of the liver and its functional significance, by Frank C. Mann. Cytology of the pancreas, by Eugene L. Opie. Ciliated epithelium, by Alfred M. Lucas. Capillaries, by August Krogh and Bjovulf Vimtrup. Bone marrow, by Florence R. Sabin. Spleen, by Preston Kyes. Volume II, Erythrocyte, by E. B. Krumhaar. Lymphocytes and plasma cells, by Alexander A. Maximow. Myeloblast, by Hal Downey. Granular leucocytes, by C. H. Bunting. Macrophages or histiocytes, by Alexander A. Maximow. Structure of the hypophysis cerebri of man and of the common laboratory mammals, by Percival Bailey. Pineal body, by Percival Bailey. Thyroid, parathyroids and thymus, by David Marine. Suprarenal bodies, by J. M. Rogoff. Renal tubules, by G. Carl Huber. Cartilage and bone, by Arthur W. Ham. Synovial membrane of joints and bursae, by J. Albert Key. Striated and smooth muscle, by Edward B. Meigs. Cardiac muscle, by A. E. Cohn. Specialized systems of the heart, by T. Wingate Todd. Volume III, Retina, choroid and sclera, by Leslie Brainerd Arey. Cornea and the lens, by Ida Mann. Cytology of the internal ear, by George E. Shambaugh. Architecture of the nerve cell as revealed by microdissection, by George S. deRényi. General relation of histological character to function in mammalian neurons, by E. F. Malone. Sympathetic nerve cells, by Albert Kuntz. Neuroglia and microglia. The interstitial tissue of the central nervous system, by Wilder Penfield. Cytology of the cerebrospinal pathway, by G. B. Wislocki. Human uterine gland cells, by G. W. Bartelmez and C. M. Bensley. Cytology of the ovum, ovary and Fallopian tube, by G. W. Corner. Cellular changes in the fluid of the mammalian vagina, by Charles R. Stockard. Cytology of the mammary gland, by Leo Loeb. Interstitial cells of the testis, by A. T. Rasmussen. Male germ cells, by Charles W. Metz. Seminal vesicles, prostate and bulbourethral glands, by Charles Clifford Macklin and Madge Thurlow Macklin.

Note: The purpose of this work is to present a detailed statement of the types of cells which make up the body and which serve different functions: the nerve cells, gland cells, blood cells, and others; and to give as complete a picture as practicable of cellular reactions in both health and disease. The book is to be regarded as supplementary to an earlier volume called *General cytology*, Chicago, 1924, in which the fundamental principles of architecture and activity which cells of different kinds possess in common were discussed. In this second edition the sections have undergone varying degrees of revision. Subjects not previously included have been covered by the following new contributors: G. W. Bartelmez, C. M. Bensley, Arthur W. Ham, August Krogh, Preston Kyes, Alfred M. Lucas, Ida Mann, George S. deRényi, J. M. Rogoff, Florence R. Sabin, Isaac Schour, Mildred Trotter, Bjovulf Vimtrup.

GERARD, RALPH WALDO

Unresting cells. New York: Harper & Brothers, 1940. 439 p. illus. 22 cm. \$3.75. 1390

Contents: Out of the nowhere. Odyssey of an amoeba. Cell substances. Architecture in miniature. Master craftsmen. Molecular traffic. Fuel for the lamp of life. Action and its consequences. Through the microscope. Reproduction among molecules. Oaks from acorns. From the general to the particular. Inherited molecules. Organism. Index.

Note: In simple, non-technical language this book discusses with scientific accuracy the living organism and its activities in terms of the physical structures and chemical processes which underlie them. The prologue considers the origin of life and the epilogue considers the integrated organism, the basic likenesses between plant and animal, and their significance for human society. The intervening chapters present the life of a typical cell, the nature of protoplasm, enzymes, energy, metabolism, cell structure, growth and reproduction, differentiation, heredity, and related topics.

HOLLAENDER, ALEXANDER, AND WALTER D. CLAUS

An experimental study of the problem of mitogenetic radiation. A report on work conducted in the Laboratory of Plant Physiology, Department of Botany, University of Wisconsin, September, 1934 to June 30, 1936. Washington, D.C.: Published by the National Research Council of the National Academy of Sciences,

1937. 96 p. 25 cm. (Bulletin of the National Research Council. No. 100) Paper, \$1.00. 1391

Contents (abridged): Introduction. Experimental work: Biological detectors. Physical detectors. Approach to the mitogenetic radiation problem by the study of the effects of ultraviolet radiation emitted by artificial light sources. Discussion and conclusions. Bibliography.

Note: A report of an investigation attempting to prove the existence of the so-called "mitogenetic rays" defined as ultraviolet radiation of the wave lengths 1900 to 2500 Å, of an intensity of 10 to 1000 quanta per square centimeter per second, emitted by biological materials in certain stages of development, and also by chemical reactions. The phenomena as described in this paper were first studied by biological methods, using yeast and other bacteria as detectors, and later by physical means, including chemical, photographic, and photoelectric methods. Although the problem of determining the reliability of the evidence regarding the existence of mitogenetic radiation was approached from an affirmative point of view, the authors' work demonstrates that attempts to detect, by biological and physical means, ultraviolet radiation by biological materials, have yielded only negative results.

JUST, ERNEST EVERETT

The biology of the cell surface. Philadelphia: The Blakiston Co., 1939. 392 p. illus. (part col.) 23 cm. \$5.50. 1392

Contents: Introduction. Life and experiment. The protoplasmic system. The ectoplasm. General properties of the ectoplasm. Water. The fertilization—process—reaction. Parthenogenesis. Cell-division. Cleavage and differentiation. Chromosomes and ectoplasm. Ectoplasm and evolution. Conclusion. Bibliography. Index of authors and subjects.

Note: This book investigates the role of the cytoplasm and especially its cortical region in the fundamental life processes of the cell. Throughout the whole treatment, the principle that the cell is the biological unit is kept in mind. In particular, structure and function of the ectoplasm are emphasized. Part I discusses principles which concern the fundamental organization of any living thing. Part II discusses the problems that refer directly to animal eggs in their earliest stages of development. Part III has to do mainly with theoretical discussions.

SCHRADER, FRANZ

Mitosis, the movements of chromosomes in cell division. New York: Columbia University Press, 1944. 110 p. illus. 23 cm. (Columbia biological series, edited at Columbia University. No. xiv) \$2.00. 1392a

Contents: Introduction. Structure: Living cells. Fixed cells. The actuality of structural elements. Nature and origin of the spindle apparatus. Hypotheses of mitosis: Contraction—pulling. Expansion—pushing. Variations—contraction and expansion. Viscosity and hydration. Electrostatics. Diffusion. Streaming—currents. Hydrodynamics. Tactoids. Chromosome autonomy. Related problems. Conclusion. Literature. Index.

Note: In this book the author surveys critically the various modern hypotheses offered to account for mitotic behavior of the chromosomes. He deals chiefly with the researches of the last twenty years, and discusses older work only when it is necessary as a background.

SHARP, LESTER WHYLAND

Fundamentals of cytology. New York: McGraw-Hill Book Company, Inc., 1943. 270 p. illus. 23 cm. (McGraw-Hill publications in the botanical sciences; E. W. Sinnott, consulting editor) \$3.00. 1393

Contents: The position of cytology in biological science. The organism and the cell. The structural components of protoplasts. Protoplasm. Division of the protoplast. The cell walls of plants. The chromosomes. Meiosis. Cytology of reproduction in animals. Cytology of reproduction in angiosperms. Cytology of reproduction in plants other than angiosperms. Cytology and Mendelian heredity. Chromosomal aberrations. Chromosome numbers and their alteration. Cytological aspects of hybridity. The role of the cytoplasm in development and heredity. Cytology and taxonomy. Suggested reading. Index.

Note: This book is intended for use in college and university courses in cytology and related biological sciences. It deals mainly with the structural and genetic aspects of the subject and is simple in treatment for the use of beginners in cytology and cytogenetics. It is not a new edition of the author's *Introduction to cytology*, described below, but is a new work intended as an introductory textbook only, and it lacks the reference features of the larger work.

SHARP, LESTER WHYLAND

576.3
1923 Introduction to cytology. Third edition. New York: McGraw-Hill Book Company, Inc., 1934. 567 p. illus. 22 cm. \$5.00. 1394

Contents: Cells and tissues. Protoplasm. The nucleus. Plastids. The Golgi material. Chondriosomes. Ergastic substances. Somatic cell-division. The morphology of the chromosomes. The structure of the chromosomes. The achromatic figure. Cytokinesis and the cell wall. Atypical mitosis and the cell wall. Gametogenesis and sporogenesis. Syngamy. Meiosis. Chromosomes and Mendelian heredity. Fragmentation and translocation. Reciprocal translocation. Heteroploidy. The cytogenetics of autotetraploid plants. The cytogenetics of hybrids. Chromosomes and sex. Apomixis and related phenomena. Cytoplasmic heredity. Historical sketch. Bibliography. Index.

Note: This general textbook and reference work in plant cytology deals chiefly with the structural and genetical aspects of cytology. Changes have been made to adapt the book more closely to the needs of students without, however, making it an elementary treatise. Forty new illustrations have been added, and there is an extensive bibliography.

Protoplasm

LILLIE, RALPH STAYNER

1923 Protoplasmic action and nervous action. Second edition. Chicago: The University of Chicago Press, 1932. 417 p. illus. 19 cm. (The University of Chicago science series) \$3.00. 1396

Contents: Introduction: General characteristics of living matter. The cellular organization of living matter. General characters of living organisms. General peculiarities of protoplasm as a physical system. Physical nature of protoplasmic structure: Importance of surface conditions; permeability and other properties of protoplasmic membranes. General conditions determining the properties of protoplasmic membranes. Relation of the inorganic salts of the medium to the physiological processes in protoplasm. General physiological action of lipid-alterant and surface-active substances. Catalysis in relation to the chemical processes in living matter. Electrical and other factors in the catalytic action of protoplasm. Stimulation and transmission of excitation in protoplasm. Bioelectric phenomena. Membrane changes during stimulation. The physico-chemical basis of transmission in nerve and other protoplasmic systems. Index.

Note: This volume is based in part on lectures delivered at Clark University and the Marine Biological Laboratory on the physico-chemical basis of the more general or fundamental properties of living matter. It is concerned with the question of how the living system must be constituted (in the physico-chemical

sense) in order to exhibit the following properties: (1) the property of specific growth, and (2) a unification or integration of activities of such a kind as to secure the continued existence of the living system in its environment. The structural and physico-chemical organization of living matter, the modifiability of its rate of reaction under varying conditions (irritability), and its transmissive property (so highly developed in nervous tissues) are considered in some detail; and their probable relation to the polyphasic and film-partitioned character of the protoplasmic system is indicated. In this edition some additional references, chiefly to recent books and articles of a comprehensive or summarizing nature, have been added. Certain changes in theory or interpretation, made necessary by the progress of research, are also briefly indicated.

SEIFRIZ, WILLIAM ERNEST

576.2
1923 Protoplasm. New York: McGraw-Hill Book Company, Inc., 1936. 584 p. illus. 23 cm. (McGraw-Hill publications in the agricultural and botanical sciences, E. W. Sinnott, consulting editor) \$6.00. 1397

Contents: The living substance. The cell. Model making. Micrurgy. Tissue culture. The colloidal state. Emulsions. Hydrophilic sols and gels. Surface tension. Adsorption. Osmosis. Imbibition. Viscosity. Elasticity. The structure of protoplasm and organic colloidal matter. Permeability. Acidity. Electrophysiology. Electrokinetics. Radiant energy. The role of water. Salts. Carbohydrates. Fats. Proteins. Regulatory substances. The origin of living matter. Bibliography.

Note: Restricted to problems in the behavior of protoplasm. The book deals with the essentially physical properties of protoplasm, and shows how all branches of science bear upon and are necessary for a solution of the otherwise purely biological problems of cellular and protoplasmic behavior. Special attention is given to the application of principles of colloid chemistry to biological problems.

Bioluminescence

HARVEY, EDMUND NEWTON

591.59
1926 Living light. Princeton: Princeton University Press, 1940. 328 p. illus. (part col.) 23 cm. \$4.00. 1398

Contents: Cold light. Light-producing organisms. Types of luminescence. Chemistry of light production. Physiology of light production. Physical nature of animal light. Bibliography. Index.

Note: An investigation of present knowledge of bioluminescence, light emission by living things. The historical approach has been adopted, and each chapter is complete in itself, presenting material of interest to investigators in such various fields as biology, chemistry, and physics. The volume can be read by a layman with scientific interests. The bibliography contains a section listing general papers which deal with luminescence, and a list of publications from the Physiological Laboratory of Princeton University. The remaining sections deal with literature on luminescence from 1920 to 1940, classified mainly under the various phyla of the animal kingdom.

BOTANY

General

DAHLGREN, BROR ERIC, AND PAUL C. STANDLEY

Edible and poisonous plants of the Caribbean region. Issued by the Bureau of Medicine and Surgery, Navy Department. Washington, D.C.: Government Printing Office, 1944. 102 p. illus. 18 cm. (Navmed 127.) Paper, \$0.20. 1400

Contents: General instructions. Fruits, wild and cultivated. Cultivated edible roots. Edible seeds and greens. "Substitute water" plants. Poisonous plants. Appendices: Spanish names of common food plants. Master identification table, edible and poisonous plants. Master location table, edible and poisonous plants. Index.

Note: This manual is designed to aid the serviceman to live off the land if he becomes separated from his unit. It illustrates and describes common edible and poisonous plants of the Caribbean region, chiefly of Central America and the West Indies. The following types of plants have been excluded: rare species; plants well known to Americans, such as corn, rice, carrots, beans, squashes, sugar cane; familiar fruits, such as oranges, bananas, pineapples, and specific types of coconuts.

✓ FASSETT, NORMAN CARTER

A manual of aquatic plants. New York: McGraw-Hill Book Company, Inc., 1940. 382 p. illus. 23 cm. \$4.00. 1401

Contents: Part I, General key. Part II, Descriptive treatment. Appendix. Uses by wildlife. Uses of aquatic plants by birds and mammals. Animal index. Bibliography. The relation of plants to fish. Bibliography. Glossary.

Note: In this simple, practical book the author provides keys and illustrations for macroscopic plants which normally grow in water (saline, tidal, and bog habitats excluded) from Minnesota to Missouri and eastward to the Maritime Provinces and Virginia. Part I is a key, based on vegetative characters, for identifying aquatic plants. The key to sterile plants is unique. Part II is a taxonomic treatment of all the plants.

FERNALD, MERRITT LYNDON, AND ALFRED CHARLES KINSEY

✓ Edible wild plants of eastern North America. Cornwall-on-Hudson, N.Y.: Idlewild Press, 1943. 453 p. illus. 22 cm. (Gray Herbarium of Harvard University. Special publication) \$3.00. 1402

Contents (abridged): Edible wild plants of eastern North America classified according to uses. Poisonous flowering plants likely to be mistaken for edible species. Detailed enumeration and discussion of edible wild flowering plants and ferns of eastern North America. Mushrooms, seaweeds, and lichens. Bibliography. Index.

Note: This survey of edible wild plants is intended for practical use by the interested layman, to provide not only possible food for the outdoor camper but also new and attractive sources of greens for the family table in rural communities and possible new markets in town and country. The information is based largely on the available literature of the field, and only the flowering plants and ferns are discussed in any detail. Mushrooms are purposely omitted as too dangerous for the novice, although the more deadly toadstools are described so that the beginner may recognize them. Description, key-characters, habitat, range, season, and uses are given for each plant dealt with, and there are numerous pen-and-ink drawings.

HARVARD UNIVERSITY. ARNOLD ARBORETUM LIBRARY

Catalogue of the Library of the Arnold Arboretum of Harvard University, compiled under the direction of Oakes Ames by Ethelyn Maria Tucker. Volume III: Serial publications—authors and titles; supplement, 1917–1933. Cambridge, Mass.: Printed at the Cosmos Press, 1933. 346 p. 31 cm. (Arnold Arboretum. Publications. No. 6, vol. 3) Paper, \$4.25. 1403

Contents: Preface. Periodicals, reports and other serial publications. Author catalogue.

Note: The first volume of this catalogue was published in 1914 and comprised two alphabetical lists: serial publications, and authors and titles. The second volume, published in 1917, contained the same material, with the additions acquired in the three intervening years, arranged according to subjects, together with a supplement to volume I. These two volumes, now out of print, listed over 31,000 volumes and several thousand pamphlets. The third volume lists the 10,000 volumes, in addition to the pamphlets, acquired in the years between 1917 and 1933; the list of serial publications covers the first 16 pages and the author catalogue covers the remainder of the volume. The Library of the Arnold Arboretum has for years collected books relating to dendrology, general descriptive botany, the cultivation of trees, the works of travelers describing trees and other vegetation, and sets of periodicals in all languages relating to botany, forestry, and allied subjects. Since 1927 the library has also collected in the fields of pathology, cytology and genetics.

JAEGER, EDMUND CARROLL

Desert wild flowers. Revised edition. Stanford University, Calif.: Stanford University Press, 1941. 322 p. illus. 21 cm. \$3.50. 1404

Note: This book for the layman and amateur botanist contains descriptions of 764 desert plants. Each plant is illustrated by a line drawing or, in a few cases, a photograph. The derivations of the botanical names are given. Practically all known plants of the deserts of California and related portions of Nevada, including the Lake Mead area at Boulder Dam, are included.

JOHANSEN, DONALD ALEXANDER

Plant microtechnique. New York: McGraw-Hill Book Company, Inc., 1940. 523 p. illus. 23 cm. (McGraw-Hill publications in the botanical sciences; E. W. Sinnott, consulting editor) \$4.50. 1405

Contents: Section I, General methods: Introduction. Laboratory rules. Apparatus. Reagents. Killing and fixation. Stains. Staining procedures. Special methods. Whole-mount methods. The glycerin method. Celloidin methods. Paraffin methods. Smear methods. Cytological methods. Microchemical methods. Sources of materials. Section II, Special methods for the various phyla: Schizophyta. Chlorophyta. Euglenophyta. Pyrrophyta. Chrysophyta. Phaeophyta. Cyanophyta. Rhodophyta. Myxothallophyta. Mycophyta (Eumycetae). Bryophyta. Pteridophyta. Cycadophyta. Coniferophyta. Anthophyta.

Note: In this important book the author covers in a practical, detailed manner the entire field of botanical microtechnique with the exception of paleobotany and photomicrography.

LLOYD, FRANCIS ERNEST

The carnivorous plants. Waltham, Mass.: Chronica Botanica, 1942. 352 p. illus. 27 cm. (A ✓

new series of plant science books, edited by Frans Verdoorn. Vol. ix) \$6.00. 1407

Contents: Introduction. *Heliamphora*. *Sarracenia*. *Darlingtonia californica*. *Nepenthes*. *Cephalotus follicularis*. *Genlisea*. *Byblis*. *Drosophyllum lusitanicum*. *Pinguicula*. *Drosera*. The carnivorous fungi. *Dionaea*. *Aldrovanda*. *Utricularia*. *Biovularia*, and *Poly-pompholyx*. The *Utricularia* trap. Indices.

Note: This monograph embodies the results of 13 years intensive study of representatives of all the various types of carnivorous plants. Much work was done in the field (in South Africa, Australasia, and North America) and this has been amplified by extensive laboratory studies. The illustrations are nearly all original and include numerous halftone plates and a large number of line drawings.

MEDSGER, OLIVER PERRY

✓ Edible wild plants. With an introduction by Ernest Thompson Seton. Illustrated with eighty pen and ink drawings and nineteen photographs. New York: The Macmillan Company, 1939. 323 p. illus. 21 cm. \$3.50. 1408

Contents: Edible wild fruits. Edible nuts. Edible seeds and seed pods. Salad plants and potherbs. Edible roots and tubers. Beverage and flavoring plants. Sugars and gums. Mushrooms. Finding indices: Edible plants of northeastern United States and eastern Canada west to the Mississippi River. Edible plants of southern United States. Edible plants from the Mississippi River to the Rocky Mountains. Edible plants of the Rocky Mountains and Pacific states. General index.

Note: This manual does not include all the edible plants in the United States and Canada, a few having been omitted intentionally because of their rarity or limited range. In certain large groups such as the blackberries, blueberries, etc., only a few important species are described. The work includes species from nearly all of the chief orders of flowering plants, as well as a few lower forms of plant life. There are numerous drawings and photographs as well as a "finding index" which gives the names of plants, both common and scientific, with the range, season, and a few of the most pronounced characteristics. The work is based mainly on the existing literature of the field.

MUENSCHER, WALTER CONRAD LEOPOLD

Aquatic plants of the United States. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1944. 374 p. illus. 24 cm. (Handbooks of American natural history, edited by A. H. Wright. Vol. iv) \$5.00. 1408a

Contents (abridged): Introduction. Key to the families. Aquatic plants arranged by families: Typhaceae. Sparganiaceae. Potamogetonaceae. Najadaceae. Juncaginaceae. Alismaceae. Butomaceae. Hydrocharitaceae. Gramineae. Cyperaceae. Araceae. Lemnaceae. Mayacaceae. Eriocaulaceae. Xyridaceae. Pontederiaceae. Juncaceae. Marantaceae. Polygonaceae. Chenopodiaceae. Amaranthaceae. Caryophyllaceae. Ceratophyllaceae. Nymphaeaceae. Ranunculaceae. Cruciferae. Podostemaceae. Crassulaceae. Rosaceae. Callitricheae. Elatinaceae. Lythraceae. Onagraceae. Trapaceae. Haloragidaceae. Umbelliferae. Primulaceae. Menyanthaceae. Hydrophyllaceae. Scrophulariaceae. Lentibulariaceae. Acanthaceae. Plantaginaceae. Lobeliaceae. Compositae. Isoëtaceae. Equisetaceae. Marsileaceae. Salviniaceae. Parkeriaceae. Glossary. Index.

Note: A systematic classification and description of those species which normally start in the water and must grow for at least a part of their life cycle in water, either completely submerged or emerged. A few borderline species occurring in bogs and marshes are also included, but land plants which are periodically inundated or immersed are omitted. The general plan of the work includes a key to the families with aquatic species, followed by a more detailed treatment giving description, habitat, range, and other botanical data for each species treated. Most of the species are illustrated and there are numerous distribution maps.

MUENSCHER, WALTER CONRAD LEOPOLD

✓ Poisonous plants of the United States. New York: The Macmillan Company, 1939. 266 p. illus. 22 cm. (The Rural science series, edited by L. H. Bailey) \$3.50. 1409

Contents: Part I, Nature and classification of poisonous plants: The classification of poisonous plants. The natural groups of families of plants. The chemical nature and properties of the toxic principle. The conditions under which poisoning is produced. Plants poisonous or injurious under special conditions. Plants causing dermatitis. Plants causing photosensitization. Cyanogenetic plants. Introduced poisonous ornamental plants. Plants producing poisonous seeds. Seleniferous plants. Plants producing undesirable flavors in milk and milk products. Plants causing mechanical injury. Part II, Poisonous plants arranged according to family. Literature references. Index.

Note: The most important results of the past twenty-five years of research in poisonous plants are presented in this book for the general reader, botanists, and those associated with the livestock industry and the utilization of native plants for grazing and hay. The author offers a brief study of the nature of poisonous plants and a discussion of plants which can cause skin or internal poisoning to human beings. Part II is a detailed treatment of the plants by families. Illustrated with 75 drawings.

PEATTIE, DONALD CULROSS

Flowering earth. Wood engravings by Paul Landacre. New York: G. P. Putnam's Sons, 1939. 260 p. illus. 21 cm. \$2.50. 1410 ✓

Contents: On striking your roots. On branching out. Chlorophyll: the sun trap. What a plant is. Protoplasm—the body of life. The seeds of life. The first algae. The seaweeds. The fern forests. Diatoms—grass of the sea. Conifers and cycads. The rise of the modern floras. A transplanting. A garden alliance. The moment of flowering. The sleep of the seed. Growth. The web of life. Bibliography. Index.

Note: A readable discussion of the fundamentals of plant biology, written for the interested layman. The style is intentionally literary and is aimed at conveying a sense of the beauty and mystery of the growth of plants, from the primeval algae to the flora of the present-day forests and gardens. Such topics as the relation of insects and birds to the cross-fertilization of plants, the mystery of life as represented in the longevity and impermeability of the seed, and the extinction of the fern forests of the Carboniferous period are treated in a somewhat poetic and philosophic fashion.

PLATT, RUTHERFORD HAYES

This green world. With illustrations from photographs by the author. New York: Dodd, Mead and Company, 1942. 222 p. illus. (part col.) 25 cm. \$3.75. 1946 1410a ✓

Contents: Trees: Listen to them grow—introductory. World's greatest waterworks. Hundred-mile roots. Inside information on tree trunks. Green leaves as food factories. The dynamic spirals of plants. What happens to make autumn colors. Winter buds and how they work. Flowers: The spectrum marches across the pasture. Seeing color the year round. The day-length timetable of flowers. Tree and grass equipment for wind pollination. Pollen jewelry and how flowers guard it. How flowers and insects fit each other. The precision tools of cross-pollination. Flower forms—the products of nature's assembly line. From buttercups to figworts. From mints to orchids. Supplements. Indexes.

Note: A handsomely illustrated volume presenting an introduction to the world of plant life from the viewpoint of the amateur naturalist and the general reader who desires a knowledge of the way plants live. The author, although primarily a photographer rather than a professional botanist, writes with an estimable degree of scientific accuracy. A feature of the book is the collection of 183 excellent photographs by the author, 42 of which are in natural color. An annotated list of 24 books for the layman on trees, flowers, pollen, and plants in general is given in the appendix.

POOL, RAYMOND JOHN

Flowers and flowering plants; an introduction to the nature and work of flowers and the classification of flowering plants. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 428 p. illus. 23 cm. (McGraw-Hill publications in the botanical sciences, E. W. Sinnott, consulting editor) \$3.50. 1949 1410b

Contents: Introduction. Structure of the flower. The work of the flower. Fruits and seeds. How flowering plants travel. Forms and relationships in flowers. Floral diagrams and formulae.

Flower clusters. Vegetative characteristics of flowering plants. The classification of plants. Principles of classification of flowering plants. Selected orders and families of dicotyledons. The mallows and geraniums. The teas, poppies, and pinks. The primroses, heathers, and ebonies. The gentians, phloxes, snapdragons, and mints. Buttercups to asters. The myrtles, star-flowers, and cactuses. The bittersweets, maples, and parsleys. The madders, bluebells, and asters. Selected orders and families of monocotyledons. The lilies, palms, and aroids. The grasses and sedges. The water weeds, irises, and orchids. A bit of early history. From Linnaeus to Engler and Bessey. Collecting and preparing specimens. Reference books, monographs, manuals, and floras.

Note: A textbook for college students who have had an introductory course in botany. The author has based his presentation on the assumption that a study of the biological relationships among flowers will stimulate interest in biological sciences, particularly in classification. The second edition contains a new chapter presenting a description of the more common characteristics of roots, stems, and leaves, illustrated by twenty new figures drawn especially for this edition.

RICKETT, HAROLD WILLIAM

The green earth, an invitation to botany. Lancaster, Pa.: The Jaques Cattell Press, 1943. 353 p. illus. 25 cm. (Humanizing science series) \$3.50. 1411

Contents: Prologue: Of the green color of leaves and what comes of it. Of the anatomy of leaves. Of the architecture of plants. Of the growth of plants. Of the purposes of plants. Of flowers and their fruits. Of the likeness of peas in a pod. Of names. Of fern and moss. New worlds for old. The end of things. Epilogue.

Note: A book for the layman which explains the growth and structure of plants, shows how life develops in the plant world, and demonstrates man's dependence on the miracle called chlorophyll. One hundred illustrations are included.

ROBBINS, WILFRED WILLIAM, AND HELEN MONOSMITH PEARSON

Sex in the plant world. Illustrated. New York: D. Appleton-Century Company, Incorporated, 1933. 193 p. illus. 19 cm. (Appleton new world of science series, edited by Watson Davis) \$2.00. 1411a

Contents: "All life from life." Sex in flowers. Sex in ferns and mosses. The origin of sex. Primitive sex. Sex in the scavengers and parasites. Begetting without sex. Parthenogenesis—virgin birth in plants. The discovery of sex in plants. Plant courtships. Males, females, and otherwise. Sex traits. Sterility. How plants prevent inbreeding. Hybrid sterility. What determines sex. Sex chromosomes. The secret of heredity. An ode dedicated to Camerarius: from the "Botanick Essays" of Patrick Blair, 1720. Index.

Note: A non-technical, semi-popular account for the layman which outlines the fundamental principles of sexual reproduction in the plant kingdom. There are 65 drawings which are intended more as diagrams than as accurately detailed figures.

SASS, JOHN EUGENE

Elements of botanical microtechnique. New York: McGraw-Hill Book Company, Inc., 1940. 222 p. illus. 23 cm. (McGraw-Hill publications in the botanical sciences, E. W. Sinnott, consulting editor) \$2.50. 1411b

Contents: General principles and methods: Introduction, collecting and subdividing plant materials for processing. Killing. Fixing and storing plant tissues. Dehydration for embedding. Infiltration and embedding in paraffin. Microtome sectioning of material in paraffin. Staining paraffin sections. Infiltration and embedding in celloidin. Sectioning and staining material embedded in celloidin. Sectioning unbedded tissues. The preparation of whole mounts. Criteria of successful processing. Specific methods: Introduction. Vegetative organs of vascular plants. Thallophyta. Bryophyta. Pteridophyta. Reproductive structures. Spermatophyta. Reproductive structures. The construction, use, and care of the microscope. Photomicrography.

Note: Especially designed for the beginning student in the field, this new manual presents tested methods of preparing com-

mon plant materials for microscopic study. The author describes in detail the operations involved: choosing suitable subjects, selecting and collection, killing and preservation of structural details, preparation for microtome sectioning, staining of sections and whole mounts, and their preparation as permanent slides, etc.

UNITED STATES. WAR DEPARTMENT

Emergency food plants and poisonous plants of the islands of the Pacific. War Department Technical manual TM 10-420. Washington: United States Government Printing Office, 1943. 149 p. illus. 17 cm. \$0.15. 1411c

Contents (abridged): Purpose and scope. Reassurance and warning. Assistance and advice of natives. Miscellaneous information. Edible ferns. Edible herbs. Edible palms. Edible grasses. Edible tubers. Plants, eaten as greens. Edible fruits. Edible seeds. Poisonous plants. Plants used to stupefy fish. Index.

Note: This manual was written by Dr. E. D. Merrill, Administrator of the Botanical Collections and Director of the Arnold Arboretum, Harvard University. It covers all of Polynesia, Micronesia, and Melanesia, as well as the entire Malay Archipelago including the Malay Peninsula and the Philippines. For all practical purposes it also covers Indo-China, Thailand (Siam), Burma, and eastern India. Rare plants and those fruit trees and plants familiar to residents of the temperate regions have been excluded.

WODEHOUSE, ROGER PHILIP

Pollen grains; their structure, identification and significance in science and medicine. New York: McGraw-Hill Book Company, Inc., 1935. 574 p. illus. 23 cm. (McGraw-Hill publications in the agricultural and botanical sciences, E. W. Sinnott, consulting editor) \$6.00. 1412

Contents: Introduction. Part I, General: Historical review. Methods of collecting pollen in large amounts. Preparation of pollen for microscopic examination. Pollen statistics: a botanical and geological research method by Professor G. Erdtman. Atmospheric pollen. Hayfever: early spring, early summer, late summer. Pollen-grain characters. Part II, Classification: Master key. Fossil gymnosperms. Living gymnosperms: key to the genera. Angiospermae.

Note: The first part of the book discusses the collection and presentation of pollen, its preparation for microscopical examination, and the part pollen plays in the production of hay fever. In a section on morphology the origin of pollen-grain characters, whether they be environmental or hereditary, is discussed. The numerous sculptured patterns and those of the furrowed arrangements are subjected to mathematical analysis and phylogenetic interpretation. A bibliography is included.

ZIRKLE, CONWAY

The beginnings of plant hybridization. Philadelphia: University of Pennsylvania Press, 1935. 231 p. illus. 23 cm. (Pennsylvania University. Morris Arboretum monographs. 1) \$2.50. 1413

Contents (abridged): The earliest description of hybrids. Degeneration and the delayed discovery of plant hybrids. Xenia in *Zea mays*. Plant hybridization before Koelreuter. Résumé of plant hybridization. Appendix: A chronological list of hybridization, 1716-1760. Bibliography. Index.

Note: This history of plant hybrids before 1761 includes full quotations from early works on the subject. Written in non-technical language for the geneticist, botanist, and layman. The appendix contains a chronological list of hybridization and a long bibliography.

Textbooks

BROWN, WILLIAM HENRY

The plant kingdom; a textbook of general botany. Boston: Ginn and Company, 1935. 869 p. illus. 21 cm. \$4.25. 1414

Contents: Introduction. The plant and its environment. The cell. The leaf. Assimilation and use of materials. Water in relation to leaves. Specialized leaves. The stem. Growth and responses. Specialized stems. The root. Plant geography. The flower. The fruit and the seed. Heredity. Divisions of the plant kingdom. Bacteria. Schizophyta. Flagellates, the ancestors of algae and higher plants. Chlorophyta, the green algae. Chrysophyta and Pyrrophyta, some yellow-green and brown thallophytes. Phaeophyta (brown algae). Rhodophyta (red algae). Myxomycetes (slime molds). Fungi (Phycophyta). Division Bryophyta. Division Pteridophyta (ferns and fern allies). Division Spermatophyta. Paleobotany. Evolution. Subject index.

Note: Incorporates the newer ideas concerning the interrelationship between plant groups and the working of the evolutionary process in plant development. Main types are discussed in detail, while the principal characteristics of intermediate groups are described more briefly. Contains more than a thousand informative illustrations, of which 980 are drawn figures made under the supervision of the author. Designed for a first course in college.

COULTER, JOHN MERLE, AND OTHERS

A textbook of botany, revised, for colleges and universities, by John Merle Coulter, Charles Reid Barnes, and Henry Chandler Cowles. New York: American Book Company, 1930-31. 3 v. illus. 21 cm. Vol. 1-2, \$2.00 each; Vol. 3, \$3.00.

1414a

Contents (abridged): Volume I, Morphology, revised by John Merle Coulter: Thallophytes. Bryophytes. Pteridophytes. Spermatophytes. Organic evolution. Index. Volume II, Physiology, revised and enlarged by Charles A. Shull: The material income of plants. The material outgo of plants. Nutrition. Destructive metabolism. Growth and movement. Index. Volume III, Ecology, revised and enlarged by George D. Fuller: Roots and rhizoids. Leaves. Stems. Saprophytism and symbiosis. Reproduction and dispersal. Germination. Plant communities. Adaptation. Index.

Note: A three-part textbook for undergraduate students which develops certain general conceptions fundamental to each of the three fields of botany entered. The presentation is simplified, extensive terminology being avoided and technical definitions used only when incident to the necessary introduction of terms. While each volume may be used separately, there is a continuity of presentation from one book to the next. There are bibliographies at the end of volumes I and II, references at the end of some chapters in volume I, and a total of 1,246 text figures.

COULTER, MERLE CROWE

The story of the plant kingdom. Chicago: The University of Chicago Press, 1935. 270 p. illus. 23 cm. \$2.50.

1415

Contents: Primitive plants. Early steps in plant evolution. The higher algae. Dependent organisms. A saprophytic fungus. Parasitic fungi. The subdivisions of fungi. The invasion of the land. Reproduction among liverworts. Mosses and the alternation of generations. Ferns and the independent sporophyte. Horsetails and club mosses. The modern plant body. Photosynthesis and respiration. Bacteria. Primitive seed plants. The life-cycle of the flowering plant. Seed distribution and seed germination. The process of organic evolution. Classification. Index.

Note: Presents the essentials of botanical science both for courses in general biology and for beginning courses in pure botany. Of the twenty chapters, twelve constitute "indispensable reading" on the plant kingdom and may be read intelligibly without reference to others. These twelve describe and occasionally explain certain essentials of botanical science in a style that minimizes technical terminology and detail. The entire twenty provide an extensive body of principles and a large amount of terminology and detail as basis for students who plan to carry further their study of biology. The phylogenetic sequence is employed as a major framework of organization. Illustrations resemble as closely as possible actual specimens encountered in laboratory work. A "new plan" text at the University of Chicago.

DARRAH, WILLIAM CULP

An introduction to the plant sciences. New York: John Wiley and Sons, Inc., 1942. 332 p. illus. 23 cm. \$2.75.

1416

Contents: The plant sciences in human affairs. The nature of living matter. The cell and aggregations of cells. The plant body: its structures and functions. Metabolism of plants. Movements of materials in plants. Growth and reproduction. The organism and its environment. The earth as a place for life. The study of the plant kingdom. Thallophytes: the algae. Thallophytes: the fungi. Bryophytes: the alternation of generations. Tracheophytes: the land habit. Tracheophytes: the nature of the seed. Tracheophytes: the biology of flowering plants. Genetics: how plants inherit. Biological evolution. A brief history of the plant sciences. Appendix. Glossary. Index.

Note: An elementary textbook designed for college students who have a knowledge of general biology. Selected supplementary readings are given at the end of each chapter.

FOSTER, ADRIANCE SHERWOOD

Practical plant anatomy. New York: D. Van Nostrand Company, Inc., 1942. 155 p. illus. 22 cm. \$2.50.

1417 ✓

Contents: The protoplast. The cell wall. Meristems. Problems in the classification of cell types, tissues and tissue systems in vascular plants (including tabular summary of main cell types in seed plants). The epidermis. Parenchyma cells. Collenchyma cells. Sclereides. Fibers. Tracheary elements, sieve-tube elements. The stem. The leaf. The root. Appendix. Index.

Note: This book combines the functions of text and laboratory manual. In the introduction to each exercise the required theoretical background is presented. Then there is provided sufficient material—with directions for its study—to enable the student to proceed from theory to practice. The emphasis throughout the book is placed on the use of living tissue and macerated tissue.

FULLER, HARRY JAMES

The plant world: a text in college botany. New York: Henry Holt and Company, 1941. 592 p. illus. (part col.) 22 cm. \$3.40.

1418

Contents (abridged): Part I, The nature of plants and of plant study: Plant study. The manifestations of life. The kinds of plants. Part II, The structure and physiology of flowering plants: The gross structure and activities of seed plants. The microscopic structure of plants. The physiology of plant cells. Roots and the relation of plants to the soil. The structure of stems. The properties and uses of wood. The physiology of stems. The structure and economic importance of leaves. Metabolism. The structure and functions of flowers. Fruit and seed structure. Variation and heredity in plants. Part III, The plant kingdom: The classification of plants. Thallophytes. Plant diseases. Bryophytes. Pteridophytes. The spermatophytes. Part IV, The distribution of plants in time and space: Plant evolution. The distribution of plants in space. Appendix. Glossary. Index.

Note: A clearly written textbook for the elementary course in botany. It stresses those aspects of plant life which are directly and indirectly involved in everyday experiences. Reproductions of over 300 drawings or photographs are included. Contains a glossary of botanical terms and summaries at the end of each chapter.

HAUPT, ARTHUR WING

An introduction to botany. New York: McGraw-Hill Book Company, Inc., 1938. 396 p. illus. 23 cm. (McGraw-Hill publications in the botanical sciences) \$3.00.

1419

Contents: Introduction. Vegetative organs. Protoplasm and the cell. Vegetative tissues. Absorption, conduction, and transpiration. Metabolism and irritability. Environmental relations. The flower and fruit. Floral evolution and pollination. Seeds and seedlings. Heredity and plant breeding. Thallophytes: algae. Thallophytes: fungi. Bryophytes. Pteridophytes. Spermatophytes. Chief families of flowering plants. Plant life of the past. The principle of evolution. The causes of evolution.

Note: This college textbook presents clearly and concisely the fundamental facts and principles relating to the structure, functions, and life relations of plants. Special attention is given to evolution, heredity, adaptation, and other topics of general biological interest which are of cultural value.

HILL, JOHN BENJAMIN, AND OTHERS

Botany, a textbook for colleges, by J. Ben Hill, Lee O. Overholts and Henry W. Popp. New

York: McGraw-Hill Book Company, Inc., 1936. 672 p. illus. (part col.) 23 cm. (McGraw-Hill publications in the agricultural and botanical sciences, E. W. Sinnott, consulting editor) \$4.00.

1420

Contents: Part I, Structure and physiology of seed plants: Introduction. Coloration in plants. Plant cells. Leaves. Metabolism—food synthesis. Roots. Absorption of water and inorganic salts. Stems. Growth and movement. Flowers. Fruits, seeds, and seedlings. Metabolism—the catabolic phase—digestion, respiration, fermentation. Part II, The plant groups: The classification of plants. Thallophyta—algae. Thallophyta—fungi. Bryophyta—liverworts and mosses. Pteridophyta—ferns and their allies. Spermatophyta—seed plants. Families of angiosperms. Heredity.

Note: A textbook for a two-semester college course in general botany. In Part I, the physiology of an organ is considered in connection with its structure and morphology. Part II is devoted entirely to a consideration of the different groups of plants.

HOLMAN, RICHARD MORRIS, AND WILFRED W. ROBBINS

A textbook of general botany for colleges and universities. Fourth edition. New York: John Wiley & Sons, Inc., 1938. 664 p. illus. 24 cm. \$4.00.

1421

Contents: Part I, The structure and physiology of seed-bearing plants: Introduction. The plant body. The cell. The stem. The root. The leaf. The flower. Fruit, seed, and seedling. Relation of the plant to its environment. Part II, A survey of the plant kingdom with particular emphasis upon development, reproduction, and relationships, including also a chapter on evolution and heredity: Introduction. The Thallophyta—algae. The Thallophyta—fungi. Embryophyta—the Bryophyta (liverworts and mosses). Embryophyta—the Pteridophyta (ferns and fern allies). Embryophyta—the Spermatophyta (seed plants). Evolution and heredity—fossil plants. Appendix: References and collateral reading. Glossary. Index.

Note: In the fourth edition the following changes have been made. There is greater emphasis on active solute absorption, the part on conduction has been altered, the tissue classification has been revised. In the previous edition the plant kingdom was divided into the Thallophyta and Embryophyta; the new book suggests also an alternative grouping in which the vascular plants or Tracheophyta are composed of Psilopsida, Lycopsida, Sphenopsida and Pteropsida. A glossary has been added.

O'HANLON, ELLEN, SISTER

Fundamentals of plant science. New York: F. S. Crofts and Co., 1941. 488 p. illus. (part col.) 23 cm. \$4.25.

1421a

Contents: Part I, Orientation. The plant and animal kingdoms distinguished. Classification. The plant as a whole. The plant cell. Leaves. The flower. Fruits. Seeds and seedlings. Roots. Stems. Part II, Alteration of generations. Algae. Fungi and their allies. Bryophyta. Pteridophyta. Gymnospermae. Angiospermae. Genetics. Organic evolution. Botanical history. Glossary. Index.

Note: A general college text for beginners, designed for a full year's work in botany, although either half may be considered a complete course. Part I may be omitted by students who have had a good high-school course in general biology, and Part II alone may be used as a text for a summer course. In the chapter on Organic evolution the author tends to minimize the significance of Darwin's theory. There are references at the end of each chapter and a 24-page glossary.

POOL, RAYMOND JOHN

Basic course in botany; the foundations of plant science. Boston: Ginn and Company, 1940. 654 p. illus. 24 cm. \$4.00.

1421b

Contents: Part I, General orientation: The point of view. Biological fundamentals. Part II, The anatomical and physiological organization of plants: Plant cells and their activities. Tissues and organs of plants. Structure and activities of roots, stems, leaves, flowers, fruits, and seeds. Part III, The nature of the plant world: Classification of plants. Thallophyta—algae and fungi. Classes of algae. Classes of fungi. Bryophyta—liverworts and mosses. Pteridophyta—ferns. Spermatophyta—seed plants. Representative families of flowering plants. Part IV, Studies in

the ecology, pathology, and evolution of plants: Plants and their environment. Plant communities and vegetation regions. Plant diseases. Variation, heredity, evolution. Glossary. Index.

Note: This introductory college text emphasizes the essentials of the science of botany, especially the broad biological point of view, and presents the phenomena associated with plants as fixtures of the dynamic cosmos as a whole. The role of plants in the circulation of materials and energy in nature and their general place in relation to agriculture, public health, soil conservation, land management, and human society in general receive detailed consideration throughout the work. Questions of terminology and classification have been made as simple and brief as possible.

ROBBINS, WILLIAM JACOB, AND HAROLD W. RICKETT

Botany; a textbook for college and university students. Third edition. New York: D. Van Nostrand Company, Inc., 1939. 658 p. illus. 23 cm. \$3.75.

1422

Contents: The living plant; Introduction. Growth. Cells. Roots. Stems. Leaves. Water. Foods and nutrition. Life and energy. Stimuli and responses. Reproduction. Heredity. The nature of life. The kinds of plants: Introduction to the plant kingdom. Algae. Fungi. Bryophyta. Filicineae. Equisetineae and Lycopodiaceae. Gymnospermae. Angiospermae. The origin of life. The evolution of life. The distribution of plants on the earth. Questions for review and discussion. Appendix. References. Index.

Note: This textbook is designed for study by students in their first year at college. It provides a thorough elementary account of the basic plant processes and structures, and of each of the various types of plants and their individual characteristics. The first part includes discussions of the general principles of science and such fundamental topics as heredity and reproduction.

SINNOTT, EDMUND WARE

Botany; principles and problems. Third edition. New York: McGraw-Hill Book Company, Inc., 1935. 525 p. illus. 23 cm. (McGraw-Hill publications in the agricultural and botanical sciences, Edmund W. Sinnott, consulting editor) \$3.50.

1424

Contents: The science of botany. Introductory survey. The cell. The root and its functions. The leaf and its functions. The stem and its functions. Metabolism. Growth. Development and morphogenesis. The plant and its environment. Reproduction. Heredity and variation. Plant evolution. The plant kingdom. Thallophyta. Bryophyta. Vascular plants. Gymnospermae. Angiospermae. Index.

Note: A standard American college text. Throughout the book the plant is studied as a functioning structure and problem work is emphasized. Extensive changes in the phylogeny and classification of plants have been made in this edition. The chapter on morphogenesis is new. Other important revisions and additions have been made.

SMITH, GILBERT MORGAN, AND OTHERS

A textbook of general botany. Fourth edition. By Gilbert M. Smith, Edward M. Gilbert, Richard I. Evans, Benjamin M. Duggar, George S. Bryan and Charles E. Allen. New York: The Macmillan Company, 1942. 668 p. illus. (part col.) 24 cm. \$4.00.

1425

Contents: A familiar plant. The nature of cell. Some properties of cells, and tissues. Stems. Buds. Leaves. Roots. Nutrients and foods, metabolism, and transport. Growth and movement. Nuclear and cell division. The classification of plants. Chlorophyceae (green algae). Myxophyceae (blue-green algae). Phaeophyceae (brown algae). Rhodophyceae (red algae). Bacteria. Myxomycetes (slime molds). Phycomycetes. Ascomycetes. Basidiomycetes. Plant diseases. Lichens. Bryophyta: Hepaticae (liverworts). Bryophyta: Musci (mosses). Reduction of the number of chromosomes. Pteridophyta: Filicineae (ferns). Some other Pteridophyta. Gymnospermae (gymnosperms). Angiospermae (flowering plants). Seeds and fruits. Floral arrangement, and the families of angiosperms. Fossil plants. Inheritance and variation. Evolution. The major regions of vegetation in North America. Index.

Note: A standard college textbook. Although designed for a full-year course, it is so arranged that selected parts may be used for a shorter course. In this edition, nearly 200 of the 461 illustrations are new. The same publisher offers for use with this textbook *A laboratory manual of general botany*, by E. L. Fisk and R. M. Addoms, revised edition, 1935, 137 p., \$1.10.

STANFORD, ERNEST ELWOOD

General and economic botany. New York: D. Appleton-Century Company, Incorporated, 1937. 675 p. illus. 23 cm. (The Century biological series, Robert Hegner, editor) \$4.00. 1426

Contents: Science and the sciences. Life and living things. The plant kingdom. Seeds and seedlings. The plant body of the spermatophyte. Cells and tissues. The stem. The root. The leaf. Flower, fruit, and seed. The seed plant and its environment. Thallophytes: Schizophyta. Flagellata and Phycophyta. Mycophyta, Myxomycetaceae, lichens, virus diseases of plants: plant disease prevention. Embryophyta: Bryophyta and Pteridophyta. Spermatophyta: the Gymnospermae. Angiospermae: Dicotyledones: Piperales—Geraniales. Dicotyledones: Sapindales—Campanulales. Monocotyledones. Evolution, heredity, and plant breeding.

Note: This book presents the subject-matter usually dealt with in first-year college and university courses in botany. Although designed to interest the great majority of students who will not advance in the subject beyond the first-year course, the book is sufficiently detailed to serve as an adequate foundation for future specialization by those who will continue their study of the science.

SWINGLE, DEANE BRET

Plant life, a textbook of botany. Second edition. New York: D. Van Nostrand Company, Inc., 1942. 457 p. illus. 23 cm. \$2.25. 1427

Contents: Part I, Principles and methods: Purposes of systematic botany. Evolution in relation to taxonomy. Difficulties in classification. Principles of taxonomy. Development of systems of taxonomy. Phylogeny of spermatophytes. Nomenclature. Preparation of herbaria. The terminology of systematic botany. The literature of systematic botany. Part II, Families of Spermatophyta: General features of Spermatophyta. Families of gymnosperms. Families of dicotyledons. Families of monocotyledons.

Note: A textbook presenting in logical sequence the principles of plant taxonomy and nomenclature and discussing representative families of plants. The book is applicable to all parts of the country. The rules of nomenclature include the work of the International Congress of London.

SWINGLE, DEANE BRET

A textbook of systematic botany. Second edition. New York: McGraw-Hill Book Company, Inc., 1934. 270 p. illus. (part col.) 23 cm. (McGraw-Hill publications in the agricultural and botanical sciences) \$2.25. 1427a

Contents: Part I, Principles and methods: Purposes of systematic botany. Evolution in relation to taxonomy. Difficulties in classification. Principles of taxonomy. Development of systems of taxonomy. Phylogeny of spermatophytes. Nomenclature. Preparation of herbaria. The terminology of systematic botany. The literature of systematic botany. Part II, Families of Spermatophyta: General features of Spermatophyta. Families of gymnosperms. Families of dicotyledons. Families of monocotyledons. Index.

Note: A textbook for college students setting forth the principles of taxonomy and nomenclature as applied to botany. The book is designed to cover one semester, preferably the second, so that the fundamentals may be supplemented by field work in the spring. A course in general botany is a necessary prerequisite. The second edition has been revised to include new classifications made between 1928 and 1934, and a number of new illustrations have been added.

TORREY, RAY ETHAN

General botany for colleges, with 252 illustrations. New York: The Century Co., 1932. 449 p. illus. 23 cm. (The Century biological

series, Robert Hegner, editor. Ralph H. Wetmore, associate editor for botany) \$4.00. 1428

Contents: Part I, The structure and classification of seed plants: The seed plant and its organs. The seed and its germination. The root. The stem. The leaf. The inflorescence and the flower. The fruit and the seed. General ecology. Part II, The anatomy and physiology of seed plants: The structure of the cell. The activities of the cell-physiology. Anatomy of the vegetative system of the seed plants. Coal and its formation. The physiology of the vegetative system. The reproduction of seed plants. Part III, The evolution of the plant kingdom: Schizophyta. Algae (Phycophyta). Fungi (Mycophyta). Embryophyta. Tracheata. Summary. Conclusion. Index.

Note: This book supplies the textbook needs of the introductory botany course in colleges. While it has been written primarily for the majority of students who do not intend to become scientists, it provides a foundation of factual botany to serve adequately the needs of those who intend to pursue the subject further with a professional interest.

TRANSEAU, EDGAR NELSON, AND OTHERS

Textbook of botany, by Edgar Nelson Transeau, H. C. Sampson, and L. H. Tiffany. New York: Harper and Brothers, 1940. 812 p. illus. (part col.) 24 cm. \$4.00. 1428a

Contents (abridged): Plant science. The parts of plants. Learning to name plants. Seasonal aspects of plants. Local plant communities. Interpretation of plant behavior. Cells as biological units. The tissue system of leaves. Environment and leaf development. Hereditary differences in leaves. The food of plants. Photosynthesis. Synthesis of starches, fats, proteins. Uses of food in plants: respiration and plant development. Some biological relations of green plants. Interrelations of the parts of a plant. Plant behavior related to osmosis. Transpiration. Forms and external features of stems. Roots. Initiation of flowers. Flowers, fruits, and seeds. Sexual reproduction in flowering plants. Origin of plants used by man. Heredity in plants. Cross-fertilization and hybrid segregation. Mutations. The fungi. The Algae. The seed plants. The vegetation of North America. Index.

Note: This comprehensive, well-illustrated textbook is planned both for students majoring in the subject and for those seeking only a general knowledge. Written primarily to supplement what is observed and discussed, the work also helps students review, organize, amplify, and correct their own observations and inferences. Material from all the artificial subdivisions of botany is included. There are references at the end of each chapter and 424 text figures and photographs.

WEATHERWAX, PAUL

Plant biology. 417 illustrations on 182 figures. Philadelphia: W. B. Saunders Company, 1942. 455 p. illus. 23 cm. \$3.25. 1429

Contents (abridged): Introduction. Cells and living substance. The sources of food. Utilization of food. Nature and work of leaves, roots and soil. Stems. Modified organs. Metabolism, transport and food storage. Growth. Responses to stimuli. Reproduction. Plant as a unit. Heredity. Thallophyta. Bryophyta. Pteridophyta. Spermatophyta. Evolution. Pollination. Dormancy and dispersal. Migration. Communities. Succession. Glossary. Index.

Note: Dr. Weatherwax designed his book primarily for one-semester college courses in elementary botany and for the botany part of general biology courses. His treatment covers plants to be found in all parts of the United States. The physiological and ecological viewpoints are stressed. Technical terminology and morphological and taxonomic detail are not over emphasized. Virtually all illustrations are new for this book and wherever practical these pictures have been integrated with the text. Among the teaching aids given are summaries at the ends of chapters and an explanation of Latin prefixes found in the glossary.

Ecology

CAIN, STANLEY ADAIR

Foundations of plant geography. New York: Harper and Brothers, 1944. 556 p. illus. 24 cm. \$5.00. 1429a

Contents: Plant geography as a borderline science. Certain previously proposed principles of plant geography. Definition of paleoecology and limitations of the method. Identification of fossils. Determination of dominance in a fossil flora; of the living conditions of a fossil flora; of the structure of the vegetation of a fossil flora. Migration and evolution of vegetation. Certain aspects of the history of Cenozoic vegetation of western America. Pollen analysis as a paleoecological research method. Some terms and concepts of area. Dispersal and migration. Center of area. Criteria for the indication of center of origin. Endemics and endemism. Species senescence. Discontinuous distributions. Vicarious forms and areas. Polytypy and polyphyletic. Theory of differentiation in relation to the science of area. Some principles concerning evolution, speciation, and plant geography. Nature of species. Isolation. Causes of species stability. Rate of evolution and speciation. Some preliminary considerations of polyploidy. Origin and characteristics of polyploidy. Principles concerning polyploidy and related topics. Geographic aspects of polyploidy. Polyploidy and phylogenetic relationships. Glossary. Literature cited. Index.

Note: A full description of the principles of plant geography, with illustrative material drawn from the whole world. Paleoecology is analyzed as a method and related to the wider problems of plant geography. The material is incorporated from modern developments in systematics, evolution, speciation, cytology, genetics, pollen analysis, paleoecology, and areography, and synthesized into a unified whole. The index includes nearly 6000 items, and 720 entries are recorded in the bibliography. There are 63 maps, charts, and diagrams, and a 16-page glossary of terms.

CLUTE, WILLARD NELSON

Swamp and dune; a study in plant distribution. With fifteen illustrations. Indianapolis, Ind.: Willard N. Clute and Company, 1931. 92 p. illus. 23 cm. \$1.50. 1429b

Contents: Swamp and dune. Early spring. May flowers. Leafy June. Midsummer flowers. Late summer. The waning year. Characteristics of the flora. Origin of the flora. List of species.

Note: Descriptive notes on the flora throughout the year in an area in which the vegetation is still in a state of transition and varies with the season. The work presents a view of the flora which may be used as a comparison in subsequent years, and covers all the species which play a conspicuous part in the appearance of the region, which is limited to the dune country near the head of Lake Michigan about 60 miles southwest of Chicago and known as the Marseilles moraine.

ESSAYS IN GEOBOTANY in honor of William Albert Setchell, edited by T. H. Goodspeed. Berkeley, Calif.: University of California Press, 1936. 319 p. illus. 22 cm. \$2.50. 1429c

Contents: Portrait of William Albert Setchell, by Peter Van Valkenburgh. William Albert Setchell: a biographical sketch, by T. H. Goodspeed. The rate of plant migration, by O. W. Arrhenius. The origin of *Crepis* and related genera, with particular reference to distribution and chromosome relationships, by E. B. Babcock. The succession and distribution of Cenozoic floras around the northern Pacific basin, by R. W. Chaney. The origin of the desert climax and climate, by F. E. Clements. The strand and dune flora of the Pacific Coast of North America: a geographic study, by W. S. Cooper. The genetic phytogeography of the southwestern Pacific area, with particular reference to Australia, by Ludwig Diels. The role of the terrestrial alga in nature, by F. E. Fritsch. The plant as a metabolic unit in the soil-plant system, by D. R. Hoagland. Malaysian phytogeography in relation to the Polynesian flora, by E. D. Merrill. Plant communities of the world, by Eduard Rübel. Antarctic plants in Polynesia, by Carl Skottsberg. The published writings of William Albert Setchell.

LAESSLE, ALBERT MIDDLETON

The plant communities of the Welaka area, with special reference to correlations between soils and vegetational succession. Lake City, Fla.: University of Florida, 1942. 143 p. illus. 25 cm. (University of Florida publication. Biological science series. Vol. iv, no. 1) Paper, \$1.50. 1429d

Contents: Introduction. History of the Welaka area. Geology. Phytogeography. Climate. Soils. Vegetation and vegetational associations. Ecological distribution of the vascular plants. Succession. Summary. References cited. Index.

Note: A study of the specimens of all the vascular plants found on the University of Florida Conservation Reserve, a 2180-acre tract south of the village of Welaka, Putnam county, Florida, made between 1939 and 1941. A total of 750 species were studied with special reference to their diverse ecological or seasonal variations, the quality of the soil, and the successional relationships and other associations. Thirty-seven titles are listed in the bibliography.

McDOUGALL, WALTER BYRON

Plant ecology. Third edition, thoroughly revised. Illustrated with 119 engravings. Philadelphia: Lea and Febiger, 1941. 285 p. illus. 24 cm. \$3.00. 1429e

Contents: Introduction. The ecology of roots. The ecology of stems. The ecology of leaves. Symbiosis—disjunctive. Pollination. Reciprocal nutritive disjunctive symbiosis. Social conjunctive symbiosis. Physical factors: Light. Heat. Air. Soil. Water. Growth habits of plants. Plant communities. The structure and classification of plant communities. Plant succession. Typical examples of plant succession. Phenology. The distribution of plant communities in the United States. Applied ecology. Appendix. Index.

Note: A textbook covering the entire field of plant ecology for use in college courses in botany and agriculture. In the third edition, a larger amount of space is devoted to a discussion of symbiotic phenomena. Emphasis is upon brevity, conciseness, and readability consistent with accuracy. The appendix contains suggestions on laboratory and field work and there are numerous references at the end of each chapter.

MARTIN, EMMETT VIRGIL, AND FREDERIC E. CLEMENTS

Adaptation and origin in the plant world: I, Factors and functions in coastal dunes. Washington, D.C.: Carnegie Institution of Washington, 1939. 107 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 521) Paper, \$0.50. 1429f

Contents: Introduction. Analysis of the dune habitat. Phytometer measurements. Transpiration rates of native species. Structural relations. Correlations. Bibliography. Text figures. Tables. Plates.

Note: The first of a projected series of ecological investigations bearing on plant adaptation and origin of new forms partly as a result of environmental conditions. The present paper summarizes the results of investigations in three principal habitats, namely, a control garden located in the outskirts of the city of Santa Barbara, and two different sites in the sand dunes located in a small complex 12 miles west of Santa Barbara. The climatic factors measured were air temperature, relative humidity, wind velocity, radiation, rainfall, and the summation of these expressed as rate of evaporation. Transpiration measurements made on the various plants are summarized and analyzed. There are a number of statistical charts and a bibliography of 59 references to the world literature of the subject.

WEAVER, JOHN ERNEST, AND FREDERIC E. CLEMENTS

Plant ecology. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 601 p. illus. 23 cm. (McGraw-Hill publications in the botanical sciences; E. W. Sinnott, consulting editor) \$5.00. 1429g

Contents: Vegetation; its origin, development, and structure. Methods of studying vegetation. Plant succession. The units of vegetation. Initial causes of succession. Migration, ecesis, and aggregation. Competition and invasion. Soil in relation to plant development. Reaction and stabilization. Coaction and conservation. Relation of under-ground plant parts to environment. Humidity, wind, and evaporation. Temperature. Light. Plant response as a measure of environment. Adaptation to water. Plant and plant communities as indicators. Climax formations of North America.

Note: A comprehensive textbook for students of plant ecology and a guide for workers in related fields, written from the standpoint of development, instrumentation, and experiment. The book discusses the intimate relations between plants or groups of plants and their environment—the relations of plant to habitat, whether the latter be natural or modified by cultivation. Experiments and exercises for greenhouse and laboratory are outlined in detail and field studies are suggested. A long bibliography is included.

History

MERRILL, ELMER DREW

A commentary on Loureiro's "Flora cochinchinensis." Philadelphia: The American Philosophical Society, 1935. 445 p. 29 cm. (American Philosophical Society. Transactions. New series, Vol. xxiv, part II, June, 1935) Paper, \$4.00. 1429h

Contents: Introduction. Certain pre-Linnaean publications. Certain post-Linnaean publications. The bearing of the international code on the present problem. Loureiro and his work. The scope of Loureiro's and Blanco's floras. Various opinions of Loureiro's work. Loureiro's herbarium material. Special publications on Loureiro's work. Special bibliography consisting of papers based largely or in part on Loureiro's descriptions and specimens together with certain biographical references. Loureiro's genera. New generic names based wholly or in part on Loureiro's descriptions. Loureiro's treatment of Linnaean genera. Loureiro's species. The bearing of local names on the interpretation of Loureiro's species. Concluding remarks. Commentary. Index to native names (mostly Anamese and Chinese). Index to Latin names.

Note: A detailed, annotated presentation of the *Flora cochinchinensis* by the 18th century Portuguese botanist, Joao de Loureiro, S.J., which was first published at Lisbon in 1790. Under each species references are given to other writings on the plant.

REED, HOWARD SPRAGUE

580.9
p23A A short history of the plant sciences. Waltham, Mass.: Chronica Botanica Company, 1942. 320 p. illus. 27 cm. (A new series of plant science books, edited by Frans Verdoorn. Vol. VII.) \$5.00. 1430

Contents: Introduction. Gardeners and herbalists of antiquity. The nascent period, from the sixth century B.C. to the end of the second century A.D. The retrogressive period, from the beginning of the third to the end of the twelfth century. The nascent period, from the beginning of the thirteenth to the end of the sixteenth century. The seventeenth century. The eighteenth century. Gardens and other things. Plant geography in the nineteenth century. Morphology. Cytology. The water economy of plants. The fixation of carbon by plants. The assimilation of nitrogen. The fixation and metabolism of nitrogen. Plant nutrition. Mineral constituents in metabolism. Mycology. Plant pathology. Significant names in the history of botanical science. Index.

Note: This history of botany is intended for the average graduate student and others of similar educational background. It attempts to give a readable account of the growth of the plant sciences from early times to the present. The discovery and domestication of plants, ancient records, voyages and discoveries are discussed with reference to the progress of the sciences, and to the growth of specialization and the formation of scientific societies and research institutions throughout the world. The progress in various provinces of botany since the beginning of the twentieth century receives particular attention. References are given at the end of each chapter.

RODGERS, ANDREW DENNY, III

American botany, 1873-1892; decades of transition. Princeton: Princeton University Press, 1944. 340 p. illus. 24 cm. \$3.75. 1431

Contents: Asa Gray—the great years begun. Government surveys and explorations. Paleobotany included. Other western explorations in North America. Canada. North Carolina and Florida. The Hooker-Gray expedition to the West. Other southern

and new explorations in Mexico. Engelmann and Parry in Oregon and California. Gray goes to Europe. The development of morphology. Gray and western botany. Lesquereux and the development of North American paleobotany. Western and eastern coal floras. The "new botany." Completion of Engelmann's work. American botanical laboratories extended. Agricultural experimentation. The controversy of Green with Gray. Mexican, Central and South American explorations. Gray's last years. Another generation of American botanists nears the end. A new era in North American botany begun. Acknowledgments. Index.

Note: An analytic and synthetic interpretation of events occurring chiefly in the field of North American botany during two decades of the last century. Attention is centered on the work of the botanists who drew their inspiration from the dominant figure of the period: Asa Gray. Study of the work of Leo Lesquereux and George Engelmann is also completed. For the general reader with botanical interests.

Nomenclature

AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE

Standardized plant names. Second edition. A revised and enlarged listing of approved scientific and common names of plants and plant products in American commerce or use. Prepared for the American Joint Committee on Horticultural Nomenclature by its editorial committee, Harlan P. Kelsey and William A. Dayton. Harrisburg, Pa.: J. Horace McFarland Company, 1942. 675 p. 23 cm. \$10.50. 1432

Note: An official list designed to aid in bringing about so far as practicable the consistent use of a single standardized scientific name and a single standardized common name for every tree, shrub, and plant in American commerce or use, and to establish a well-organized mechanism for the registration and identification of horticultural varieties and the adoption of standard rules of nomenclature for the guidance of those naming horticultural varieties. Some of the features of the earlier editions which are retained in the present volume are the disuse of capital initials for all species and botanical varieties, the changing of the double "ii" ending to single "i," the adoption of one standard common name for each plant, and the consolidation of compound names, eliminating the hyphen. The innovations of the 1942 edition include a pronunciation guide, the use of new symbols for the clons and polybrids, a short glossary, and a list of 720 new forest tree names as approved by the United States Forest Service.

BAILEY, LIBERTY HYDE

How plants get their names. New York: The Macmillan Company, 1933. 209 p. illus. 20 cm. \$2.50. 1433

Contents (abridged): On my table. Linnaeus. Identification. Rules of nomenclature. The names and the words.

Note: Beginning with the background of plant names and family relationships in plant names, the author offers a sketch of the systems in use before Linnaeus' time and the classification schemes that were given to botany by Linnaeus. The relation of the classification systems of Ray and Tournefort are analyzed in their relation to the Linnaean system. The different systems of nomenclature, binomials, and errors in identification are explained. Accounts of the reason for existing names of representative cultivated plants are told in a narrative rather than a technical way. The last part of the book comprises extensive lists of generic names and specific names with their meaning and pronunciation.

Morphology and Taxonomy

CAMPBELL, DOUGLAS HOUGHTON

The evolution of the land plants (Embry-

ophyta). Stanford University: Stanford University Press, 1940. 731 p. illus. 23 cm. \$6.50. 1433a

Contents: Introduction. Classification of the Embryophyta. The gametophyte. The sporophyte. Bryophyta—Anthocerotales, Hepaticales: Sphaerocarpaceae, Marchantiales, Jungermanniales. Calobryales. Musci, true mosses. The first vascular plants—Psilophyta. Lycopodiaceae (Lycopodiaceae). Selaginellaceae. Fossil lycopods. Equisetaceae (Articulatae). Filicineae—Eusporangiateae: Ophioglossales. Eusporangiateae: Marattiales. Isoetales. Leptosporangiateae. Eufilicineae. Osmundaceae, Gleicheniaceae, Matoniaceae, Dipteridaceae, Schizaeaceae. Hymenophyllaceae. Heterosporous Leptosporangiateae. Heterosporous and the seed habit. Gymnosperms—Cycadophyta (Cycadales, Bennettitales): Cordaitales. Ginkgoales. Coniferales. Gnetales. Angiosperms—Anthophyta. Monocotyledons. Dicotyledons. Index.

Note: A detailed account of the comparative morphology and evolution of all the thallophytes. The text is supplemented with numerous figures and the account of each group is followed by a bibliography of the more important botanical works. For teachers, advanced students, and research workers in botany.

CLUTE, WILLARD NELSON

The common names of plants and their meanings. Second edition. Indianapolis, Ind.: Willard N. Clute and Company, 1942. 164 p. 22 cm. \$3.00. 1433b

Contents: Whence came our plant names. The technical names. Our first plant names. Indian names. Pioneer names. The contribution of ignorance. Manufactured names. Transferred names. Saints and heroes. Plants named for demons. Plants named for animals. Plants named for serpents. The banes. Medicinal plants. Hyphenated names. Imported names. Index.

Note: Stories of many of the curious names of plants, such as samphire, St. John's wort, and dog-tooth violet, of the 55 plants that are named for the devil, and of numerous plants named by or for the Indians of North America are outlined in this book for the general reader and botanist. About 600 common names, chiefly of wild plants, are treated. The principal change in the second edition is the altering of the botanical names to conform with Bailey's *Hortus second*, New York, 1941 (see Index).

EAMES, ARTHUR JOHNSON

Morphology of vascular plants, lower groups (Psilophytales to Filicales). New York: McGraw-Hill Book Company, Inc., 1936. 433 p. illus. 23 cm. (McGraw-Hill publications in the agricultural and botanical sciences, E. W. Sinnott, consulting editor) \$4.00. 1433c

Contents: Lycopodiaceae. Club mosses. Selaginellaceae. Small club mosses. Isoetales. Quillworts. Psilotaceae. Equisetaceae. Horsetails. Filicineae. Ferns. Ophioglossaceae. Adder's-tongue ferns. Marattiaceae. Marattiaceous ferns. Filicales. Leptosporangiate ferns. Osmundaceae, Gleicheniaceae, Schizaeaceae. Marsileaceae. Water ferns. Cyatheaceae, Dicksoniaceae, Polypodiaceae. General discussion and summary for ferns. Paleobotany and the fossil record. Psilophytales. Lepidodendrales. Calamitales, Hyeniales, Sphenophyllales, Coenopteridales. The plant body, alternation of generations, classification of vascular plants. Index.

Note: A textbook of advanced level covering the morphology and life histories of vascular plants. Emphasis is placed on broad comparative study of the various groups, with the development of a natural classification and of phylogenetic relationships as a goal. Especial attention is given to the more recently acquired information, particularly that concerning fossil groups, and the bearing of these discoveries upon the older view of relationship and upon theories of the nature of the plant body and the relation of gametophyte and sporophyte.

JOHNSON, ARTHUR MONRAD

Taxonomy of the flowering plants. Illustrations by the author. New York: The Century Co., 1931. 864 p. illus. 23 cm. (The Century biological series, R. Hegner, editor) \$7.50. 1433d

Note: This book is a treatment of the technical characteristics by which flowering plants are arranged into classes, orders, genera, and species. The presentation is simple and direct. Part I outlines the nomenclature used, and gives a comprehensive treatment of the history and development of systems of plant clas-

sification. It discusses the general morphology of the flower and its significance in classification. Part II commences with a full discussion of the author's method of approach to the study of classification with concrete examples to illustrate the method. It then gives a classificatory arrangement of the dicotyledons, according to the Engler and Prantl systems, with characters of the major and minor categories and discussions of characters of representative members of each family; and a similar treatment of the monocotyledons. The text includes a bibliography, and a glossary of botanical terms.

Botany of Various Regions

ABRAMS, LE ROY

An illustrated flora of the Pacific states, Washington, Oregon, and California. Stanford University, Calif.: Stanford University Press, 1940-44. 2 v. illus. 27 cm. \$15.00. 1434

Contents (abridged): Volume I, Ophioglossaceae to Aristolochiaceae (ferns to birthworts): Pteridophyta (ferns and fern-allies). Spermatophyta (seed bearing plants): Gymnospermae (gymnosperms). Angiospermae (angiosperms). Index to generic and family names in Volume I. Volume II, Polygonaceae to Krameriaceae (buckwheats to krameries): Choripetalae (continued). Appendix: New species, subspecies, and varieties from the Pacific States described in 1938-1943. Index of genera and families.

Note: The first two volumes of a projected four-volume work designed to furnish an authentic reference book for the use of the trained botanist and for others interested in the native plant life of the Pacific States. The work is patterned after Britton and Brown's *Illustrated flora of the northern United States and Canada*, New York, 1896-98, from which some of the illustrations in the present volumes have been taken. The scope is intended to include every species of fern, flower, tree, and shrub known to grow wild in the Pacific States. The author has attempted to apply an English name to every plant species described, and special attention has also been given to Indian and Spanish-Californian names, while the scientific names of genera and species used are in accordance with the recommendations of the Nomenclature Committee of the Botanical Society of America. The illustrations are reduced black-and-white line drawings in the text. Volume I is a 1940 reprint, with minor corrections, of the first edition of 1923, while volume II was first published in 1944.

BAKER, MARY EVANS (FRANCIS)

Florida wild flowers; an introduction to the Florida flora. Photographs by the author. New edition. New York: The Macmillan Company, 1938. 245 p. illus. 19 cm. \$3.50. 1435

Contents: Preface. Introduction. Explanations. Key. Descriptions of plants. Index.

Note: In this edition of a popular work for amateur naturalists the author has selected 800 of the more common and more interesting herbs, shrubs, and trees native to Florida and has indicated in simple terms their more noticeable characteristics. Common names are given first, followed by names of genera, non-technical description, habits, habitat, and varieties. The nomenclature follows that of the International Code. There are 50 full-page photographs.

BLAKE, SIDNEY FÖY, AND ALICE C. ATWOOD

Geographical guide to floras of the world. An annotated list with special reference to useful plants and common plant names. Part I. Africa, Australia, North America, South America, and islands of the Atlantic, Pacific, and Indian Oceans. Washington, D.C.: Government Printing Office, 1942. 336 p. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 401) \$0.75. 1435a

Contents: Introduction. Annotated list of floras and floristic works: Africa, Australasia, Insular floras, North America, South America. Abbreviations of periodicals cited. Author index. Geographical index.

Note: This volume is the first part of an annotated selected list of floras and floristic works relating to vascular plants, including bibliographies and publications dealing with useful plants and vernacular names, and covers all the world except Europe and Asia and the islands closely associated with them. Its aim is to furnish an annotated catalogue of useful floras and floristic works that list or describe the complete vascular flora of any region or locality, inclusive of those in periodical literature, and to include also all publications dealing on the same scale with useful and medicinal plants, vernacular names, and botanical bibliography. Works of the "popular" type and works that are now only of historical value have been omitted. About 3025 titles are included.

BOWERMAN, MARY LEOLIN

The flowering plants and ferns of Mount Diablo, California, their distribution and association into plant communities. Berkeley, Calif.: The Gillick Press, 1944. 290 p. illus. 23 cm. \$3.75. 1435b

Contents: The physical factors of Mount Diablo. The vegetation of Mount Diablo. Correlation between the vegetation, soils, and geology. The content and relationships of the flora. Annotated catalogue of the vascular plants. Literature cited. Index.

Note: This study of Mount Diablo was undertaken primarily for its scientific value. However, in order that it may be of more general use, simple keys to families, genera, and species have been included. Mount Diablo is strategically located both geographically and climatically. Some southern plants find their northern limit there and a few plants from the north reach Mount Diablo but grow no further south. The habitat, altitudinal range, abundance, period of blooming, associated species, and distribution upon the mountain have been independently determined for each species.

BROWN, FOREST BUFFEN HARKNESS, AND ELIZABETH D. W. BROWN

Flora of southeastern Polynesia. I. Monocotyledons. II. Pteridophytes, by Elizabeth D. W. Brown and Forest B. H. Brown. III. Dicotyledons. Honolulu, Hawaii: Bernice P. Bishop Museum, 1931-35. 3 v. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 84, 89, 130. Bayard Dominick Expedition publication nos. 20-22) Vol. I, \$2.00; Vol. II, \$2.00; Vol. III, \$3.00. 1435c

Note: In these monographs the authors report on collections obtained between April, 1921 and September, 1922 in an intensive survey of all the inhabited islands of the Marquesas as well as of many islands visited en route. The discovery of considerable new material in the collections from the latter islands made it necessary to identify numerous extra-Marquesan species and varieties before the systematic position of close relatives in the Marquesas could be determined. These new data are of value not only in respect to taxonomy but also in connection with the ecology of the Pacific floras and problems dealing with the migration of the Polynesians. Bulletin 84 presents an outline of the geology and geography of the Marquesas and of the floral regions of southeastern Polynesia. The native names are given in all three bulletins, and especial attention is paid to the botanical knowledge displayed by the Polynesians, their development of an intensive agriculture which supported dense populations in small areas, and particularly to their system of botanical nomenclature which appears to be an ancient Polynesian derivative and is therefore a well-preserved remnant of the pre-Linnaean botany of the continent.

CARNEGIE INSTITUTION OF WASHINGTON

Botany of the Maya area; miscellaneous papers I-XXI. Washington, D.C.: Carnegie Institution of Washington, 1936-40. 2 v. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 461, 522) Vol. I, paper, \$3.50; cloth \$4.50. Vol. II, paper, \$2.25; cloth, \$2.75. 1436

Contents: Volume I: A method of procedure for field work in tropical American phytogeography based upon a botanical reconnaissance in parts of British Honduras and the Peten Forest of Guatemala, by H. H. Bartlett. Various palmæ coryphæ of Central America and Mexico, by H. H. Bartlett. *Scheelea lundellii*, a new "corozo" palm from the department of Peten, Guatemala, by H. H. Bartlett. New plants from the Yucatan peninsula, by Paul C. Standley. Rusts and smuts from the Yucatan peninsula, by E. B. Mains. Lichens from the Yucatan peninsula, by Joyce Hedrick. Marine Algae from the Yucatan peninsula, by Wm. Randolph Taylor. Enumeration of the Malpighiaceæ of the Yucatan peninsula, by C. V. Morton. The grasses of British Honduras and the Peten, Guatemala, by Jason R. Swallen. The Acanthaceæ of the Yucatan peninsula, by E. C. Leonard. Notes on Dioscoreæ, with special reference to the species of the Yucatan peninsula, by C. V. Morton. A revision of the Mexican and Central American species of smilax, by E. P. Killip and C. V. Morton. Passifloraceæ of the Mayan region, by E. P. Killip. Volume II: The 1936 Michigan-Carnegie Botanical Expedition to British Honduras, by C. L. Lundell. The apocynaceous flora of the Yucatan peninsula, by R. E. Woodson. The Bromeliaceæ of the Yucatan peninsula, by L. B. Smith and C. L. Lundell. The Eriocaulaceæ, Verbenaceæ, and Avicenniaceæ of the Yucatan peninsula, by H. N. Moldenke. The Labiatae of the Yucatan peninsula, by C. Epling. The sedges of the Yucatan peninsula, by H. T. O'Neill. The Melastomaceæ of the Yucatan peninsula, by H. A. Gleason. The Bignoniaceæ of the Maya area, by R. J. Seibert.

Note: A collection of papers covering various aspects of the flora of parts of British Honduras, Guatemala, Yucatan, Mexico, and Central America, including descriptions of new species and reclassification of old species and genera. Each volume may be purchased separately.

CHRISTOPHERSEN, ERLING

Flowering plants of Samoa I-II. Honolulu, Hawaii: Bernice P. Bishop Museum, 1935-38. 2 v. illus. 25 cm. (Bernice P. Bishop Museum. Bulletins 128, 154) Vol. I, \$2.00; Vol. II, \$2.00. 1436a

Note: These two papers constitute a report on a collection of plants made from August to November, 1929 and from June, 1931 to January, 1932, and on other Samoan collections in the Museum not previously studied with access to types, and other plants which can be treated satisfactorily only in herbaria with a general, world-wide scope. The Pandanaceæ were reported on in the Museum's *Occasional papers*, 10 (13), by Martelli, the *Peperomia* in *Bulletin 143*, by Yunker. At the time of publication of Part II, *Peperomia*, *Ficus*, *Urticaceæ* (*Laportea*, *Elatostema*, and *Cypholophus*) were still being studied by specialists. In Part I, 34 species and varieties are described as new to science, and in Part II, 18 species and one variety, while various species are new records for Samoa. With the inclusion of ten new species and records of Pandanaceæ, the total number of species of flowering plants known in Samoa is about 1023.

CHRISTOPHERSEN, ERLING, AND EDWARD L. CAUM

Vascular plants of the Leeward Islands, Hawaii. Honolulu, Hawaii: Bernice P. Bishop Museum, 1931. 41 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 81. Tanager Expedition no. 7) \$1.50. 1437

Contents (abridged): Notes on the vegetation: Nihoa Island, Necker Island, French Frigates Shoal, Gardner Island, Laysan Island, Lisiansky Island, Pearl and Hermes Reef, Midway Island, Kure (Ocean) Island. List of vascular plants. Literature cited.

Note: This paper offers a systematic treatment of the vascular plants, together with notes on the vegetation, of the Leeward Islands, a chain of uninhabited islands and reefs extending northwest from Kauai, the northernmost inhabited island of the Hawaiian archipelago. These islands are either remnants of volcanic cones, coral islets, or coral sand. The exhaustive collections made by the botanists of the Tanager Expedition of 1923 and 1924 form the main body of material for this paper, but data obtained in this region by other collectors have been included.

DEGENER, OTTO

Flora Hawaiiensis; or, The new illustrated flora of the Hawaiian Islands. Waiahua, Oahu, 1937. 1437

Hawaii: The Author, 1933-38. 4 v. Loose-leaf, each vol., \$3.50. 1438

Contents: Introduction and scope. The Hawaiian Islands. Origin and relationship of the Hawaiian flora. Historical sketch of Hawaiian botany. Rules governing botanical nomenclature. Abbreviations of the names of authors. Glossary of botanical terms. Key to families of ferns and fern allies. Key to families of monocotyledonous plants. Key to families of dicotyledonous plants. List of families of vascular plants. Descriptive flora. Index. Maps. Advertisement.

Note: This work is designed to present illustrated descriptions of all the native and foreign ferns and flowering plants growing in the Hawaiian Islands. It gives the common English, Hawaiian, and the scientific name for each plant, as well as the synonym by which it is known in other publications. It states whether the plant is endemic, indigenous, or introduced, the exact range of the plant in the islands, its general range elsewhere, and its present and former uses. It includes keys for the determination of family, genera, and species, maps, and an historical sketch of Hawaiian botany. The work was published in loose-leaf form but with the sheets numbered for arranging with permanent volumes.

GARRETT, ALBERT OSBUN

Spring flora of the Wasatch region. Fifth edition. Salt Lake City, Utah: Stevens and Wallis, Inc., 1936. 244 p. 19 cm. \$1.70. 1438a

Contents: Preface. Key to the families. Spring flora of the Wasatch region: orders. Glossary. Index of scientific names. Index of common names.

Note: A key, for the student, to the plants growing in the Great Basin, Utah, as far south as Manti only. Plants blooming by June 15 have been included. Rules of nomenclature established by the Vienna Congress were followed. This edition is enlarged by 22 pages over the fourth edition.

GENTRY, HOWARD SCOTT

Rio Mayo plants; a study of the flora and vegetation of the valley of the Rio Mayo, Sonora. Washington, D.C.: Carnegie Institution of Washington, 1942. 328 p. illus. 25 cm. (Carnegie Institution of Washington. Publication 527) Paper, \$2.25; cloth, \$2.75. 1439

Contents: Part I, Geography and vegetation: Rivers and tributaries. Mountains. The Barranca region. Geological formations. Climate. Roads and trails: list of localities. Thorn forest. Short-tree forest. Oak forest. Pine forest. Plant habitats. "Island" habitats. Plant census, succession, and use. Part II, Annotated list of plants. List of flora. New species, varieties, and combinations. List of specimens. Bibliography. Index.

Note: The publication briefly describes the vegetation of the Mayo drainage basin and its topographic and climatic features. Detailed statistics of plant population are given for several representative areas. The principal contribution is an annotated list of ferns and flowering plants collected by the author during five years of exploration. Vernacular names and aboriginal uses of the plants are noted. Maps of the area, a gazetteer of localities, and numerous illustrations of vegetation and individual plants are features of the book.

GREY, ROBERT M., AND F. TRACY HUBBARD

List of plants growing in the botanical garden of the Atkins Institution of the Arnold Arboretum at Soledad, Cienfuegos, Cuba. Cambridge, Mass.: Harvard University Press, 1933. 245 p. 27 cm. Paper, \$3.00. 1440

Note: The list gives genera, species, and common names in alphabetical order, with synonymy, original literature, and names of first describers or classifiers, plus a shorter list of genera and species arranged according to families. There are approximately 1,970 species belonging to 921 genera and 165 families, with all nomenclature revised and emended to conform to the International Code and the interpretations of genera and species delimitations current at the time of publication. The names of certain invalid genera have been retained because the earlier use or uses of the name is either obsolete or placed in synonymy, and recently has not been in common usage. Common or vernacular names are also provided.

JEPSON, WILLIS LINN

A flora of California. Illustrated with many original figures. Berkeley, Calif.: University of California, 1909-. Three volumes (12 parts). illus. 25 cm. Paper, \$19.00 per set as of December, 1944 (incomplete). 1441

Contents (abridged): Volume I, Part I: Pinaceae to Taxaceae. Part II: Salicaceae to Urticaceae. Part III: Gnetaceae to Cyperaceae (Cyperus). Gramineae, by A. S. Hitchcock. Part IV: Platanaceae to Portulacaceae (Calyptridium). Part V: Portulacaceae (Calandrinia) to Ranunculaceae (Anemone). Part VI: Cyperaceae (Eleocharis) to Orchidaceae. Part VII: Ranunculaceae (Trautvetteria) to Fumariaceae. Volume II, Parts 1-3: Caprifoliaceae to Cornaceae. Volume III, Part I: Lennoaceae to Convolvulaceae. Part II: Convolvulaceae (Cuscuta concluded) to Solinaceae (Solanum).

Note: As of December, 1944, this work was still in progress, Part VIII of Volume I and part 3 of Volume III being scheduled for future publication. Descriptive flora of spermatophytes are presented, including numerous varieties and forms, with localities, exsiccatae, and references to original literature. There are 451 text-figures and occasional geographical notes accompanying the descriptive notes. A family and generic index is provided with Volume II, which is complete in itself.

JOHNSTON, IVAN MURRAY

The flora of the Revillagigedo Islands. San Francisco: California Academy of Sciences, 1931. 96 p. 25 cm. (California Academy of Sciences. Proceedings. 4th series, Vol. xx, no. 2, November 18, 1931) \$1.25. 1442

Contents: Botanical exploration. Socorro and its flora. San Benedicto. Clarion. General floristics. Origins of the flora. Introduction to the catalogue. Catalogue of the species.

Note: The four uninhabited volcanic islands forming this group lie several hundred miles off the west coast of Mexico. A detailed floristic study of these islands had not been made previously and seemed essential in view of the increased interest that has developed in insular floras and in the problems they present in plant dispersal. This paper presents a critically prepared catalogue of the insular species, and gives such data as bear upon the floristic relationships and origin of the flora of the islands. The study is based on all collections made from these islands, particularly those made during expeditions sent out from the California Academy in 1903 and 1925.

JONES, GEORGE NEVILLE

A botanical survey of the Olympic peninsula, Washington. Seattle, Wash.: Published by the University of Washington, 1936. 286 p. illus. 25 cm. (University of Washington publications in biology. Vol. 5) \$2.00. 1443

Contents (abridged): Introduction. Geography and geology. Climate. The zonal distribution of the vegetation. The geographical relationship of the flora. Life-forms according to the Raunkiaer system. A phyto geographical summary. Botanical exploration. Bibliography. The annotated catalogue of plants. Index.

Note: A study, for the botanist, of an isolated area on the Pacific Coast. It comprises a description of the vegetation with facts about the physical environment, a catalogue of the vascular flora, and a comparison of the flora with that of adjacent areas.

JONES, GEORGE NEVILLE

The flowering plants and ferns of Mount Rainier. Seattle, Wash.: Published by the University of Washington, 1938. 192 p. illus. 25 cm. (University of Washington publications in biology. Vol. 7) Paper, \$1.75. 1444

Contents: Preface. Introduction. Analytical key to the families. Descriptive flora. Appendix: New names and combinations of names. Index.

Note: This is a descriptive systematic account of the flowering plants and ferns of Mount Rainier National Park. Primarily for the botanist, it can also be used by the forester, naturalist, or others with some knowledge of botany. The arrangement of the text follows the conventional plan of botanical manuals.

✓ **LLOYD, CURTIS GATES, AND WALTER H. AIKEN**

Flora of Samoa. Cincinnati: Lloyd Museum, 1934. 113 p. illus. 26 cm. (Lloyd Library and Museum bulletin no. 33. Botany series no. 4) \$1.00 plus \$0.07 domestic postage and \$0.30 foreign postage. 1444a

Contents: Foreword. Preface. Flora of Samoa. Index.

Note: This publication reports a survey of the flora made in the years 1904 and 1905. The notes include technical descriptions and, in many cases, economic uses.

LUNDELL, CYRUS LONGWORTH, AND OTHERS

Flora of Texas. Dallas, Texas: University Press in Dallas, Southern Methodist University, 1942- Ten volumes. illus. 26-27 cm. Paper, \$15.00 per volume. 1445

Contents: Volume 3, Part i: Eriocaulaceae, Avicenniaceae, Verbenaceae, by Harold N. Moldenke. Volume 3, Part ii: Anacardiaceae, by Fred A. Barkley, Cyrillaceae, Aquifoliaceae, by Cyrus Longworth Lundell. Convolvulaceae, genus *Cuscuta*, by Truman C. Yuncker. Volume 3, Part iii: Orchidaceae, by Donovan S. Correll. Volume 3, Part iv: Palmaceae, by Liberty Hyde Bailey. Bromeliaceae, by Lyman B. Smith. Onagraceae, by Philip A. Munz.

Note: The *Flora of Texas* is designed to be a ten-volume publication presenting in one work descriptions of all ferns and flowering plants which grow independently of cultivation within the state. Volumes 1 and 2 will contain the history of botanical exploration, the key to the families, and a catalogue of the species. Volumes 3 through 10 will be devoted to the descriptive flora, treatments of families or individual genera being published in each part without regard to affinities of the groups. The work is available in exchange with other institutions for scientific publications, and the price of the several parts will vary according to size. At present (December, 1944) only Volume 3, parts i to iv inclusive, have been issued.

LUNDELL, CYRUS LONGWORTH

The vegetation of Petén. With an appendix: Studies of Mexican and Central American plants. Washington, D.C.: Carnegie Institution of Washington, 1937. 244 p. illus. 29 cm. (Carnegie Institution of Washington. Publication no. 478) Paper, \$3.50; cloth, \$4.50. 1445a

Contents (abridged): Introduction. Northern Petén. Central Petén savanna country. Southern Petén. Relationship of the Petén flora. Bibliography. Appendix. Plates. Index.

Note: Preliminary classification and description of the vegetation, dealing primarily with the quasi-rain-forest of northern Petén and the denuded savanna country of central Petén, including approximately 1400 species, the known flora of the region. Maya names are recorded for many of the plants. With 37 pages of photographs.

MACBRIDE, JAMES FRANCIS

✓ Flora of Peru. Chicago: Chicago Natural History Museum, 1936-43. 9 v. 23 cm. (Chicago Natural History Museum. Publication nos. 351, 363, 357, 379, 428, 531, 496, 364, and 393. Botanical series. Vol. xiii, part i, no. 1, 3; part ii, no. 1-3; part iii, no. 1; part iv, no. 1; part vi, no. 1-2) Part i, no. 1, \$2.00; part i, no. 3, \$2.00; part ii, no. 1, \$1.50; part ii, no. 2, \$2.25; part ii, no. 3, \$2.50; part iii, no. 1, \$3.50; part iv, no. 1, \$3.00; part vi, no. 1, \$1.50; part vi, no. 2, \$1.50. All paper-bound. 1445b

Note: A comprehensive compilation of the taxonomic data based on the world literature relating to the seed plants of Peru. The work attempts to bring together descriptions of all known Peruvian seed plants and ferns, most of which have been published during the last century. Except as the taxonomic

relationship of the plants listed has already been determined, no effort has been made at a critical disposition of them, and synonyms are therefore not particularly numerous and are mostly the result of transfers and name changes. In the case of widely distributed species usually there are listed only the original name, if it has been transferred, and the synonyms based on Peruvian material. Complete synonymy for such species is available in the reference works cited under each description. The compilation is intended primarily as an aid to the determination of Peruvian plants, while the monographs cited supply such information as exists regarding relationships. The descriptions are adapted from the original publication or reference work. Part i, no. 2, and Part v have not as yet been published. There is an index of genera and species in each volume.

MADISON, HAROLD LESTER

Wild flowers of Ohio. Cleveland, O.: The Cleveland Museum of Natural History, 1938. 190 p. illus. 17 cm. (Cleveland Museum of Natural History. Pocket natural history no. 7. Botanical series no. 1.) \$1.50. 1445c

Note: A concise list of 825 species of flowers native to Ohio, giving common name, scientific name, measurements, color, habitat, and flowering season, together with a 1 x 1 1/4" line drawing of each plant described. All related species are grouped together for ready reference. There is an index and a glossary. For the amateur naturalist and home gardener.

MERRILL, ELMER DREW

An enumeration of plants collected in Sumatra by W. N. and C. M. Bangham. With 14 plates. Jamaica Plain, Mass.: The Arnold Arboretum of Harvard University, 1934. 178 p. illus. 25 cm. (Arnold Arboretum of Harvard University. Contributions. viii) Paper \$2.50. 1445d

Contents: Introduction. Enumeration of the plants collected. Index.

Note: This list is based upon the collection of 600 numbers of Sumatran plants acquired by the Arnold Arboretum in 1932, most of the material having been obtained at medium and higher altitudes and largely in the primary forests. The collection contains a high percentage of species of special interest, and a minimum of the common, widely distributed, well-known species that form the bulk of the vegetation at low and medium altitudes. About 484 species are represented; of these, about 105 are known only from Sumatra, and 38 species are indicated as new.

MERRILL, ELMER DREW

Polynesian botanical bibliography, 1733-1935. Honolulu, Hawaii: Bernice P. Bishop Museum, 1937. 194 p. 25 cm. (Bernice P. Bishop Museum. Bulletin 144) \$3.00. 1445e

Note: This work represents a second, and much more complete, edition of the author's *Bibliography of Polynesian botany* published in 1924 by the Museum in Bulletin 13. The present work lists 2600 titles as against 1300 titles in the first edition, the additions consisting of papers published between 1923 and 1935 and also references from the older literature previously overlooked. An innovation adopted is the inclusion of brief abstracts indicating the general scope of the papers which will enable the investigator to judge of their relative values. The region covered is essentially that of the original work, the islands in the Pacific basin lying between 30° North latitude and 30° South latitude, excluding the Bonin Islands. Juan Fernandez, New Caledonia, Lord Howe, Norfolk, the Kermadec Islands, and the New Hebrides are also included.

MORTON, CONRAD VERNON

Taxonomic studies of tropical American plants. Washington, D.C.: Government Printing Office, 1944. 86 p. 24 cm. (Smithsonian Institution. United States National Museum. Con-

tributions from the United States National Herbarium. Vol. 29, part 1) Paper, \$0.25.

1445f

Contents: Introduction. The West Indian species of *Columnea*. The West Indian species of *Alloplectus*. New species of *Besleria*. A revision of *Cremosperma*. New species of Guatemalan Gesneriaceae. Some South American species of *Solanum*. Notes on *Bouchetia*. A list of Uruguayan petunias, with one new species. The genus *Hybanthus* in continental North America. The Mexican herbaceous species of *Aeschynomene*. Notes on *Phaseolus*. List of new species and varieties. List of new names and new combinations. Index.

Note: This "Bulletin of the United States National Museum" deals with tropical American flora and is devoted primarily to groups on which the author had worked at intervals for a number of years—the Gesneriaceae and Solanaceae and the genus *Hybanthus* of the Violaceae, together with a few notes on Leguminosae.

NEHRLING, HENRY

The plant world in Florida; from the published manuscripts of Dr. Henry Nehrling; collected and edited by Alfred and Elizabeth Kay; sponsored by the Garden Club of Palm Beach. New York: The Macmillan Company, 1933. 304 p. illus. 24 cm. \$3.50.

1445g

Contents: Preface, by Dr. David F. Fairchild. Editors' note. Dr. Nehrling describes himself. Climate and soil of Florida. Shade trees of Florida. Flowering shrubs. Palms. Rubber or fig trees (genus *Ficus*). Orchids and other epiphytes. Flowering vines. Bulbous and tuberous-rooted plants. Ferns. Bamboos and ornamental grasses. Cacti. Foliage plants. Appendix. Abbreviations of authorities quoted. Glossary. Index.

Note: A descriptive catalogue for the amateur as well as for the professional botanist, together with accounts of some of the author's adventures and discoveries in his Florida gardens at Gotha and Naples, Fla. The cultural and artistic value of plants is emphasized in the descriptive notes, which also disclose the author's personal philosophy of nature. There are 26 photographs.

NORTH AMERICAN FLORA. H. A. Gleason, H. W. Rickett, and Fred J. Seaver, editorial committee. New York: The New York Botanical Garden, 1907-. Thirty-four volumes. 28 cm. Paper, \$146.90 per set as of January, 1945.

1445h

Note: The monumental *North American flora* is designed to present in one work descriptions of all plants growing, independent of cultivation, in North America, here taken to include Greenland, Central America, the Republic of Panama, and the West Indies, except Trinidad, Tobago, Guacá and other islands off the north coast of Venezuela, whose flora is essentially South American. The work is still in the process of completion as of January, 1945, although 92 of the separate parts which comprise the 34 volumes are now available either singly or as a set. It is planned to issue parts as rapidly as they can be prepared, the extent of the work making it possible to commence publication at any number of points. The completed work will form a series of volumes with the following sequence: Volume 1, Myxomycetes, Schizophyta; Volumes 2 to 10, Fungi; Volumes 11 to 13, Algae; Volumes 14 and 15, Bryophyta; Volume 16, Pteridophyta and Gymnospermae; Volumes 17 to 19, Monocotyledones; Volumes 20 to 34, Dicotyledones. Four or more parts are required for each volume, the subscription price for all parts published prior to 1936 being fixed at \$1.50 for each part; for later parts it is approximately two cents per page, or the entire set published thus far may be purchased at the subscription price quoted above. The material has been prepared by a large number of specialists in each of the orders, classes, and families described. Original citations, synonymy, characters, measurements, type locality, distribution, references to previously published illustrations, and special notes are given in the systematic descriptions. There are no illustrations. Indexes have been prepared for Volumes 7 (15 parts) and 9 (seven parts) which are the only complete volumes as of January, 1945.

OVER, WILLIAM HENRY

Flora of South Dakota. An illustrated check-list of flowering plants, shrubs, and trees of

South Dakota. Vermillion, S.D.: The University of South Dakota, 1932. 161 p. illus. 22 cm. (South Dakota. University. Museum. Natural history studies. No. 3) \$0.25.

1446

Contents: Pteridophyta. Spermatophyta: Gymnospermae. Angiospermae. Monocotyledones. Dicotyledones. Index.

Note: A check list of the flora arranged in the form of a systematic description, covering all the species known to grow in the state.

PALMER, ERNEST JESSE, AND JULIAN STEYER-MARK

An annotated catalogue of the flowering plants of Missouri. St. Louis, Mo.: The Missouri Botanical Garden, 1935. 383 p. illus. 25 cm. (Missouri Botanical Garden. Annals. Vol. xxii, no. 3) Paper, \$5.00.

1446a

Note: The principal sources drawn upon in compiling this catalogue and in working out the distribution of species were first, the collections in the herbarium of the Missouri Botanical Garden, the Gray Herbarium, the Arnold Arboretum, the National Herbarium (for the grasses), and other public and private collections; second, lists and monographs in which Missouri specimens are cited; and third, the unpublished notes and correspondence of the two authors, supplemented by notes and correspondence from other collectors. Free use has also been made of manuals and general works on botany, and a list of 300 titles on the phanerogamic botany of Missouri which have been consulted is given in the bibliography. A number of new combinations in plant names have been made; there are one new species, three new varieties, and six new forms described, and names are proposed for four hybrid oaks. The index lists valid names, synonyms or otherwise invalid names, new species varieties, forms, hybrids, and new combinations, and family names. There are six plates of photographs. A 20-page supplementary paper has been prepared by the same authors, entitled *Additions, corrections, and revisions to the Annotated catalogue of the flowering plants of Missouri*, St. Louis, Mo., 1938, and published as part of its *Annals*, Volume xxv, no. 3.

PEATIE, DONALD CULROSS

Flora of the Indiana dunes, a handbook of the flowering plants and ferns of the Lake Michigan coast of Indiana and of the Calumet district. Chicago: Field Museum of Natural History, 1930. 432 p. illus. 19 cm. \$2.00.

1447

Contents: List of illustrations. Preface. Flora of the Indiana dunes. Plant hunting in the dunes. How to use a key. Analytical key to the families. Systematic list of the families, genera, and species. Glossary. Index.

Note: This guide for the beginner and student is written in simplified language. It contains more than 1300 species of flowering plants and ferns and is arranged primarily to assist in field identification. The descriptions are based largely on easily visible characters. The region covered contains sand-dunes, lagoons, bogs, swamps, strands, lakes, slow rivers, and prairies.

PECK, MORTON EATON

A manual of the higher plants of Oregon. Portland, Ore.: Binford and Mort, 1941. 866 p. illus. 22 cm. \$5.00.

1448

Contents: Introduction. Plant areas of Oregon. Numerical summary of groups. Key to the higher groups. Descriptive flora. Glossary. Illustrations of plant parts. Explanation of abbreviations of authors' names. Index.

Note: A manual for those students of higher plants who are interested in the classification and naming of species, but who have neither time nor technical training for detailed taxonomic study. The work is based upon the herbarium of Willamette University, collected through many years from nearly every portion of the state. Data provided for each specimen described includes scientific and popular names, a general description, measurements, general range, and conditions under which found. Illustrations are used sparingly.

RAUP, HUGH MILLER

Phytogeographic studies in the Peace and upper Liard River regions, Canada, with a catalogue of the vascular plants. With nine plates and a map. Jamaica Plain, Mass.: The Arnold Arboretum of Harvard University, 1934. 230 p. illus. 25 cm. (Arnold Arboretum of Harvard University. Contributions. vi) Paper, \$2.50. 1448a

Contents: Introduction. Acknowledgments. Historical sketch. Narrative of the Arnold Arboretum expedition, 1932. Geology and physiography. Climate. Geographic studies of the vegetation in the Peace River basin. Bibliography. Catalogue of the vascular plants of the Peace and upper Liard River regions. Explanation of the plates. Index.

Note: This monograph endeavors to gather together in one place as much as possible of the earlier information on floristic and geographic studies in an area where relatively little botanical research has thus far been made. The region is in the zone of close interrelationship between the American arctic and alpine floras, and should throw new light on the origin and development of each. The systematic catalogue, which occupies half of the present work, lists 784 different plants covering 754 species, 278 genera, and 74 families, including the Pteridophyta, Gymnospermae, Monocotyledoneae, Archichlamydeae, and Metachlamydeae. One hundred seven references are given in the bibliography.

RYDBERG, PER AXEL

Flora of the prairies and plains of central North America. New York: New York Botanical Garden, 1932. 969 p. illus. 23 cm. \$5.50. 1449

Contents: Abbreviations, signs, and measurements. Pteridophyta. Spermatophyta: Gymnospermae, Angiospermae, Monocotyledones, Dicotyledones. Errata. Summary. Abbreviations of authors' names. Glossary. Index.

Note: A standard manual for the botanist. It covers fully the states of Kansas, Nebraska, Iowa, Minnesota, South Dakota, and North Dakota, and the Canadian provinces, Manitoba, the southern part, and Saskatchewan, the southeastern part. Less fully, it covers the prairie regions of Illinois, southern Wisconsin, northern Missouri, eastern Colorado, eastern Montana, and southern Saskatchewan. The editorial work was completed by Marshall A. Howe.

SMALL, JOHN KUNKEL

Manual of the southeastern flora; being descriptions of the seed plants growing naturally in Florida, Alabama, Mississippi, eastern Louisiana, Tennessee, North Carolina, South Carolina, and Georgia. New York: Published by the Author, 1933. 1554 p. illus. 23 cm. \$10.50. 1449a

Contents: Preface. Introduction. Key to the orders. Descriptive flora. Appendix. Genera and species published in this flora. Table of orders and families. Index.

Note: This extensive volume is designed to record and describe the species of native and naturalized flowering plants known by the author to grow naturally in the southeastern United States south of the northern boundaries of North Carolina and Tennessee and east of the Mississippi river. The species are grouped in genera, families, and orders, and are so arranged and described that they may be identified by means of the analytical keys and synopses given under each group, mainly by a study of the morphology of the flowers and fruits. The arrangement of the natural plant families is essentially that of Engler and Prantl's *Die Natürlichen Pflanzenfamilien*, Leipzig, 1887-1915, although in a few cases modifications of the sequence there adopted has been desirable. The descriptive material has been made very short, and a drawing showing a flower and its gross morphology and a fruit of the first species under each genus, is also given. The present manual, which includes 259 new genera and species, supplants in part the author's *Flora of the southeastern United States*, second edition, New York, 1913. The Pteridophyta are intentionally omitted from the current work.

STANDLEY, PAUL CARPENTER

The flora of Barro Colorado Island, Panama. With 21 plates and a map. Jamaica Plain, Mass.: The Arnold Arboretum of Harvard University, 1933. 178 p. illus. 25 cm. (Arnold Arboretum. Contributions. v) Paper, \$3.50. 1449b

Contents: Introduction. Enumeration of the plants collected on the island. Bibliography. Index.

Note: The greater part of Barro Colorado Island is overgrown with dense forest and jungle, which for many years have been little disturbed. At the time of publication it was as nearly primeval as any flora in the immediate vicinity. The present paper lists a total of 1,259 species, based upon the work of earlier collectors as well as on the author's own field researches. The classification is founded upon herbarium specimens determined mainly by the author. Place of publication of the first formal report on each species is also given.

STANDLEY, PAUL CARPENTER

Flora of Costa Rica. Chicago: Chicago Natural History Museum, 1937-38. 4 v. 24 cm. (Chicago Natural History Museum. Publication nos. 391, 392, 420, and 429. Botanical series. Vol. xviii, parts 1-4) Paper, \$2.50 each part. 1449c

Contents: Introduction. Plant geography. Atlantic *tierra caliente*. Pacific *tierra caliente*. Temperate region (*tierra templada*). Cold region (*tierra fria*). Relationships of the Costa Rican flora. Botanical exploration in Costa Rica. Plan of the flora. Acknowledgments. Bibliography. Systematic list of families, genera, and species.

Note: The bulk of the work is a systematic annotated list of the phanerogamic plants of Costa Rica. For each family there have been cited all Costa Rican species known to the author, with indication of their distribution within and outside the country. For names based on Costa Rican material there is cited the place of publication, and for such species there are cited also their synonyms with place of publication. Type collections of synonyms are cited in parentheses after the citation of the synonym. Cultivated plants are included in the list so far as they are known, and all the species known or reported for Cocos Island are also listed. The bibliography lists 13 publications held to be the most important or useful for study of the Costa Rican flora, and there is a detailed index.

STANDLEY, PAUL CARPENTER

Flora of the Lancetilla valley, Honduras. Chicago: Chicago Natural History Museum, 1931. 418 p. illus. 23 cm. (Chicago Natural History Museum. Publication 283. Botanical series. Vol. x) Paper, \$3.00. 1449d

Contents: Introduction. Geography and inhabitants. Climate. Vegetation. Relationships of the flora. Economic plants. Vernacular names. Exploration of the region. Plan of the flora. Acknowledgments. Annotated list of genera and species. Index.

Note: Following an introductory section on the general floristic and climatic conditions of the region, this monograph presents an annotated systematic description of genera and species based almost wholly upon the collections made by the author in 1927-28, amounting to more than 3,000 numbers of phanerogams and cryptogams. The list is intended to include all the plants of the region about Lancetilla valley and the port of Tela, while the descriptions given under the families and genera are intended to cover the Honduran species alone. Citations of the original literature are not included. There are 68 plates of photographs.

STANDLEY, PAUL CARPENTER

Flora of Yucatan. Chicago: Chicago Natural History Museum, 1930. 338 p. illus. 24 cm. (Chicago Natural History Museum. Publication 279. Botanical series. Vol. iii, no. 3) Paper, \$2.00. 1449e

Note: An annotated systematic description of the plants of the Yucatan peninsula exclusive of the colonies of British Honduras and Petén. In the list are enumerated not only the native and naturalized plants, but also those in cultivation. One hundred twenty-nine families, 667 genera, and 1,263 species are included. There is a list of unidentified vernacular names appearing in various publications relating to Yucatan, and a bibliography of 187 articles and monographs devoted primarily to the flora of the region. The present work is in a sense a conclusion of the series of publications by the late Charles F. Millsbaugh, whose collections and accumulated data form the basis of the present descriptions.

STANDLEY, PAUL CARPENTER, AND SAMUEL J. RECORD

The forests and flora of British Honduras. In cooperation with the Conservator of Forests and the Agricultural Officer of the Colony. R. E. Dahlgren, editor. Chicago: Field Museum of Natural History, 1936. 432 p. illus. 24 cm. (Field Museum of Natural History. Publication 350. Botanical series, Vol. xii, January, 1936) Paper, \$2.25. 1449f

Contents: Introduction: Geography. Geology. Soils. Climate. Population. Agriculture, by H. P. Smart. Part i, The forests: Introduction. Forest types. Forestry. Timbers of economic importance. Woods for paper pulp. The cohune palm. Chicle gum industry. List of economic trees and their uses. Bibliography. Part ii, The flora: Relationships of the flora. Collections studied. Plan of the systematic list. Common names. Annotated list of genera and species. Additions. Index.

Note: The first part of this monograph presents a detailed description of the various types of forests comprising the vegetation of the country, including mangrove forests, savannahs, pine forests, high rain forests, and secondary rain forests, together with an outline of the forestry program and the economic value of timber produced in British Honduras. The major portion of the book consists of a systematic description of the endemic plants based primarily upon the collections in the herbarium of the Field Museum of Natural History. Citations of the place of publication have been provided only for the species based originally on British Honduras material.

STANDLEY, PAUL CARPENTER, AND JULIAN A. STEYERMARK

Studies of Central American plants. Chicago: Chicago Natural History Museum, 1940-44. 5 v. illus. 23 cm. (Chicago Natural History Museum. Publication nos. 480, 482, 524, 549, and 556. Botanical series. Vol. 22, no. 4-5; Vol. 23, no. 1-3) Part 1, \$0.75; part 2, \$0.50; part 3, \$0.15; part 4, \$0.50; part 5, \$0.30. All paper-bound. 1449g

Note: A continuing series published at irregular intervals giving systematic descriptions of new or otherwise noteworthy species of plants from Guatemala and adjacent countries, based on a collection of 27,000 specimens of phanerogamic and cryptogamic plants obtained by expeditions from the Museum during 1938-1940. In addition, there are included descriptions of numerous new species and notes regarding rare plants from collections made more recently in the republic of Panama. A considerable number of new species are described for the first time in the present work.

STEYERMARK, JULIAN ALFRED

Spring flora of Missouri. St. Louis: Missouri Botanical Garden; Chicago: Chicago Natural History Museum, 1940. 582 p. illus. 23 cm. Paper, \$3.00. 1449h

Note: Intended for use by everyone interested in plants, particularly the beginner, the primary purpose of this illustrated descriptive catalogue is to acquaint the people of Missouri and surrounding states with the native flowers which are in bloom on or before June 1. The selection of this date was made first

because most schools close for vacation at this time, and second, most of the typical spring wild flowers have passed the climax of their blooming season by this date. An attempt has been made to express the descriptive matter in easily understood language and to avoid the use of technical botanical terms wherever possible. The characters used in the keys for separating the groups of plants are based on obvious and easily observed features, such as color, arrangement of flower, size, leaves, habit, and similar distinguishing qualities. Only those common English names in general usage have been used, and these precede the scientific names in all cases. There are 163 plates of figures, a glossary, a list of English meanings of scientific specific names, and a general index.

STEYERMARK, JULIAN ALFRED

Studies of the vegetation of Missouri. Chicago: Chicago Natural History Museum, 1940-41. 2 v. illus. 23 cm. (Chicago Natural History Museum. Publication nos. 485 and 491. Botanical series. Vol. ix, no. 5-6) Paper, Part i, \$1.00; part ii, \$1.25. 1449i

Contents: Part i, Natural plant associations and succession in the Ozarks of Missouri: Introduction. Natural plant associations and succession in the Ozarks of Missouri. Subclimax stages in the Ozarks. Plant indicators of acidity and alkalinity. Ecological variations induced by burning, logging, clearing, and other unnatural causes. Examples taken from specific areas showing particular stages within an association. Part ii, Phanerogamic flora of the fresh-water springs in the Ozarks of Missouri: General discussion of Ozark springs. Description of the chief springs in the Ozarks.

Note: This two-part monograph records the author's observations and conclusions on the ecological and phytogeographical conditions prevailing in the Ozark flora of Missouri. The first part of the work presents a critical study of the natural plant successions and the related variations in the environment and past geological history of the region. The effect upon plants in the Ozarks of the presence or absence of limestone in the soil is discussed at length. Part ii describes the vegetation of the Ozark springs as a distinct unit in the flora of the state, including a list of the various species found in each spring with the dominant species noted in each case. There are 16 full-page distribution maps and over 50 photographs.

TIDESTROM, IVAR, AND SISTER TERESITA KITTELL

A flora of Arizona and New Mexico. Washington, D.C.: The Catholic University of America Press, 1941. 897 p. illus. 23 cm. \$6.00. 1450

Contents: Some of the early explorers in Arizona and New Mexico. Systematic treatment of the vascular plants. General key. Annotated catalogue. Index.

Note: The territory covered in this annotated catalogue includes, in addition to the states mentioned, certain adjacent parts of Utah such as St. George, Kanab, and other places which belong floristically with Arizona. The system of classification used in this work is that of De Candolle, and Bentham and Hooker, with certain minor changes. Plants, trees, and shrubs are listed by family, genera, and species, with references to the journal in which they were first described and classified, and a note on their range and physical features.

VERMONT BOTANICAL CLUB (BURLINGTON)

The flora of Vermont; an annotated list of the ferns and seed plants of the state of Vermont. Compiled by a committee of the Vermont Botanical Club, E. J. Dole, editor. Third revised edition. Burlington, Vt.: The Vermont Botanical Club, 1937. 353 p. illus. 23 cm. \$1.00. 1451

Contents: Catalogue of ferns and seed plants: Pteridophyta. Spermatophyta. Supplementary tables. Index of scientific names. Index to English names.

Note: A systematic tabulation with references to the original literature on each of the genera and species described. Each species or group listed is cited with a statement of habitat, distribution within the state of Vermont, and degree of frequency. Plants rare in Vermont are cited with a record of the first collector and, in some cases, the latest modern collector of the species.

All recorded type-stations in Vermont are also cited. The work contains 2,572 annotated records of ferns and seed plants, in which there are 36 new combinations. The third edition represents a revision and enlargement of the 1915 list and includes new species and some reclassification of names.

WILDER, GERRIT PARMILE

- ✓ The flora of Makatea. Honolulu, Hawaii: Bernice P. Bishop Museum, 1934. 49 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 120) \$2.00. 1451a

Contents: Introduction: General features of Makatea. Phosphate. Animal life. Plant life. The list. Index.

Note: A study of the flora of this island, which geographically belongs to the Tuamotu Archipelago and politically is part of French Oceania. Like the other islands of this group, it consists of coral limestone, but unlike the others it stands high above sea level and there is evidence of a very remote period of uplift. The plants are represented by comparatively few species, and the flora has been greatly modified by introductions from the Society Islands, notably Tahiti.

WILDER, GERRIT PARMILE

- ✓ Flora of Rarotonga. Honolulu, Hawaii: Bernice P. Bishop Museum, 1931. 113 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 86) \$2.00. 1451b

Note: In this paper are recorded the data obtained by the author during three visits made in 1925, 1927, and 1929 to Rarotonga, the largest of the Cook Islands. In 1903, Dr. T. F. Cheeseman published a book on the same subject, and it is of interest to note the changes in the flora—and also in the naming of the genera and species of some plants—which have taken place in the interval. This bulletin records 560 species of plants, 330 of which were not recorded by Dr. Cheeseman. On the other hand, of the 72 species of ferns named by the latter author, Dr. Wilder could find only 15, while recording 36 not present in the Cheeseman collection.

WOODSON, ROBERT EVERARD, JR., AND OTHERS

- ✓ Contributions toward a flora of Panama. Based upon collections by expeditions from the Missouri Botanical Garden Tropical Station, Balboa, C.Z. By Robert E. Woodson, Jr., Robert W. Schery, and collaborators. St. Louis, Mo.: The Missouri Botanical Garden, 1937-. 6 v. illus. 26 cm. (Missouri Botanical Garden. Annals. Vol. xxiv, no. 2 (part); Vol. xxvii, no. 3 (part, reprinted); Vol. xxx, nos. 2-3; Vol. xxxi, no. 1) Paper, \$2.50 each volume. 1451c

Contents: Part I: Collections in the provinces of Chiriquí, Coclé, and Panamá, by R. J. Seibert during the summer of 1935, by Robert E. Woodson, Jr., and Russell J. Seibert. Part II, fascicle 1: Cycadaceae. Taxaceae. Typhaceae. Alismaceae. Butomaceae. Triuridaceae. Gramineae (Swallen). Part II, fascicle 2: Cyperaceae (Svenson). Palmaceae (Bailey). Cyclanthaceae. Part II, fascicle 3: Araceae (Standley). Lemnaceae. Mayacaceae. Xyridaceae. Eriocaulaceae (Moldenke). Rapateaceae. Bromeliaceae (L. B. Smith). Commelinaceae. Pontederiaceae. Part IV: Miscellaneous collections, chiefly by Paul H. Allen, by Robert E. Woodson Jr., and Robert W. Schery.

Note: A comprehensive descriptive catalogue which is still in the process of publication (part III, fascicle 1, appeared in February, 1945, covering the families Junaceae to Marantaceae). Previous to the beginning of the present work, the region of the Canal Zone eastward to the Colombian border, including virtually the whole of the territories of San Blas and Darien, was practically unexplored botanically, although its vegetation is probably the richest and most unspoiled.

YUNCKER, TRUMAN GEORGE

- A contribution to the flora of Honduras. Chicago: Chicago Natural History Museum, 1938. 122 p. illus. 24 cm. (Chicago Natural

History Museum. Publication 405. Botanical series. Vol. xvii, no. 4) Paper, \$1.00. 1451d

Note: An annotated descriptive list of plants collected about Potrerillos, Lake Yojoa, and Siguatepeque, in the republic of Honduras, during 1934-1936. Cultivated plants, common garden and street weeds are omitted. A considerable number of new species are described. There are 18 plates of photographs showing type specimens.

YUNCKER, TRUMAN GEORGE

- Flora of the Aguan valley and the coastal regions near La Ceiba, Honduras. Chicago: Chicago Natural History Museum, 1940. 104 p. illus. 24 cm. (Chicago Natural History Museum. Publication 466. Botanical series. Vol. ix, no. 4) ✓ Paper, \$0.75. 1451e

Note: An annotated catalogue of plants collected by the author on the coastal plain and mountain slopes in the vicinity of La Ceiba in the department of Atlántida, republic of Honduras, and in adjacent areas in the Aguán River valley. So far as is known to the author, this area has not previously been explored by botanists. A relatively large number of new species are described for the first time in the present monograph.

YUNCKER, TRUMAN GEORGE

- The flora of Niue Island. Honolulu, Hawaii: Bernice P. Bishop Museum, 1943. 126 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 178) \$1.75. 1451f ✓

Contents: Introduction: Geography, soil, crops and exports, climate, history, vegetation, native plant names. Bryophyta. Pteridophyta. Spermatophyta: Gymnospermae, Angiospermae. Index.

Note: Niue Island, which is about 11 miles wide and 13 miles long, lies approximately 300 miles east of the Tongan Islands, 350 miles southeast of Samoa, and 580 miles west of Rarotonga. It was formed by a series of elevations of an ancient coral reef, is isolated and surrounded by great ocean depths, with no suggestion of any past geological relationship or land connection with other island groups. This paper lists 459 different species and varieties of plants, all now known to grow on the island, between 45 and 50 percent of which can be considered indigenous. Complete lack of fresh water and the thin soil of simple coral origin account for the small number of native species.

Various Plant Groups

Spermatophyta:

Trees and Shrubs

BAILEY, HAROLD EDWARDS, AND VIRGINIA LONG BAILEY

- Forests and trees of the western national parks. Washington, D.C.: Government Printing Office, 1941. 129 p. illus. 22 cm. (United States. Department of the Interior. Conservation bulletin no. 6) Paper, \$0.25. 1451g

Contents: Preface. Introduction: Forest conservation. Becoming acquainted with trees. Life zones. Structure and functions of a tree. Plant associations and succession. Forest regions: Pacific Slope region. Rocky Mountain region. Southwest region. Forests of: Olympic National Park. Mount Rainier National Park. Crater Lake National Park. Lassen Volcanic National Park. Yosemite National Park. General Grant National Park. Sequoia National Park. Glacier National Park. Yellowstone National Park. Grand Teton National Park. Rocky Mountain National Park. Mesa Verde National Park. Bryce Canyon National Park. Zion

National Park. Grand Canyon National Park. Wind Cave National Park. Carlsbad Caverns National Park. Mount McKinley National Park. Hawaii National Park. Field guide to the trees with needlelike leaves. Field guide to the broadleaf trees. Bibliography. Index.

Note: This pamphlet describes the forests of each of the parks and contains a field guide to the various trees found in the parks. Extremely technical terms are avoided. There are 70 illustrations from photographs and a map.

BAILEY, LIBERTY HYDE

The cultivated conifers in North America, comprising the pine family and the taxads; successor to *The cultivated evergreens*. New York: The Macmillan Company, 1933. 404 p. illus. 24 cm. \$7.50. 1451h

Contents: Book I, The kinds of conifers: Preview of the systematic treatment. The taxads, or yews and their kindred. The true cone-bearers: pines. Firs and spruces. Cedars, larches, cypresses, and others. Junipers. Book II, The growing of conifers for ornament and interest: Conifers in the landscape. Cultivation and propagation of conifers. Experiences with conifers. Insects, diseases, and injuries of conifers in North America. Index.

Note: A complete manual, abundantly illustrated, of the North American cone-bearing evergreens, intended both for the student of forestry and for the practicing silviculturist. The volume is the successor to *The cultivated evergreens*, edited by L. H. Bailey, New York, 1923, bringing that work up to date where necessary. Its first book is a systematic treatment of the subject and includes descriptions of about 1000 species and varieties. The second book contains practical information on the growing of conifers and includes contributions by ten specialists other than the author.

BOWERS, NATHAN ABBOTT

Cone-bearing trees of the Pacific Coast. New York: McGraw-Hill Book Company, Inc., 1942. 169 p. illus. (part col.) 20 cm. (Whittlesey House field guide series) \$2.50. 1451i

Contents: Directions for use of this manual. What to observe. References and abbreviations. List of tree groups. How to use the needle key. The needle key. How to use the elevation key. The elevation zone tables. How to use the geographical key. The geographical key. Description of all 56 species.

Note: A compact field manual that makes possible quick identification of all conifers native to the Pacific Coast. Designed for use on field trips where quick reference is needed, the book reduces the identifying procedure to an exceptionally simple routine. All distinguishing features—needles, cones, shapes, colorings, etc.—are uniquely grouped and classified to save time and assure accuracy in identifying all 56 species. Without being technical, the book presents a complete summary of data from the best botanical works in a form ready for use by anyone—whether or not he has a knowledge of botany.

BROWN, HARRY PHILIP

Trees of northeastern United States, native and naturalized. Revised and enlarged. Boston: The Christopher Publishing House, 1938. 490 p. illus. 24 cm. \$3.00. 1452

Contents: Plants compared to animals. Taxonomy of plants. Dendrology. Special morphology. Leaf key to the species. Fruit key to the species. Twig key to the species. Plates with legends and tabulated descriptive information. Conspectus. Derivations of the names of trees. Glossary of derivations. Glossary. Index.

Note: This book is a revised and enlarged edition of a work that first appeared as Technical publication no. 15 of the New York State College of Forestry, Syracuse, N.Y., under the title of *Trees of New York State, native and naturalized*. It is intended as a reference or field book for laymen and amateur naturalists. Excellent leaf, flower, and fruit drawings are given for each of the 152 trees described. The information given in the text includes descriptions of the habit, leaves, flowers, fruit, winter appearance, habitat, range, and uses of each tree.

CHAMBERLAIN, CHARLES JOSEPH

Gymnosperms; structure and evolution. Chicago: The University of Chicago Press, 1941. 484 p. illus. 23 cm. \$4.50. 1452a

Contents: Cycadophytes: Cycadofilicales; Bennettitales; Cycadales. Coniferophytes: Cordaitales; Ginkgoales; Coniferales; Gnetales—Ephedra, Welwitschia, Gnetum. Phylogeny. Alternation of generations. Bibliography. Index.

Note: The book deals principally with the morphology of gymnosperms. The structure and evolution of the various organs, stem, leaf, root, and reproductive structures, both vegetative and gametophytic, are described in each of the seven orders. Comparative morphology is emphasized and is extended to groups above and below wherever necessary to make clear the origin and evolution of any organ of the gymnosperms. In each group the fossil as well as the living representatives are considered.

COLLINGWOOD, GEORGE HARRIS

Knowing your trees. With 529 photographs showing typical trees and their leaves, bark, flowers, and fruits. Fifth and revised printing. Washington, D.C.: American Forestry Association, 1941. 213 p. illus. 30 cm. \$2.50. 1452b

Note: This illustrated guide for the amateur nature lover and the student of forestry contains 101 descriptions of trees common to the United States, together with black-and-white photographs of leaves, fruit, blossoms, and bark, including winter and summer photographs of all deciduous broadleaved trees. A large part of the illustrations is from the collection of the United States Forest Service. There is a considerable amount of textual description as well, a short bibliography, and an index to common and scientific names of trees. The revised printing contains 51 additional trees and several minor changes to conform with accepted practice among botanists and dendrologists.

CURTIS, CARLTON CLARENCE, AND S. C. BAUSOR

The complete guide to North American trees. New York: The New Home Library, 1943. 337 p. illus. 21 cm. \$0.69. 1452c

Contents: Introduction. Explanations and suggestions. How to use the keys. General key to the northeastern and southern trees. The three main groups of trees. General key to the western trees. Trees of the northeastern region: The cone-bearing trees. The broad-leaved trees. Trees of the southern region: The cone-bearing trees. The broad-leaved trees. The monocots. Trees of the western region: The cone-bearing trees. The broad-leaved trees. Definitions. Index.

Note: A brief, inexpensive key to the common trees of North America, written for the amateur naturalist who has no formal knowledge of botany or dendrology. Scientific nomenclature is avoided, while clear but concise descriptions, with figures, are given for each type of tree covered. There is a short glossary.

DAHLGREN, BROR ERIC

Index of American palms. Chicago: Chicago Natural History Museum, 1936. 456 p. 23 cm. (Chicago Natural History Museum. Publication 355. Botanical series. Vol. xiv) Paper, \$3.00. 1452d

Contents: Genera and species: The taxonomic literature. Errata. Pre-Linnean names and polynomials. Literature. Vernacular names. Sources of vernacular names. Geographical list. Fossil palms, by A. C. Noé. Literature.

Note: A list of palms in alphabetical order by genera covering all genera and species that have been named or described up to the date of publication from the Western Hemisphere. In genera that have received critical attention of a monographer, the treatment and synonymy is that of the monographer cited in the references to the literature of the respective genus. Vernacular names have been confined to those current in their respective countries. The geographical lists, compiled from systematic literature and special floras, give the names of species, with full synonymy, recorded for each country in North and South America, Mexico, and Central America. There are 28 titles in the list of pre-Linnean literature, and 77 articles and monographs in the bibliography following the short paper on fossil palms.

DOAK, CLIFTON CHILDRESS

Evolution of foliar types, dwarf snoots, and cone scales of *Pinus*, with remarks concerning

similar structures in related forms with thirty-two text-figures. Urbana, Ill.: University of Illinois Press, 1935. 106 p. illus. 26 cm. (Illinois biological monographs. Vol. xiii, no. 3) Paper, \$1.50. 1452e

Contents (abridged): Introduction: Review of literature. Materials and methods. Definition of terms. The vegetative long shoot: Simple leaves of long shoot. Bud scales, sterile bracts, and subtending scales. Homologies of the axillary shoots. Normal annual growth of the vegetative long shoot. Abnormal annual growth of the long shoot. The reproductive long shoot, or ovulate cone axis: Primary foliar organs. Growing point. The evolution of the long shoot: The vegetative long shoot and its foliar organs: The ovulate long shoot, or cone axis. The vegetative dwarf shoot and its foliar organs: Sheath scales. Functional leaves, or needles. Meristematic tip, or bud of the dwarf shoot. Branch and leaf forms in fossil and modern relatives. Evolution of the vegetative dwarf shoot and its foliar organs: Literature. Steps in the evolution of the dwarf shoot and functional leaves. Evolution of the leaf meristems. The ovulate dwarf shoot, or seed scale: Voltzia and the primitive type of seed scale. Developmental morphology of the normal seed scale. Abnormalities of bisporangiate cones. Abnormalities of monosporangiate and proliferated cones. Vascular supply and the scale of *Araucaria*. Evolution of the ovulate dwarf shoot, or seed scale: Leading interpretational theories. Summary of steps in cone scale evolution. Advantages of the brachyblast interpretation. The phylogeny of the Pinaceae. Summary: Bibliography.

Note: A supplementary investigation to round out data already available and to bridge gaps between bodies of existing knowledge for the purpose of summarizing and re-interpreting the phylogeny and affinities of the genus.

ELIOT, WILLARD AYRES, AND G. B. MCLEAN

Forest trees of the Pacific Coast; including a brief account of the outstanding characters, distribution and habitat of the trees native to Alaska, British Columbia, Washington and Oregon. Illustrated principally from original photographs by George C. Stephenson. New York: G. P. Putnam's Sons, 1938. 565 p. illus. 21 cm. \$5.00. 1453

Contents: Acknowledgments. This book, definitions and general comments. Needle-leaved trees, Gymnospermae. Broad-leaved trees, Angiospermae (dicotyledons). Odds and ends. Appendix: List of the forest trees of the Pacific Coast. Alphabetical index to common and scientific names of trees described in this book.

Note: Designed as a field book for the ready identification of trees by students without technical botanical training, as an introductory textbook for beginning forestry students, and as a manual for nature teachers, forest rangers, park naturalists, and lumbermen. Detailed and technical descriptions are not provided, emphasis being placed upon showing, by photographs and brief descriptions, the characteristics of a tree which distinguish it at sight from other trees around it. Some information about wood, flowers, fruit, habit of growth, range, and habitat is included, as well as brief notes on facts of general or commercial interest.

FRY, WALTER, AND JOHN R. WHITE

Big trees. Stanford University: Stanford University Press, 1938. 126 p. illus. 22 cm. \$1.50. 1453a

Contents: Significance of the Big Trees. Discovery of the Big Trees. Saving the Big Trees. Big Tree and Coast Redwood. Age of the Big Trees. The record of the rings. Size of the Big Trees. The birth of a giant. Seedlings and the study tree. The harvest and the first fruit. The cone pigment and propagation. General appearance and foliage. The bark and the root system. The death of a giant. The General Sherman Big Tree. Geologic history of the Big Tree. Naming of the Big Tree. The California Big Tree groves. Index.

Note: A book about the world's largest trees, the *Sequoia gigantea*, their size, age, where and why they grow best, their discovery, and the difference between the big sequoias that grow on the coast of California and those found in the Sierra Nevada, with photographs and a map showing the location of every grove of these trees known to exist. For readers interested in trees and our national parks.

HARLOW, WILLIAM MOREHOUSE, AND ELLWOOD S. HARRAR

Textbook of dendrology covering the important forest trees of the United States and Canada. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 542 p. illus. 23 cm. (American forestry series; Walter Mulford, consulting editor) \$4.50. 1454

Contents: Introduction; Nomenclature. Classification. Identification. Variation. Description of species. Gymnosperms: Cycadales. Ginkgoales. Gnetales. Coniferales. Angiosperms: The plant families. Amentiferae. Floriferae. Apetalae. Polypetalae. Sympetalae. Glossary. Selected references. Index.

Note: The authors of this book describe the important forest trees of the United States and Canada. Nearly 250 species of trees are covered in detail, and most of the descriptions include distinguishing characteristics, general description, range, and botanical features. Many other species of less importance are also mentioned, making the book one of the most comprehensive treatments of the subject available.

HARLOW, WILLIAM MOREHOUSE

Trees of the eastern United States and Canada, their woodcraft and wildlife uses. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1942. 288 p. illus. (part col.) 28 cm. (Whittlesey House field guide series) \$2.75. 1455

Contents: Preface. Introduction. What is a tree? Tree shapes. What is a species? What tree makes the best firewood? Tree names. A survey of tree terms. How to make leaf prints. How to use the keys. General key to tree groups. The conifers or softwoods. The pine family. Broadleaved trees or hardwoods. Selected references. Index.

Note: A pocket-sized field book in non-technical language for the average tree observer. Each important tree is described as to appearance, leaves, flowers, fruit, twigs, bark, habitat, and distribution. The introduction includes a key to tree groups.

HYLAND, FAY, AND FERDINAND H. STEINMETZ

The woody plants of Maine, their occurrence and distribution; an annotated catalog of the woody spermatophytes. Orono, Me.: University of Maine Press, 1944. 72 p. illus. 23 cm. (University of Maine studies. Second series, no. 59) \$0.50. 1457

Contents: The white pine—a symbol. Acknowledgments. Introduction. Explanation of catalog. Catalog. Bibliography. Index to the families, genera, and common names included in the catalog.

Note: A short but comprehensive treatment for the botanist and amateur on the occurrence and distribution of the woody plants, including exotics, of the state of Maine. The number of plants described is 513.

KIRKWOOD, JOSEPH EDWARD

Northern Rocky Mountain trees and shrubs. Stanford University, Calif.: Stanford University Press, 1930. 340 p. illus. 23 cm. \$2.50. 1457a

Contents (abridged): Introduction. Key to the families. Pronunciation of scientific names. Pinaceae. Taxaceae. Lilaceae. Salicaceae. Betulaceae. Chenopodiaceae. Ranunculaceae. Berberidaceae. Hydrangeaceae. Grossulariaceae. Rosaceae. Pomaceae. Drupaceae. Celastraceae. Anacardiaceae. Aceraceae. Rhamnaceae. Araliaceae. Cornaceae. Ericaceae. Vacciniaceae. Polemoniaceae. Scrophulariaceae. Caprifoliaceae. Compositae. Appendix: Botanical terminology. Index of common names. Index of scientific names.

Note: Prepared to meet the needs for a book on the trees and shrubs of the northern Rocky Mountains which will be of service in the hands of those not technically trained as botanists yet whose interests, vocational or otherwise, bring them into contact with the forest vegetation. Useful to foresters, lumbermen, woods-

men, farmers, teachers, students, and the general public. The attempt has been made to bring together the facts concerning the woody portion of the flora and, where difference of opinion exists, to adopt a conservative view without presuming to settle the disputed point. There are 84 text figures and 34 plates.

LAMB, FRANK HAINES

Book of the broadleaf trees; the story and the economic, social, and cultural contribution of the temperate broad-leaved trees and forests of the world. New York: W. W. Norton and Company, Inc., 1939. 367 p. illus. 22 cm. \$4.00. 1457b

Contents: Prologue. Out of the past. North American Broadleafia. Broadleafia abroad. The empire of drought. Shadowless forests. Tropic derelicts and migrants. A woodland idyl. King Quercus. The royal family of *Fagus*. The regal walnut. Patrician hardwoods. Beautiful broadleaves of worth. Some soft broadleaves. Others worth knowing. Valued for their fruits. Hardwood use and plantings. The beautiful in wood. A miscellany of treasures. Epilogue. Selected bibliography. Index.

Note: A companion volume to the author's *Sagas of the evergreens*, New York: W. W. Norton and Company, Inc., 1938 (see below), both of which together present a popular yet accurate account of the temperate trees as a whole. The present work points out the variations peculiar to the broadleaves in all of the general characteristics of growth, reproduction, woody structure, economic use, distribution, and ecology. There are 72 photographs and 37 references.

LAMB, FRANK HAINES

Sagas of the evergreens; the story and the economic, social, and cultural contribution of the evergreen trees and forests of the world. New York: W. W. Norton and Company, Inc., 1938. 364 p. illus. 22 cm. \$4.00. 1457c

Contents: Prologue. Evergreenia. Grandfather ginkgo, F. F. T. Antipodean patriarchs. Sequoia giants. Japanese cousins. Asiatic acquaintances. Comely cedars. Abies of the snows. Defiers of time. Orphans of sea and sun. Cultivated forests of the old world. Prolificuous Miss Taxifolia. Piceas: the papermakers. Plebian pines of America. Aristocratic pines. The evergreen legacy. What shall the harvest be? Epilogue. Selected bibliography. Index.

Note: A popularized account of how the evergreen trees live, grow, and multiply, the structure of their wood, the manufacture of lumber and lumber products, factors controlling the distribution of trees, the growing of forests and forestry problems. Emphasis is equally upon the cultural and the economic effects of trees. The author has written *Book of the broadleaf trees*, New York: W. W. Norton and Company, Inc., 1939 (see above) as a companion volume. Seventy-six photographs and 57 references are included.

LEAVITT, ROBERT GREENLEAF

The forest trees of New England, with illustrations. Jamaica Plain, Mass.: The Arnold Arboretum of Harvard University, 1933. 179 p. illus. 21 cm. \$2.00. 1457d

Contents (abridged): The forests of North America. The correct names of the trees. Families of trees. The pine family. A guide to names of conifers. The ginkgo. Pine needles. Resin. Mycorrhiza. Cones and pussy-willows. Trees that owe nothing to the bumble bees. The willow family. The walnut family. The birch family. The beech family. The oak's ancestors. The elm family. The plane tree family. The rose family. The pulse family. The linden family. The dogwood family. The olive family. The leaf. Bark. Diseases of trees. The forest's changing colors. Tree geography. Short descriptions for distinguishing native species.

Note: A popular guide for the layman to the knowledge of trees and tree life, with emphasis on those native to New England. Technical terms are omitted in the descriptions, which are concise accounts of the size, shape, habitat, bark, and distribution of the more common species. There are 79 photographs.

McMINN, HOWARD EARNEST

An illustrated manual of California shrubs; with a chapter on the use of the California

shrubs in the garden design, by Fred H. Schumacher. San Francisco: Published by J. W. Stacey, Incorporated, 1939. 689 p. illus. (part col.) 24 cm. \$5.00. 1458

Contents: Preface. Introduction. The classification and naming of plants. Composition of the shrub areas in California. Explanation of terms. How to use the keys. Abbreviations. Key to the genera. Key to the families. Descriptive account of the shrubs, Gymnospermae, I, Cone-bearing shrubs and their allies; Angiospermae, II, True-flowering shrubs. Addenda. Glossary of botanical terms. Index to names of species. Nomenclatorial changes. Bibliography. Use of California shrubs in the garden design. Index.

Note: A systematic and descriptive account for the forester, landscape designer, gardener, and others. Primarily for the general reader, this working manual is also designed to assist the professional botanist. Includes those vegetative forms classified as woody perennials, and semi-woody plants except trees and the succulent-stemmed shrubs of the cactus family. Includes about 800 species and 200 varieties of native and introduced shrubs, woody vines, subshrubs, woody cushion plants, and halfshrubs.

McMINN, HOWARD EARNEST, AND EVELYN MAINO

An illustrated manual of Pacific Coast trees; with Lists of trees recommended for various uses on the Pacific Coast, by H. W. Shepherd. Second edition revised. Berkeley, Calif.: University of California Press, 1937. 410 p. illus. (part col.) 19 cm. \$3.50. 1459

Contents: Preface. Introduction. Key to the genera. Descriptive accounts of the trees. Glossary of botanical terms. Addenda: Additional native species which occasionally are tree-like. References. Lists of trees recommended for various uses on the Pacific Coast. Index.

Note: A standard handbook for amateur and professional botanists, members of garden clubs, students, workers in landscaping, foresters, and teachers. The book contains descriptive notes on 400 introduced species in addition to thorough presentation of the native species. There are 23 photographs and 393 text figures. There is an eight-page glossary of botanical terms, and a list of references.

MULLER, CORNELIUS HERMAN

The Central American species of *Quercus*. Washington, D.C.: Government Printing Office, 1942. 216 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 477) \$1.00. 1459a

Contents: Introduction. Subgeneric concepts. Species concept. Comparative knowledge of areas. Morphological basis of classification. Methods. Systematic treatment. Excluded species. List of exsiccatae. Literature cited. Index.

Note: A systematic review of the entire Central American oak flora. It includes description of range for and notes about each species of oak found in Central America, including the Mexican states below the Isthmus of Tehuantepec and the Colombian Andes of South America. Identifying pictures of various leaves and acorns are contained in 124 photographic plates.

PRESTON, RICHARD JOSEPH

Rocky Mountain trees; a handbook of the native species with plates and distribution maps. Ames, Ia.: The Iowa State College Press, 1940. 285 p. illus. 19 cm. \$2.00. 1460

Contents: The Rocky Mountain region. Tree characters. Check list of trees found within each state by scientific and common names. Key to the genera. Glossary. Bibliography. Index.

Note: This book contains descriptions and illustrations of all native or naturalized trees known to be growing in the vast Rocky Mountain region. It supplies the knowledge necessary for the identification and understanding of 252 species representing 85 genera and 40 families to be found in Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, western Texas, Utah, and Wyoming. For students, laymen, and practicing foresters.

REHDER, ALFRED

Manual of cultivated trees and shrubs hardy in North America, exclusive of the subtropical and warmer temperate regions. Second edition, revised and enlarged. New York: The Macmillan Company, 1940. 996 p. illus. 22 cm. \$10.50.

1461

Contents: Preface to the second edition. Introduction. Abbreviations of authors' names. Abbreviations of references to illustrations. Further abbreviations and explanations of signs. Synopsis of the orders and families contained in this book. Analytical key to the families and aberrant genera. Description of trees and shrubs. Glossary of botanical terms. Index. Additions and emendations.

Note: This handbook describes from a botanical and horticultural point of view the cultivated woody plants which are grown in the colder and cooler temperate regions of North America. It presents in concise form a complete flora of all trees and shrubs known to be in cultivation and capable of enduring the climate under consideration. Woody vines, bamboos, cacti, and suffrutescent plants are included. Revised and enlarged, it covers the new species and varieties that have been introduced in the past twelve years, the new hybrids that have appeared in cultivation, and includes a new map on the zones of hardiness. It incorporates the changes in names necessitated by the amendments and changes in International Rules of Botanical Nomenclature, adopted by the Botanical Congress in 1930 and 1935.

ROGERS, WALTER E.

Tree flowers of forest, park, and street. The drawings from nature by Olga A. Smith. Appleton, Wis.: Published by the author, 1935. 500 p. illus. 27 cm. \$7.50.

1462

Contents: Introduction. Maidenhair tree family. Pine family. Willow family. Walnut family. Birch family. Beech family. Elm family. Mulberry family. Magnolia family. Custard apple family. Laurel family. Witch-hazel family. Plane tree family. Rose family. Legume family. Sumac family. Holly family. Staff tree family. Bladdernut family. Maple family. Quassia family. Buckeye family. Buckthorn family. Linden family. Ginseng family. Dogwood family. Heath family. Ebony family. Storax family. Olive family. Bignonia family. Madder family. Honeysuckle family. Index based on common names. Index based on scientific names.

Note: A discussion of the flowers of our more common trees, designed to create an awareness and an appreciation of their beauty. Plates in a duotone green show the flowers in most cases in a magnified form in order to depict the details. Since the book is intended to be chiefly pictorial, text is employed only to explain features which are not pictorially self-explanatory, to provide a background for understanding the plates, or to present relevant and explanatory facts of interest. The scientific names are those of Gray's *Manual*. Silhouettes are provided of trees without foliage to stimulate an interest in winter study of trees.

SCHOPF, JAMES MORTON

The embryology of *Larix*. Urbana, Ill.: University of Illinois Press, 1943. 97 p. illus. 26 cm. (Illinois biological monographs. Vol. xix, no. 4) Paper, \$1.50.

1462a

Contents (abridged): Introduction. Historical account. Materials and methods: Killing and fixation. Embedding and sectioning. Stains and staining. Investigation: Embryo development in the pine family. Rate of growth and sequence of embryo development. Development of the gametophyte and archegonium. Fertilization. The early embryo. The late embryo. The gametophyte during embryo development. Discussion: Relationship of *Larix* within the Pinaceae. Tissues of the *Larix* embryo. The primitive spindle and phylogeny. Conclusions. Bibliography. Plates.

Note: An account primarily of the embryonic sequence in *Larix decidua* Mill., with a theoretical interpretation of the pinaceous sequence of development.

SHIRLEY, JAMES CLIFFORD

The redwoods of coast and sierra. Third edition, revised. Berkeley, Calif.: University of

California Press, 1942. 84 p. illus. 24 cm. Paper, \$0.50.

1462ab

Contents: The redwoods. Discovery of the redwoods. Distribution of the redwoods. The fossil record of the redwoods. Resistant vitality of the redwoods. Reproduction of the redwoods. Cultivation of the redwoods. Uses of the redwoods. Size of the redwoods. Age of the redwoods. Comparison of coast redwood and sierra redwood. Save the redwoods! Appendixes. References.

Note: Pertinent and interesting information presented in non-technical terms for the layman and illustrated with numerous photographs. The author emphasizes the necessity for serious efforts to preserve the redwood trees.

SUMMERHAYES, V. S.

The genus *Ficus* in the Samoan Islands. Honolulu, Hawaii: Bernice P. Bishop Museum, 1939. 10 p. illus. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. xv, no. 9, September 6, 1939) \$0.25.

1462ac

Note: The Samoan Islands are the most easterly group in the Pacific possessing a *Ficus* flora which is at all varied. This study was based mainly on collections in the Bishop Museum, chiefly those obtained in 1929 and 1931. While carrying out this work, the author was studying the figs of Oceania generally and particularly those of the adjacent island groups such as Fiji, Tonga, and the Society Islands. Consequently he was able to consider all the species from a broader aspect than would otherwise have been possible and could make numerous reductions to synonymy. In his opinion, too narrow a view of species had been taken by former students, resulting in a multiplicity of species based often on inadequate characters.

WILLIAMS, LLEWELYN

Woods of northeastern Peru. Chicago: Chicago Natural History Museum, 1936. 588 p. illus. 24 cm. (Chicago Natural History Museum. Publication 377. Botanical series. Vol. xv) Paper, \$6.00.

1462b

Contents: Introduction. Route. Geography of Peru. The montaña: Formations and associations. Climate. Inhabitants. Communications. Agriculture. Forest products. Descriptions of the woods. Tables of anatomical characters of Peruvian woods. Vernacular names. Bibliography. Index.

Note: Following a brief introductory section describing the general features of the montaña or forest region which constitutes more than half the total area of the republic of Peru, the present monograph offers an annotated descriptive catalogue of genera and species of trees and shrubs found growing in that area. The families are arranged according to the classification of Engler and Prantl and the genera and species are listed alphabetically. The résumé of general characters for families and genera is based on the author's collection of 22,500 specimens obtained in the locality during 1929-30. The work includes an account of the principal characters of the leaves, flowers, and fruits, followed by a summary of the salient structural features of the dried woods with their macroscopic and microscopic physical properties. The bibliography lists 148 articles and monographs from the pertinent world literature.

Other Spermatophytes

ALEXANDER, EDWARD JOHNSTON

Succulent plants of New and Old World deserts. Second edition. New York: New York Botanical Garden, 1944. 64 p. illus. 23 cm. \$0.50.

1463

Contents: Succulent plants at the Botanical Garden. Desert cacti of the Americas. Succulent plants of the American deserts. Some little known New World succulents. Stone-mimicry and windowed plants. Succulent plants of the Old World. Culture of succulent plants. Index to plant names.

Note: An authoritative introductory work to succulents consisting of articles reprinted from the *Journal* of the New York Botanical Garden, with the addition of the section on culture.

ANDERSON, EDGAR, AND ROBERT E. WOODSON

The species of *Tradescantia* indigenous to the United States. Jamaica Plain, Mass.: The Arnold Arboretum of Harvard University, 1935. 132 p. illus. 25 cm. (Arnold Arboretum of Harvard University. Contributions. ix) Paper, \$2.25. 1463a

Contents: Introduction. Taxonomic history. Gross morphology. Speciation. Hybridization. Study material. Taxonomy: Key to the species. Descriptions, citations of synonyms, and specimens. Excluded species. List of exsiccatae. Index.

Note: *Tradescantia* has come to the fore in recent years as an object of experimentation and observation since the genus has much to recommend it for cyto-genetic purposes. It grows easily, withstands mistreatment, has a long blooming period, its chromosomes can be counted under low power of the compound microscope, and both tetraploid and diploid species and varieties are available for genetic analysis. The present paper traces its taxonomic history and presents a systematic description which is of value not only to botanists but to cyto-geneticists as well. Range, habitat, distribution, anatomical details, measurements, and original reference accompany the descriptions.

BABCOCK, ERNEST BROWN, AND G. L. STEBBINS, JR.

The American species of *Crepis*, their interrelationships and distribution as affected by polyploidy and apomixis. Washington, D.C.: Carnegie Institution of Washington, 1938. 199 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 504) Paper, \$2.00; cloth, \$3.00. 1463b

Contents: Taxonomic history of the indigenous species. Present distribution of the species. Cytology of the species. Genetic interrelationships of the species. Factors affecting the distribution of the species. Origin and development of the species. The effects of polyploidy and apomixis on evolution. The systematic treatment of the agamic complex. Summary of the preceding sections. Materials and methods. Literature cited. Generic description. Key to the western American species of *Crepis*. Description of species. Indexes.

Note: A cyto-taxonomic treatment of the 12 indigenous and 7 introduced North American species of *Crepis*, being an attempt to apply directly some of the best-established principles of modern cytogenetics to the species problem.

BABCOCK, ERNEST BROWN, AND G. LEDYARD STEBBINS, JR.

The genus *Youngia*. Washington, D.C.: Carnegie Institution of Washington, 1937. 106 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 484) Paper, \$1.25; cloth, \$1.75. 1463c

Contents (abridged): History of the genus. Diagnosis of the genus. Relationships of *Youngia*. Geographic distribution. Artificial key to the species. *Desiphylum*. *Stenophytum*. *Hieraciella*. *Crepidopsis*. *Mesomeris*. *Euyoungia*. Species incertae sedis. Species exclusae. Index to species, subspecies, and synonyms.

Note: A monographic treatment of the species of the herbaceous plant *Youngia*, with the purpose of redefining the genus and its relations to *Crepis* and the neighboring genera, and of clarifying the interrelationships of the species.

BAIRD, VIOLA (BRAINERD)

Wild violets of North America. Color illustrations by F. Schuyler Mathews, introduction by Herbert L. Mason. Berkeley: University of California Press, 1942. 225 p. illus. (part col.) 26 cm. \$10.00. 1463f

Contents: Preamble. Key to wild violets of North America: i. Mock pansies—Stemmed yellow violets. Stemmed white violets (with yellow at their base). Stemmed yellow or bicolorous violets

(with leaves dissected). Stemmed yellow violets (style summit deeply cleft). ii. True violets—Stemless blue violets. Palmata subgroup. Affinis subgroup. Cucullata subgroup. Stemless white violets. Stemless yellow violets. Stemless lavender violets. Stemless bicolorous violets. Stemmed blue violets. iii. True wild pansies. Key to colors in wild violets. Bibliography, together with type locality and source of material illustrated. Index of names.

Note: A book for the layman and the botanist, intended to give through color plates and text a simple means of identifying the different species. Eighty color sketches accompany the text, with color descriptions. A key based on pistils is given, and a key to North American violets has been made to show the relationship between Eastern and Western violets. There is a list of common names, and the index shows distribution of species.

BAXTER, EDGAR MARTIN

California cactus. A complete and scientific record of the cacti native in California. Los Angeles, Calif.: Abbey San Eucino Press, 1935. 93 p. illus. (part col.) 27 cm. \$2.50. 1464

Contents (abridged): Key to genera. Species. Common names. Acknowledgments.

Note: The author's aim in this semi-popularized description of cacti species found in California has been to create interest in the subject among the lay readers who have little or no scientific knowledge of the subject. The book claims to cover every variety of cacti native to the state. Latin names and a systematic classification are provided for the specialist, and there are numerous photographs, some in color, to augment the descriptive text.

BENSON, LYMAN

The Cacti of Arizona; introduction and text by Lyman Benson, in consultation with J. J. Thornber; data on cultivation and geographical distribution and distributional maps by A. A. Nichol, Arizona Game Department, Division of Federal Aid; line drawings by Lucretia Breazeale Hamilton. Tucson, Ariz.: University of Arizona, 1940. 134 p. illus. (part col.) 23 cm. (University of Arizona bulletin. Vol. xi, no. 1; Biological science bulletin no. 5) Paper, \$1.00. 1465

Contents (abridged): Preface. Acknowledgments. Introduction. Classification of Cacti. *Opuntia*. *Cereus*. *Echinocereus*. *Echinocactus*. *Manillaria*. Culture and care of Arizona native Cacti.

Note: This is a semitechnical manual for botanists and gardeners for the identification and cultivation of cacti. The arrangement is formal but the terminology is simplified, and most of the species are illustrated.

BRITTON, NATHANIEL LORD, AND E. P. KILLIP

Mimosaceae and Caesalpiniaceae of Colombia. New York: New York Academy of Sciences, 1936. 102 p. illus. 23 cm. (New York Academy of Sciences. Annals. Vol. xxxv, p. 101-196, 203-208) Paper, \$1.75. 1467

Contents: Preface. Introduction: Botanical exploration in Colombia. Basis and scope of the present study. Genera of Mimosaceae in Colombia. Genera of Caesalpiniaceae in Colombia. Addendum. Partial list of exsiccatae. Bibliography. Plates. Index.

Note: This monograph describes the species of 34 genera of Mimosaceae and of 43 genera of Caesalpiniaceae of Colombia. It is based upon the collections at the New York Botanical Garden and the United States National Museum.

EPLING, CARL CLAWSON

The American species of *Scutellaria*. Berkeley, Calif.: University of California Press, 1942. 144 p. illus. 27 cm. (University of California publications in botany. Vol. 20, no. 1) \$1.75. 1473a

Contents (abridged): Introduction. Character of North American *Scutellaria*. Key to the sections. The sections. Index. Plates.

Note: A monograph for the botanist. One hundred thirteen species are defined, ranging from the Arctic Circle to Tierra del Fuego.

EPLING, CARL CLAWSON

A revision of *Salvia*, subgenus *Calosphace*. Berkeley, Calif.: University of California Press, 1940. 383 p. illus. 24 cm. (Publications of the University of California at Los Angeles in biological sciences. Vol. 2) Paper, \$2.50. 1474

Note: This systematic classification represents a division of the nearly five hundred species accepted into ninety-one species-groups or sections, based on a new taxonomic arrangement derived from the structure of the flower, correlations of vegetative habit, leaf form, pubescence, and geographic distribution. *Calosphace* is shown to be centered primarily in the highlands of central Mexico and Central America, with secondary areas of concentration in the northern Andes and Brazilian highlands, and the distributions of species are indicated on accompanying maps. The text of the systematic classification is entirely in Latin, as well as the descriptive annotations, with occasional additional remarks in English. There are 50 plates of wash drawings illustrating 100 characteristic specimens. An edition of this work was published in Berlin in 1939 as *Reportorium specierum novarum regni vegetabilis*, Beihefte, Band cx, but plates xxxiv to xlx and maps 34 to 43 present in this edition were lacking in the German edition.

FASSETT, NORMAN CARTER

The leguminous plants of Wisconsin; the taxonomy, ecology, and distribution of the Leguminosae growing in the state without cultivation. With drawings by Richard I. Evans and a study of epidermal outgrowths by Catherine Mose. Madison: The University of Wisconsin Press, 1939. 157 p. illus. 25 cm. \$3.00. 1475

Contents: The distribution of the Leguminosae native in Wisconsin. Artificial key to the Leguminosae of Wisconsin based on vegetative characters. Key based on flowers. Key based on fruits. Key based on seeds. Characteristics and distributions of the Leguminosae of Wisconsin. Epidermal outgrowths of the Leguminosae of Wisconsin. Glossary. Index.

Note: A book for taxonomists, ecologists, teachers, and workers in soil conservation, game management, and agronomy. The volume includes drawings and photographs illustrating nearly all key characters; maps showing, for most species, the Wisconsin range in detail and their general distribution throughout North America; the ecological and geological factors influencing the distribution of each species.

FOSBERG, FRANCIS RAYMOND

The genus *Gouldia* (Rubiaceae). Honolulu, Hawaii: Bernice P. Bishop Museum, 1937. 82 p. illus. 26 cm. (Bernice P. Bishop Museum. Bulletin 147) \$1.50. 1476

Contents (abridged): Introduction: History of the genus, relationships, criteria used in classification, hybridism, geographical distribution. Artificial keys. Systematic treatment. Hybrids. Literature cited. Index to names and synonyms.

Note: This study was undertaken because the classification of this genus had proved a stumbling block ever since extensive plant collecting began in the Hawaiian Islands. The material employed consists of specimens preserved in the herbarium of the Museum and other collections. The genus is prominent in most of the Hawaiian moist or wet forests and in some localities it forms a considerable component of the forest. Further collecting is necessary for the establishment of relationships of the groups within the genus, and also for the study of its phylogenetic and geological history—information which may contribute to the knowledge of the geological history and relative age of the islands.

FOSBERG, FRANCIS RAYMOND

The Hawaiian geraniums. Honolulu, Hawaii: Bernice P. Bishop Museum, 1936. 19 p. illus.

23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. xii, no. 16) \$0.50. 1477

Note: The native Hawaiian geraniums, forming the section *Neurophyllodes* Gray, are of considerable phytogeographic interest since the section is endemic in these islands and lacks close relationships within the genus. They are members of the alpine and subalpine flora of the Hawaiian high mountains. Because of their genetic variability, the diversity of habitat, and the resultant variation in growth habit, there has been much confusion in the taxonomy of the group and it was this fact which awakened the author's interest and led to the research on which this paper is based.

FOSBERG, FRANCIS RAYMOND

The Polynesian species of *Hedyotis* (Rubiaceae). Honolulu, Hawaii: Bernice P. Bishop Museum, 1943. 102 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 174) \$1.50. 1478

Contents (abridged): Abstract. History. Morphological criteria. Delimitation of categories. Hybridism. Distribution. Phylogeny and relationships. Systematic and descriptive treatment. Excluded names. Specimens cited. Bibliography. Index.

Note: This study was undertaken primarily to untangle the confused relationships of the Hawaiian species of the genus *Hedyotis*. To make the discussion of the so-called genus *Kadua* complete, the rest of the Polynesian species were included. In Polynesia, *Hedyotis* is represented by five subgenera, three of them here described as new. These comprise 24 species, six of them described as new, many of them including numerous subspecies, varieties, and forms. The Hawaiian representatives of the genus, in particular, are in an active state of evolution. The genus is widespread in Polynesia, with the greatest concentration of species in the Hawaiian Islands.

GERBING, GUSTAV GEORGE

Camellias. Fernandina, Fla.: G. G. Gerbing, 1943. 264 p. illus. (col.) 24 cm. \$15.00. 1480

Contents: The author's story. Camellias in full color. New and unusual camellias. An introduction to camellias. Growing camellias month by month. Further cultural notes. Camellia pests and diseases. How to cut and pack camellia blooms. Camellias for indoor culture. Index.

Note: The main portion of this book consists of 108 beautiful reproductions of full-color photographs, each accompanied by a descriptive note on the flower.

GILL, LAKE S.

Arceuthobium in the United States. New Haven: Connecticut Academy of Arts and Sciences, 1935. 135 p. illus. 24 cm. (Connecticut Academy of Arts and Sciences. Transactions. Vol. 32, p. 111-245) \$1.80. 1481

Contents (abridged): Part I, Characters of the genus: The shoot. Flowers. Fruit. "Seed." The endophytic system. Summary. Part II, Classifications of the species: *Arceuthobium: pusillum, americanum, douglasii, vaginatum, campylopodum*. Part III, Pathological considerations: Effects on the form of attacked trees. Physiological relationships. Other biotic relationships. Economic importance. Methods of control. Summary. Bibliography.

Note: The species of *Arceuthobium*, or dwarf mistletoes, are economically among the most important indigenous parasites in the coniferous forests of the western United States. As the cutting of virgin timber increases and the supply of forest products from this region becomes more and more dependent upon second-growth, the control of these mistletoes will doubtless take a foremost place among the problems of applied forest pathology. It has also become increasingly evident that the species are in need of more critical taxonomic consideration than they have received, and the study here reported was undertaken to supply this need.

HITCHCOCK, ALBERT SPEAR

The grasses of Central America. Washington, D.C.: Government Printing Office, 1930. 245 p. 25 cm. (Smithsonian Institution. United States National Museum. Contributions from

the United States National Herbarium. Vol. 24, part 9) Paper, \$0.35. 1482

Contents: Introduction. Descriptive list with keys. Recent publications useful in the study of Central American grasses. List of new species and new names. Index to numbered specimens. Index.

Note: This account of the grasses of Central America is a continuation of the same author's series of papers on the grass floras of tropical American countries, of which the earlier publications covered Mexico, the West Indies, British Guiana, and Ecuador, Peru, and Bolivia, published respectively in Contributions from the United States National Herbarium, volumes 17 (1913), 18 (1917), 22 (1922), and 24 (1927). The present paper, covering the area between Colombia and Mexico, includes descriptions of 115 genera and 460 species.

HITCHCOCK, CHARLES LEO

A revision of the Drabas of western North America. Seattle, Wash.: University of Washington, 1941. 132 p. illus. 25 cm. (University of Washington. Publication in biology. Vol. xi) Paper, \$2.00. 1482a

Contents: Introduction. Key to species. Description of species. Schulzian species of uncertain identity. List of specimens seen. Table of comparisons of species. Index.

Note: A systematic and descriptive catalogue which reclassifies certain species on the basis of a new study of this genus of brassicaceous herbs of temperate and arctic regions. The key is intended to be concise rather than exhaustive, with certain variable species included in two or more places wherever there is any possibility of confusion. Description, measurements, distribution, and citations of the original literature are included, together with eight plates of line drawings.

JOHNSTON, IVAN MURRAY

Studies in the Boraginaceae, ix: 1, The *Allocarya* section of *Plagiobothrys* in the western United States. 2, Notes on various borages of the western United States. Jamaica Plain, Mass.: The Arnold Arboretum of Harvard University, 1932. 102 p. 25 cm. (Arnold Arboretum of Harvard University. Contributions. iii) Paper, \$2.00. 1482b

Contents: 1, The *Allocarya* section of *Plagiobothrys* in the western United States: Introduction. The status of *Allocarya*. The species of *Allocarya*. Key to the species. Systematic account. Unidentified and excluded names. 2, Notes on various borages of the western United States. Index.

Note: The ninth in an extended series of studies by the author, published since 1923 in various scientific journals in the United States. The first part of the present paper considers the relations of *Allocarya* as a group and discusses the problems presented by its species, including a key to the species and a systematic account involving new details of classification originated by the author. The second and shorter part describes various plants of the family Boraginaceae found in the western United States.

KILLIP, ELLSWORTH PAINE

The American species of Passifloraceae. Chicago: Chicago Natural History Museum, 1938. 2 v. illus. 24 cm. (Chicago Natural History Museum. Publication nos. 407 and 408. Botanical series. Vol. xix, parts i-ii) Paper, \$2.50 per part or \$5.00 per volume. 1483

Contents: Introduction. Historical survey. Varying concepts of classification. General morphology. Economic uses. General remarks. List of abbreviations for herbaria cited. Bibliography. Systematic treatment. List of exsiccatae. Index.

Note: An annotated systematic description of all the known genera and species of passionflowers native to North and South America, Mexico, and Central America, including a taxonomic revision of the earlier catalogues. A total of 355 species of *Passiflora* and ten belonging to smaller genera are recognized in the present monograph, of which 17 are proposed for the first time, plus 13 varieties of *Passiflora foetida* newly described. Little or no attention has been given to the numerous hybrids in

the family developed in horticulture. The work is based mainly on the author's studies of collections in 46 herbaria located throughout the world. Description, type locality, distribution, and species numbers for each country are included in the annotations.

KILLIP, ELLSWORTH PAINE

The Andean species of *Pilea*. Washington, D.C.: Government Printing Office, 1939. 55 p. illus. 24 cm. (Smithsonian Institution. United States National Museum. Contributions from the United States National Herbarium. Vol. 26, part 10) Paper, \$0.15. 1483a

Contents: Introduction. Systematic treatment. List of the new species and a new variety. Index to numbered specimens. Index.

Note: This work is complementary to the same author's key to the species of the genus *Pilea* from the Andean region published in 1936, described below, which contains descriptions of 30 new species. At that time it was not practicable to include redescrptions of the other species or to present a general view of the group. This bulletin gives detailed descriptions of the earlier species, together with their synonymy and a citation of the species examined. A total of 115 species are treated, of which 3 are new.

KILLIP, ELLSWORTH PAINE

New species of *Pilea* from the Andes. Washington, D.C.: Government Printing Office, 1936. 27 p. 24 cm. (Smithsonian Institution. United States National Museum. Contributions from the United States National Herbarium. Vol. 26, part 8) Paper, \$0.10. 1483b

Contents: Introduction. Key to the groups and species. Descriptions of new species. Index.

Note: This "Bulletin of the United States National Museum" contains descriptions of 30 new species of *Pilea*, the largest genus of Urticaceae. In the key 111 species are treated, of which the 30 new species are fully described, 3 are renamed, and 2 are raised from varietal to specific rank. In 1939 the author issued another publication, described above, which forms with this bulletin a revision of the Andean *Pilea*.

LAM, HERMAN JOHANNES, AND B. J. D. MEEUSE

Monograph of the genus *Nesoluma* (Sapotaceae). A primitive Polynesian endemic of supposed antarctic origin. Honolulu, Hawaii: Bernice P. Bishop Museum, 1940. 39 p. illus. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. xiv, no. 9, October 1, 1938) \$0.75. 1484

Contents: Material. *Nesoluma*: Description, discussion, relationship, systematic position, new subdivision of the Sapotaceae, phylogeny, subdivision and geographic distribution. Species of *Nesoluma*: Subdivision of *N. polynesticum* into varieties and forms. List of collectors. Literature cited. Legends for plates.

Note: This study was initiated by the discovery of several representatives of this genus among the sapotaceous plants collected by the Mangarevan Expedition and put at the disposal of the authors by the Director of the Bishop Museum. Other specimens owned by this and other museums and by individuals throughout the world were loaned for study. *Nesoluma* offers a fine example of the complexity of the floral features in the Sapotaceae, and its restoration is responsible for a new realignment of the whole order.

LI, HUI-LIN

The Araliaceae of China. With 14 text-figures. Jamaica Plain, Mass.: The Arnold Arboretum of Harvard University, 1942. 134 p. illus. 25 cm. (Sargentia. A continuation of the Contributions from the Arnold Arboretum of Harvard University. ii) Paper, \$2.25. 1484d

Note: A systematic study of the family Araliaceae of woody plants common to China. An attempt is made to account for every published binomial belonging to the family as recorded from China in botanical literature from 1753 to the present date. A total of 17 genera, 121 species, 32 varieties, and three forms are recognized, the study being based on the extensive collection of Chinese plants at the Arnold Arboretum, supplemented by collections from other Chinese and American herbaria. Complete systematic descriptions are given for all species treated.

MACBRIDE, JAMES FRANCIS

Spermatophytes, mostly Peruvian. Chicago: Chicago Natural History Museum, 1929-31. 4 v. 23 cm. (Chicago Natural History Museum. Publication nos. 259, 278, 288, and 291. Botanical series. Vol. iv, no. 7; Vol. viii, no. 2; Vol. xi, no. 1-2) Part I, \$0.25; part II, \$0.50; part III, \$0.25; part IV, \$0.25. All paper-bound. 1484e

Contents (abridged): Part I: The status of *Rhynchospora*. Some Peruvian sedges. New capers from Peru. Some Peruvian Annonaceae with a new *Guatteria*. New and renamed Peruvian melastomes. Variants of *Ostrya* and a Texas *Tephrosia*. Part II: New species of various families. Leguminosae, especially of the genera *Parosela* and *Psoralea*. Peruvian Solanaceae. Other Peruvian plants, chiefly new species. An Illinois variety of shooting star.

Note: A collection of annotated systematic descriptions devoted chiefly to new species of spermatophyte plants from Peru, based on the collections obtained by the Museum and on the Berlin-Dahlem collections. Parts III and IV describe some Peruvian Convolvulaceae with a new variety, two new species of *Scleria*, and other new and old Peruvian plants.

McKELVEY, SUSAN DELANO

Yuccas of the southwestern United States. Part I. Jamaica Plain, Mass.: The Arnold Arboretum of Harvard University, 1938. 150 p. illus. 28 cm. Paper, \$5.00. 1485

Note: A detailed systematic description of certain species representing two sections of the genus, *Sarcocarpa* and *Clistocarpa*, in so far as these include species growing in the region specified. Certain new characters for use in determining these species are offered and their ranges are more precisely defined than hitherto. The work consists of a review of the literature, the study of the author's collections, and of those found in the important herbaria including 13 major collections, together with a report of original field work. No attempt has been made to describe aspects of the plants still unknown to the author, and emphasis is placed upon the necessity of a field as distinguished from a "closest" study of these plants. There are 80 full-page photographs and an index.

MACKENZIE, KENNETH KENT

North American Cariceae, illustrated by Harry Charles Creutzburg; edited by Harold William Rickett. New York: New York Botanical Garden, 1940. 2 v. illus. 35 cm: Bound, \$17.50; unbound, \$15.50. 1485a

Contents: Plates. Descriptions. Index. Appendix: Collectors of specimens used for illustrations.

Note: This collection of 539 plates, with technical descriptions, is for the botanist. The text follows the author's monograph on the *Carex*, which appeared in volume 18 of *North American flora*. The same numbers are assigned to the species in both works. But synonymy, keys, descriptions of genera and of varieties, notes, statements of type localities, and citations of previous illustrations are not repeated in this work.

McVAUGH, ROGERS

A monograph on the genus *Downingia*. Menasha, Wis.: George Banta Publishing Company, 1941. 57 p. illus. 25 cm. (Torrey Botanical Club. Memoirs, Harold W. Rickett, editor. Vol. 19, no. 4) Paper, \$1.00. 1485c

Contents: Introduction. Historical summary. Relationship of the genus. Methods. Delimitations of species. Systematic treatment. Analytical key to the species. Treatment of individual species.

Note: This paper recognizes 13 species in the genus, all of which occur in California and six of which are apparently endemic to that state. The range of the genus as a whole is from southwestern Saskatchewan to west-central Washington, south to central Utah, western Nevada, and southern California, with a single species common to California and Chile. The monograph is based on a study of approximately 1,500 specimens of *Downingia* comprising roughly 700 different collections.

MARSHALL, WILLIAM TAYLOR, AND THOR METHVEN BOCK

Cactaceae. With illustrated keys of all tribes, sub-tribes, and genera. Arranged and published by Scott E. Haselton. Supplementing the work of Doctors Britton and Rose, this volume describes all of the acceptable new genera and species since nineteen-nineteen and the changes in classifications necessitated by recent discoveries. Pasadena, Calif.: Abbey Garden Press, 1941. 227 p. illus. 30 cm. \$5.00. 1485d

Contents: The Cactaceae. Key to tribes. Illustrated key to the genera. Descriptions of the genera: Tribe I, Pereskiae. Tribe II, Opuntiae. Tribe III, Cereae; Cereanae. Hylocereanae. Echinocereanae. Echinocactanae. Cactanae. Coryphanthanae. Epiphyllanae. Appendixes. Index.

Note: This illustrated systematic description includes generic names, synonymy, habitat, culture, desirability, desirable species, recent introductions, and recent new species since the publication of Britton and Rose's *The Cactaceae*, Washington, D.C., 1919-23. There is a short bibliography and many excellent photographs and drawings.

MORTON, CONRAD VERNON

A revision of *Besleria*. Washington, D.C.: Government Printing Office, 1939. 79 p. 24 cm. (Smithsonian Institution. United States National Museum. Contributions from the United States National Herbarium. Vol. 26, part 9) Paper, \$0.15. 1485e

Contents: Introduction. History of the genus. Diagnostic characters. Sectional arrangement. Generic relationships. Geographic distribution. Systematic treatment. Index.

Note: A critical account of the species of the tropical New World genus *Besleria* of the family Gesneriaceae. It is the first revision of the genus since 1865 and of the 141 recognized species 43 are here described for the first time.

MULLER, CORNELIUS HERMAN

A revision of the genus *Lycopersicon*. Washington, D.C.: Government Printing Office, 1940. 29 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 382) \$0.10. 1485g

Contents: Introduction. History. Gross anatomy. Species concept. Systematic treatment. Doubtful species. Excluded species. List of exsiccatae. Index of names.

Note: This publication presents a revised systematic treatment of the genus *Lycopersicon*, which is of economic importance because one of its species, *Lycopersicon esculentum* Mill., is the common tomato. Six species are included in the revision and each is described in detail.

MUNZ, PHILIP ALEXANDER

A revision of the genus *Fuchsia* (Onagraceae). San Francisco: California Academy of Sciences, 1944. 138 p. illus. 26 cm. (California Academy of Sciences. Proceedings. 4th series,

Vol. xxv, no. 1, December 11, 1943. Alice Eastwood semi-centennial publications) \$1.75.

1485h

Note: This article was written because the genus *Fuchsia* has been cultivated widely in recent years and has had no botanical revision since many of the species have become known. In addition to the taxonomic analyses, the author gives an account of the history of the plant, its introduction into England from Santo Domingo, and its earliest description by Plumier. Photographs of the title page and the pages containing the original description of the new genus *Fuchsia* are reproduced from Plumier's book as Plate 16 of this account.

OLIVER, WALTER REGINALD BROOK

The genus *Coprosma*. Honolulu, Hawaii: Bernice P. Bishop Museum, 1935. 207 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 132) \$3.00.

1486

Contents (abridged): Introduction: General relations, history of discovery, uses, nomenclature, material, species omitted. Morphology. Hybridism. Phylogeny. Geographical distribution. Generic diagnosis. Systematic account. Hybrids. Extinct species. Bibliography. Index of specific and subspecific names. Plate legends.

Note: This monograph, written by the director of the Dominion Museum in Wellington, New Zealand, reports the results of field work in localities ranging from the North Cape district to the subantarctic islands of New Zealand, and study of extensive series of specimens loaned by museums in many parts of the world. *Coprosma* is of interest to the evolutionist and plant geographer because, although possessing flowers of fairly uniform structure, it has differentiated into 90 species, arranged in this account in 34 species groups. Evolutionary progression seems to have followed a trend towards increase in size and multiplication of parts, and this type of evolution is indicated in sections of the genus separated as far as Borneo, New Zealand, and Hawaii.

RECHINGER, KARL HEINZ, JR.

The North American species of *Rumex*. Chicago: Chicago Natural History Museum, 1937. 152 p. illus. 24 cm. (Chicago Natural History Museum. Publication 386. Botanical series. Vol. xvii, no. 1) Paper, \$1.50.

1486a

Note: This monograph presents 49 species and four hybrids from North America, including Mexico, of which 35 species are indigenous and 12 introduced. Among these latter are 10 or 11 of European and Mediterranean origin, one from South America, and one from eastern Asia. Thirty of the 35 indigenous North American species are endemic, not being found naturally outside the continent. The author describes seven new species and one new hybrid for the first time. The work is based on a study of the collections of 27 herbaria in American and European institutions. There are 25 full-page figures and a short list of literature cited.

SCANLAN, GRACE MARGARET, SISTER

A study of the genus *Cyperus* in the Hawaiian Islands. A dissertation submitted to the faculty of the Graduate School of Arts and Sciences of the Catholic University of America in partial fulfillment of the requirements for the degree of Doctor of Philosophy. Washington, D.C.: The Catholic University of America Press, 1942. 62 p. 23 cm. (The Catholic University of America. Biological series. No. 41) Paper, \$1.25.

1486b

Contents: Introduction. Possible genetic relationships of the species. Artificial key to the species. Descriptions of the species. Index to numbered specimens. Selected bibliography. General index.

Note: A systematic classification including a proposed grouping of possible genetic relationships of the species, based on collections studied in the United States. There is a selected bibliography of 111 references.

SHERFF, EARL EDWARD

The genus *Bidens*. Chicago: Chicago Natural History Museum, 1937. 2 v. illus. 24 cm. (Chicago Natural History Museum. Publication nos. 388 and 389. Botanical series. Vol. xvi, part I-II) Part I, \$3.50; part II, \$4.00; both paper-bound.

1486d

Contents: Historical survey of genus *Bidens*. Morphology, histology, cytology, ecology, and other special lines of inquiry. Description of genus *Bidens*. Synopsis of sections. Key. Abbreviations used for herbaria cited. Descriptions. Names to be excluded from *Bidens*. Addenda. Names of uncertain status. Index of collectors cited. General index.

Note: A systematic description of the species of the genus *Bidens* of the family Compositae, based upon the author's 25 years of specialized study in this and in related genera from the collections of 63 herbaria throughout the world. Description, synonymy, type specimen, distribution, index numbers of specimens examined, and related data accompany the detailed entries for each species. An outstanding feature of the work is the reproduction of 189 of the author's original drawings showing anatomical details of selected species. The indexes are extensive.

SHERFF, EARL EDWARD

Revision of the genus *Coreopsis*. Chicago: Chicago Natural History Museum, 1936. 216 p. illus. 24 cm. (Chicago Natural History Museum. Publication 366. Botanical series. Vol. xi, no. 6) Paper, \$1.50.

1486e

Note: This monograph presents a revisional survey of the entire genus *Coreopsis* of the family Compositae. Original description (in Latin), type specimen, distribution, and specimens examined with references are included in each species note. Additional descriptive data as an aid to further differentiation are given wherever available. No attempt has been made to present an extended history of the genus inasmuch as this material has already been covered in Sherff's *The genus Bidens*, Chicago, 1937 (see above). The author has also published *Revision of the genus Cosmos*, Chicago: Chicago Natural History Museum, 1932, 49 p., \$0.50, covering another closely related genus of the family Compositae.

SILVEUS, WILLIAM ARENTS

Grasses; classification and description of species of *Paspalum* and *Panicum* in the United States; plants illustrated by photographs and drawings; illustrated keys of groups; names diacritically marked; drawings by Lillie May Hagner. San Antonio, Texas: Published by W. A. Silveus, 1942. 526 p. illus. 24 cm. \$7.50.

1486g

Contents: Introduction. The genus *Paspalum*. The genus *Panicum*: Sub-genus *Paurochaetium*, Subgenus *Dichantherium*, Subgenus *Eupanicum*. Grass names diacritically marked. Index.

Note: This work is for the botanist or the student. The arrangement is by keys. The keys are accompanied by numerous detailed illustrations for assistance in identification.

SILVEUS, WILLIAM ARENTS

Texas grasses; classification and description of grasses, descriptive systematic agrostology; plants illustrated by photographs and drawings; illustrated by keys of subfamilies and tribes; technical terms defined and illustrated; drawings by Olive Vandruff. San Antonio, Texas: Published by the Author, 1933. 782 p. illus. 24 cm. \$5.50.

1486h

Contents (abridged): Introduction. Explanations. Glossary of special terms. Poaceae, the grass family. How to identify the grasses. Descriptions of the subfamilies and key to the tribes. Descriptions of the tribes and keys to the genera. Descriptions of the genera and their species. Bibliography. Index.

Note: This manual is principally for botanists. Many detailed drawings supplement the text.

SMITH, ALBERT CHARLES

The American species of Thibaudieae. Washington, D.C.: Government Printing Office, 1932. 236 p. illus. 25 cm. (Smithsonian Institution. United States National Museum. Contributions from the United States National Herbarium. Vol. 28, part 2) Paper, Price, ? 1487a

Contents: Introduction. Historical consideration. Economic consideration. Geographic distribution. Morphological discussion. Relation of Thibaudieae to the family. Generic groups: *Thibaudia* and its allies. *Macleania* and its allies. *Siphonandra* and its allies. *Cavendishia* and its allies. Descriptive list, with keys. List of new species, new genera, and new names. Index to numbered specimens. Plates.

Note: This publication comprises a complete revision, with keys and descriptions, of the American species and genera of the group of tropical plants known as Thibaudieae. The total number of species described is 240, of which approximately one-third are here described for the first time. The species are divided into 20 genera.

STOUT, ARLOW BURDETTE

Daylilies; the wild species and garden clones, both old and new, of the genus *Hemerocallis*. New York: The Macmillan Company, 1934. 119 p. illus. (part col.) 24 cm. \$3.50. 1487b

Contents: The botanical characteristics of daylilies. Names of daylilies. The natural distribution of daylilies. Daylilies in historical retrospect. Species of daylilies. The horticultural clones of daylilies. An evaluation of the daylilies. The uses of daylilies. Culture and care. Propagation, seed reproduction, and breeding. Appendix. Index.

Note: Presents the most important information of interest and concern to gardeners and botanists regarding the species and the horticultural clones of the genus *Hemerocallis*. Attention is given to the synopsis and the description of species, to the enumeration, description, and evaluation of the clonal varieties, and to matters pertaining to the uses and culture of these plants. There are 36 plates of illustrations, some in color, and a short list of publications on the subject.

VAN RENSSELAER, MAUNSELL, AND HOWARD E. McMINN

Ceanothus; Part I, *Ceanothus* for gardens, parks, and roadsides, by Maunsell Van Rensselaer; Part II, A systematic study of the genus *Ceanothus*, by Howard E. McMinn. Santa Barbara, Calif.: Santa Barbara Botanic Garden, 1942. 308 p. illus. (part col.) 23 cm. \$2.50. 1488

Contents (abridged): Part I, *Ceanothus* for gardens, parks and roadsides: Introduction. Noteworthy *Ceanothus* collections. Descriptive account of the species and varieties. Horticultural varieties. Propagation and cultivation, by Alfred J. Stewart. References. Part II, A systematic study of the genus *Ceanothus*: Introduction. General discussion. Key to the species. Descriptive account. References. Distributional history and fossil record of *Ceanothus*, by Herbert L. Mason. Invalid and uncertain names. Index.

Note: This work is a combination of practical horticultural information for the gardener and scientific facts for the botanist. The genus *Ceanothus* is also known as wild lilac or buckthorn and is restricted mainly to west of the Mississippi.

WHITE, CYRIL TENISON

Ligneous plants collected for the Arnold Arboretum in North Queensland by S. F. Kajenski in 1929. With 9 plates. Jamaica Plain, Mass.: The Arnold Arboretum of Harvard University, 1933. 113 p. illus. 25 cm. (The Arnold Arboretum of Harvard University. Contributions. IV) Paper, \$2.75. 1488a

Contents: Introduction. Enumeration of the plants collected. Appendix: Botanical collecting in the tropics, with four text figures, by S. F. Kajenski. Index.

Note: A descriptive catalogue which includes three new genera and a number of new species. Practically the whole of the collection, which was instrumental in adding considerably to the knowledge of the flora of the northeastern part of Australia in addition to extending the known range of several genera not previously recorded, has been determined with the exception of some half dozen numbers, the material being still incomplete at the time of publication.

YUNCKER, TRUMAN GEORGE

New Fijian peperomias. Honolulu, Hawaii: Bernice P. Bishop Museum, 1943. 6 p. illus. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. XVII, no. 17, December 6, 1944) \$0.25. 1488c

Note: This list, which is a report on the species recently collected in Fiji during the Anne Archbold Expedition, includes descriptions of three species believed to be new to the islands. All specimens, including the types, are deposited in the Gray Herbarium. This article serves as a supplement to a revision of the species of *Peperomia* then known to occur in Fiji, written by the author in 1936 and published in Bulletin 141 of the Bishop Museum.

YUNCKER, TRUMAN GEORGE

Revision of the Polynesian species of *Peperomia*. Honolulu, Hawaii: Bernice P. Bishop Museum, 1937. 73 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 143) \$1.50. 1488d

Contents: Introduction. Description of genus. Key to species. Taxonomic arrangement of species. Keys to species in the island groups. List of specimens. Index.

Note: In the preparation of this paper all available collections of Polynesian species have been studied, the specimens belonging to the Museum forming the basis of the material. There are included 38 species, 22 varieties, and one form, of which 14 species, 13 varieties, and one form are new to science. The region covered by the studies includes the islands in the South Pacific lying east of Micronesia and Melanesia and extending from the Tongan and Samoan groups on the west to Pitcairn and Henderson Islands on the east. The species occurring in the Hawaiian Islands were studied by the author and presented in Bulletin 112 of the Museum.

Cryptogams: General

SMITH, GILBERT MORGAN

Cryptogamic botany. New York: McGraw-Hill Book Company, Inc., 1938. 2 v. illus. 23 cm. (McGraw-Hill publications in the botanical sciences, E. W. Sinnott, consulting editor) Vol. I, \$4.00; Vol. II, \$3.00. 1489

Contents: Volume I, The classification of spore-producing plants: Chlorophyta. Euglenophyta. Pyrrophyta. Chrysophyta. Phaeophyta. Cyanophyta. Rhodophyta. Myxothallophyta. Eumycetaceae—introduction. Phycocomycetaceae. Ascomycetaceae. Basidiomycetaceae. Fungi imperfecti. Lichens. Volume II: Bryophyta—introduction. Hepaticae. Anthocerotae. Musci. Pteridophyta—introduction. Psilophytinae. Lycopodiinae. Equisetinae. Filicinae.

Note: Covers the general classification and special morphology of plants below the level of seed plants. The classification is carried either to the order or to the family and there is a full account of the genus selected as representative of each order or family. There is also a general classification of the distinctive characteristics of the groups considered. Recent studies on both the brown and red algae are discussed. Phyletic diagrams are included and numerous illustrations show the step-by-step developments of the plants considered.

Ferns and Fern Allies

BLOMQUIST, HUGO LEANDER

Ferns of North Carolina. Introduction by Donald C. Peattie. Durham, N.C.: Duke University Press, 1934. 131 p. illus. 23 cm. (Duke University publications) \$2.00. 1490

Contents: Preface. List of illustrations. Introduction. How to know the ferns. Key to families. Keys to the genera and species. Important literature on ferns. Index.

Note: This is the first publication which deals exclusively with the ferns of North Carolina. It is based upon several years of painstaking study on the ferns and fern allies growing naturally within the boundaries of this state. Seventy-six species are illustrated with accurate drawings, accompanied by brief descriptions, including notes on habitats, abundance, local and general distribution, and peculiarities. An extensive introduction deals with ferns in general, their life history, their relation to other plants, folklore about ferns, and the relation of ferns to man. Simple and practical keys are included for the identification of ferns in the field, in the home, or in the laboratory. The book is for those interested in nature study as well as for amateur and professional botanists.

BROWN, MAURICE, EDITOR

Index to North American ferns. Constituting a catalogue of the ferns and fern allies of North America north of New Mexico, including all known forms, varieties, and hybrids. With a foreword by Charles A. Weatherby. Orleans, Mass.: The Author, 1938. 217 p. 19 cm. \$2.50. 1491

Contents: Systematic outline of orders, families, and genera. Alphabetical presentation of genera and species. Tabular arrangement of genera. Authorities cited, by John H. Barnhart. Index.

Note: The author has followed the system of Christensen in the matter of taxonomy, and includes several new varieties and hybrids with references to the texts where they were first published and described. Ecologic and geographic data are given with each species to aid the field worker. An added feature is the Latin or Greek derivation accompanying each scientific name.

BROWN, CLAIR ALAN, AND DONOVAN S. CORRELL

Ferns and fern allies of Louisiana. Baton Rouge: Louisiana State University Press, 1942. 186 p. illus. 23 cm. \$3.00. 1492

Contents: Introduction. Previous studies on Louisiana ferns. Distribution of plants, especially the ferns in relation to physiography and geology. Cultivation of ferns. Propagation of ferns. Fern structure. Economic importance of ferns. Use of keys. Keys to the families. Hymenophyllaceae, 1 species. Polypodiaceae, 19 genera, 39 species and varieties. Parkeriaceae, 2 species. Schizaeaceae, 1 species. Osmundaceae, 2 species. Ophioglossaceae, 2 genera, 7 species. Salviniaceae, 1 species. Marsileaceae, 2 species. Equisetaceae, 2 species. Psilotaceae, 1 species. Lycopodiaceae, 4 species. Selaginellaceae, 4 species. Isoetaceae, 1 species. Appendix. Glossary. Bibliography. Index.

Note: The aim of this publication is to aid those interested in Louisiana ferns to identify the various native species and to give information of value to taxonomists, ecologists, and plant geographers. It is the first complete guide to the native ferns and fern allies of Louisiana. The book contains the usual keys, descriptions of families, genera, and species. Each specific description is followed by comments of both taxonomic and popular interest. One of the outstanding features is the citation of specimens by parish, locality, date, collector, and the herbaria containing the particular specimens studied. At the same time, information has been included which is of interest to the amateur naturalist and garden enthusiast. The discussion of the distribution of the ferns in relation to geology and physiography contains some thought-provoking concepts. The illustrations consist of a geological map of Louisiana; a plate of leaf shapes, divisions of the frond, and sori shapes; an English-metric scale; and 47 halftones from original photographs which show the characteristics of 55 species.

CHRISTENSEN, CARL FREDERIK ALBERT

A revision of the Pteridophyta of Samoa. (Selaginella by A. H. G. Alston.) Honolulu, Hawaii: Bernice P. Bishop Museum, 1943. 138 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 177) \$2.00. 1492a

Note: This report presents a complete, revised list of all known Samoan species of Pteridophyta, based on an examination of all Samoan collections. The material employed in this study consisted of collections made in 1929 and 1931 by Dr. Erling Christophersen, supplemented by loans from various museums. The author disagrees with the naming of the specimens in previously published lists of the fern flora of Samoa. A further difference between these papers and the present report is due to the change of the species concept and to the totally different nomenclature employed.

CLAUSEN, ROBERT THEODORE

A monograph of the Ophioglossaceae. Menasha, Wis.: George Banta Publishing Company, 1938. 177 p. illus. 24 cm. (Torrey Botanical Club. Memoirs, M. A. Chrysler, editor. Vol. 19, no. 2) Paper, \$2.00. 1492b

Contents: Introduction. Systematic treatment. Key to the genera. *Botrychium*. *Helminthostachys*. *Ophioglossum*. Phyto-geographic considerations. Conclusions. Literature cited. Additions and corrections. Index to scientific names.

Note: In this paper the writer has discussed 52 species, arranged in the three genera of *Botrychium* (23 species), *Helminthostachys* (1 species), and *Ophioglossum* (28 species). The first and last of these genera have been divided respectively into three and four sub-genera. Many species have been redefined, their ranges more fully stated, and their relationships developed so far as the current knowledge permitted. The classification is based on the general gross morphology of the plants, and technical characters which are based on venation or on spores have been rejected as unreliable.

CLUTE, WILLARD NELSON

Our ferns; their haunts, habits, and folklore. Illustrated by William Walworth Stilson and Ida Martin Clute. Second edition. New York: Frederick A. Stokes Company, 1938. 388 p. illus. (part col.) 20 cm. \$4.50. 1493

Contents: The uncoiling fronds. The fern's place in nature. Concerning nomenclature. The osmundas. The rattlesnake fern and the adder's-tongue. The moonwort and its allies. The bracken. The cliff brakes. The woodsias. The Christmas and holly ferns. The marsh fern tribe. The wood-ferns. The rock spleenworts. The lady-fern and its kin. The polypody clan. The bladder ferns. The chain ferns. The boulder fern. Cheilanthes and maidenhair. The sensitive and ostrich ferns. The walking fern and the hart's-tongue. The curly grass and the climbing fern. Border species. Keys to the genera and species. Checklist of the ferns. Abbreviations of names used in the checklist. Glossary. Index to common names. Index to scientific names.

Note: The first edition of this work appeared in 1901 under the title *Our ferns in their haunts* and aimed to present for popular use more detailed information on the subject of the haunts and habits of ferns than was found in fern textbooks. It endeavored to be a complete illustrated guide to ferns in the northeastern and middle western portions of the United States for the amateur student of ferns. The second edition contains new material and additional illustrations. The preface to the second edition has an account of fern literature between 1901 and 1937.

COPELAND, EDWIN BINGHAM

Ferns of southeastern Polynesia. Honolulu, Hawaii: Bernice P. Bishop Museum, 1938. 58 p. illus. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. xiv, no. 5, May 31, 1938) \$0.75. 1493a

Note: The material on which this study is based consists of 629 collections, two from Flint Island, 157 from the Society Islands, 470 from islands to the south and southeast of the Society Islands. Bulletins 93 and 102 of the Museum contained a comprehensive description of the ferns of the Society Islands. The present study adds three species, two of them new. The flora of southeastern Polynesia was described in Bulletin 89 of the Museum and the only changes in conclusions stated there are in respect to detail. The types of the new species are in the herbarium of the Bishop Museum. The illustrations for this paper consist of 25 plates.

COPELAND, EDWIN BINGHAM

Pteridophytes of the Society Islands. Honolulu, Hawaii: Bernice P. Bishop Museum, 1932. 86 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 93) \$1.50. 1493b

Contents (abridged): Introduction. New species. Fern flora of the Society Islands: Filicinae, Lycopodiaceae. Index.

Note: This study was based on material collected in Tahiti and most of the other islands in 1930, the total number of specimens being about 340. The author identified this and other collections of Bishop Museum and prepared this bulletin to serve as a companion to Bulletin 59 from the Museum, on the ferns of Fiji. This study differs from the other in that it includes the Lycopodiaceae and excludes almost all species previously reported but wanting in the Museum's herbaria. The fern flora of Tahiti was found to be materially poorer than that of Fiji, a circumstance which may be explained by the fact that Tahiti is younger and lies farther out in the ocean, away from the source of immigrants.

SMALL, JOHN KUNKEL

Ferns of Florida, being descriptions of and notes on the fern-plants growing naturally in Florida; illustrated. New York: The Science Press, 1931. 237 p. illus. 19 cm. 1494

Contents: Preface. List of illustrations. Ferns of Florida. Taxonomic treatment. Authorities cited. Glossary. Index.

Note: Florida is the richest state of the Union in the number and variety of ferns growing there. This is a guide for the botanist to 107 ferns and fern-allies growing in an area that includes woods, marshes, hummocks, sand-dunes, and swamp-land.

SMALL, JOHN KUNKEL

Ferns of the southeastern states; descriptions of the fern-plants growing naturally in the states south of the Virginia-Kentucky state line and east of the Mississippi River; illustrated; drawings by Ruth Sinclair George. Lancaster, Pa.: The Science Press, 1938. 517 p. illus. 22 cm. \$3.50. 1495

Contents (abridged): Preface. Introduction. Map. Key to the orders, families, and genera illustrated for students. Taxonomic treatment, with distribution and notes. General and restricted distribution of the species. On the cultivation of native southeastern ferns, by W. A. Knight. Taxonomic list with citations, by J. H. Barnhart. Authorities cited in this work, by J. H. Barnhart. Glossary. Index.

Note: One hundred eighty-nine ferns and fern-allies are described for the botanist in this guide which covers the most important fern area of the United States. Each species is separately illustrated, technically described, and paragraphs of general commentary are added.

SMALL, JOHN KUNKEL

Ferns of the vicinity of New York, being descriptions of the fern-plants growing naturally within a hundred miles of Manhattan Island; with notes; illustrated. Lancaster, Pa.: The Science Press, 1935. 285 p. illus. 21 cm. \$2.50. 1496

Contents (abridged): Preface. Introduction. Map. Taxonomic treatment, with distribution and notes. Taxonomic list with citations. Comparative lists. Authorities cited in this work. Glossary. Index.

Note: A handbook for the student. The groups of fern-allies as well as the true ferns are covered. The notes include history, distribution, habitat, and general remarks regarding resemblance to other ferns.

TRYON, ROLLA MILTON, JR., AND OTHERS

The ferns and fern allies of Wisconsin, by R. M. Tryon, Jr., N. C. Fassett, D. W. Dunlop and M. E. Diemer. Madison, Wis.: Published by the Department of Botany, University of Wisconsin, 1940. 158 p. illus. 26 cm. \$1.00. 1497

Contents: Preface. Introduction. Physical characteristics of Wisconsin. The true ferns: keys. Fern family. Flowering fern family. Adder's tongue family. Horsetail family. Clubmoss family. Quillwort family. References. Glossary. Index.

Note: In this manual for the botanist, 118 species, varieties, forms, and hybrids are described. There are two kinds of keys included, one based on vegetative characters, the other using both vegetative and reproductive characters. Each species is illustrated with photographs, and its range is Wisconsin shown by a map; all technical characters are illustrated by drawings.

WHERRY, EDGAR THEODORE

Guide to eastern ferns; illustrated, second edition, revised and enlarged. Lancaster, Pa.: The Science Press Printing Company, 1942. 252 p. illus. 17 cm. \$1.00. 1498

Contents: Introduction. Preface to second edition. Glossary of technical terms. Classification. Keys to families, genera, and species. Illustrations and descriptions. Fern cultivation. Index to genera and species.

Note: This is a non-technical guide that covers the region of the United States from Pennsylvania and New Jersey to Virginia. Data concerning each species include history, features, habitat, range, and remarks.

Algae

CHAPMAN, VALENTINE JACKSON

Introduction to the study of Algae. New York: The Macmillan Company, 1941. 387 p. illus. 22 cm. \$3.75. 1498a

Contents: Classification. Cyanophyceae: Introduction. Cocconeales. Hormogonales. Chlorophyceae: Introduction. Volvocales. Chlorococcales. Ulotrichales. Oedogoniales. Chaetophorales. Siphonocladiales. Siphonales. Conjugales. Charales. Xanthophyceae (Heterokontae). Bociillariophyceae (Diatomaceae). Chrysophyceae. Cryptophyceae. Dinophyceae. Phaeophyceae: General. Ectocarpales (Isogeneratae and Heterogeneratae). Cutleriales (Isogeneratae). Sphaelariales (Isogeneratae). Tilopteriales (Isogeneratae). Dictyotales (Isogeneratae). Laminariales (Heterogeneratae). Fuciales (Heterogeneratae). Rhodophyceae: Introduction. Proto-florideae (Bangiales). Eu-florideae. Nemalionales, Gelidiales. Cryptonemiales. Cerameales. Gigartinales. Rhodymeniales. Reproduction. Evolution. Fossil forms. Physiology. Symbiosis. Soil Algae. Marine ecology. Ecology of salt marshes. Fresh water ecology. Ecological factors. Geographical distribution. Life form. Index.

Note: A college textbook surveying the whole field of phycology from the systematic, physiological, and ecological viewpoints. The text is copiously illustrated and a few select references are given at the end of each chapter.

COPELAND, JOSEPH JOHN

Yellowstone thermal Myxophyceae. New York: New York Academy of Sciences, 1936. 229 p. illus. 23 cm. (New York Academy of Sciences. Annals. Vol. xxxvi, p. 1-232) Paper, \$2.00. 1498b

Contents: Introduction: Location and nature of the Yellowstone National Park. Geological history. Algological studies in the Yellowstone. Survey of the Yellowstone hot springs. Descriptive list and keys: Chroococcales. Chamaesiphonales. Oscillatoriales. Upper temperature limits for life. Nature of thermal

susceptibility and tolerance. Thermal distribution of the Yellowstone Myxophyceae. Origin and relationships of the Yellowstone thermal flora. Bibliography. Index.

Note: A study of the Myxophyceae of the Yellowstone hot springs, in which 52 genera belonging to 14 families in three orders are described.

DAWSON, ELMER YALE

Field observations on the Algae of the Gulf of California; a review of the genus *Rhodymenia* with descriptions of new species. Los Angeles, Calif.: The University of Southern California Press, 1941. p. 115-180. illus. 23 cm. (Allan Hancock Pacific expeditions. Reports. Vol. 3, nos. 7, 8) \$2.00. 1499

Contents: Field observations on the Algae of the Gulf of California. A review of the genus *Rhodymenia* with descriptions of new species. Literature cited. Plates.

Note: A report on winter algae flora based on information obtained during an expedition in 1940. The first section, paper no. 7, is a short descriptive account of conditions in the Gulf. The other, paper no. 8, is a key to the species.

SETCHELL, WILLIAM ALBERT, AND NATHANIEL LYON GARDNER

Marine Algae of the Revillagigedo Islands Expedition in 1925. San Francisco, Calif.: California Academy of Sciences, 1930-31. 107 p. illus. 25 cm. (California Academy of Sciences. Proceedings. 4th series, Vol. xix, no. 11, December 30, 1930) \$1.50. 1499a

Note: This paper is based chiefly on material collected during the California Academy Expedition of 1925. Since, however, there were a very few marine Algae known from Guadalupe Island, these have been included in order to make the list complete. As the result of their study the authors report a total of 125 species. Of these, 98 occur on Guadalupe Island, 30 on Clarion, with only five species common to both, while four species are recorded from Maria Madre Island. Two new genera are described, 29 new species, and two new varieties. Including species described previously, 27 species are known at present only from Guadalupe Island and seven only from Clarion Island. The two genera and 34 species may be considered to constitute an endemic element. Interesting distributions of the non-endemic species and varieties are also discussed.

SMITH, GILBERT MORGAN

The fresh-water Algae of the United States. New York: McGraw-Hill Book Company, Inc., 1933. 716 p. illus. 23 cm. (McGraw-Hill publications in the agricultural and botanical sciences) \$6.00. 1500

Contents: Introduction. Myxophyceae. Rhodophyceae. Heterokontae. Chrysophyceae. Bacillariaceae. Chlorophyceae. Dinophyceae. Euglenophyceae.

Note: Covers all freshwater Algae of the United States, including border-like organisms. Has an introductory section on ecology and another on methods of collecting Algae and studying them in the laboratory. Descriptions of the various genera include a full account of morphology and reproduction, with extensive literature references. There are brief characterizations of the more important species of each genus; keys to orders and the families; and also a single comprehensive key based entirely on vegetative characters.

SMITH, GILBERT MORGAN

Marine Algae of the Monterey peninsula, California. Stanford University, Calif.: Stanford University Press, 1944. 622 p. illus. 23 cm. \$6.00. 1501

Contents: Introduction. Glossary. Chlorophyta. Phaeophyta. Rhodophyta. Bibliography. Comprehensive keys to genera. Plates and explanation of plates. Index.

Note: Although limited to a small geographical area (approximately 100 miles south of San Francisco) this work for the student and specialist describes about 80 per cent of the seaweeds along the western coast of the United States. For each species there is a description, an illustration in most cases, a reference to authentic specimens, a reference to other recent descriptions, local distribution, type locality, and Pacific Coast distribution.

TAYLOR, WILLIAM RANDOLPH

Marine Algae of the northeastern coast of North America; illustrated by Chin-Chin Jao. Ann Arbor: University of Michigan Press, 1937. 427 p. illus. 24 cm. (University of Michigan studies. Scientific series. Vol. xiii) \$5.00. 1501a

Contents: Preface. Introduction: Area surveyed. Geographical distribution. Algal habitats. Collection and preservation. Historical survey. Purposes and limitations. Systematic list. Descriptive catalogue: Chlorophyceae. Phaeophyceae. Rhodophyceae. Bibliography. Plates. Index.

Note: Besides furnishing a check-list, full keys, and an extensive bibliography, the author goes beyond the scope of the usual manual by incorporating current discoveries in the growth of reproductive organs and the life-histories of these plants. A history of the older collections of marine Algae in America, and notes on the ecology and methods involved in the collection, study, and preservation of Algae are included.

TIFFANY, LEWIS HANFORD

Algae, the grass of many waters. Springfield, Ill.: Charles C. Thomas, 1938. 171 p. illus. (part col.) 23 cm. \$3.50. 1502

Contents (abridged): What are Algae? Algae and the foods they make. How Algae grow and reproduce. Algae of lakes and ponds. Algae of streams and rivers. Algae of the sea. Algae of the soil. Algae of ice and snow. Algae of bizarre abodes. Algae of the past. Algae and human welfare. How to collect Algae. How to study Algae. General references. Index.

Note: This book is a good exposition of the intricate physiology and ecology of the Algae. Structural features and their relationships are included. There are instructions for the collection and study of Algae.

TILDEN, JOSEPHINE ELIZABETH

The Algae and their life relations; fundamentals of phycology. Minneapolis, Minn.: The University of Minnesota Press, 1935. 550 p. illus. 24 cm. \$5.00. 1503

Contents: Some hypotheses concerning the phylogeny of the Algae. The distribution of marine Algae in time and space. A classification based on evolutionary development, with special reference to pigmentation and food reserves. Class i. Cyanophyceae. Class ii. Rhodophyceae. Class iii. Phaeophyceae. Class iv. Chrysophyceae. Class v. Chlorophyceae. The problem of algal control. Algal food of animals. Marine Algae, our richest source of vitamins: Algae as food for man. Appendix: Standardization of method of drawing Algae for publication. Bibliography. Index.

Note: A combined text and reference book on the fundamentals of phycology. The structure, reproduction, and distribution of the various species are discussed and described. There is also a treatment of the economic aspect of the Algae, with methods of collecting, marketing, and cooking them.

Mosses and Liverworts

AMMONS, NELLE

A manual of the liverworts of West Virginia. Notre Dame, Ind.: University of Notre Dame Press, 1940. 164 p. illus. 24 cm. \$1.75. 1503a

Contents: Preface. Distribution map. Natural features of West Virginia. History of the study of liverworts in West Virginia. Collection and preservation of material. General characteristics of liverworts. Distinction between liverworts and mosses. Descriptions of class, orders, and suborders. Sequence of families and

genera. Key to genera. Descriptions of genera and species. Appendices. Bibliography. Plates and explanations. Index.

Note: This assemblage of data from original sources covers 111 species and 56 genera, all of which are described and figured. Appendix 1 contains a list of species previously reported but not illustrated or described. One of the aims has been to make comparative studies and, by means of illustrations, to show relative sizes of the species studied. In the descriptions and in the keys, vegetative characters are given prominence over reproductive characters. One hundred eighty-three references are cited in the bibliography.

BARTRAM, EDWIN BUNTING

Manual of Hawaiian mosses. Honolulu, Hawaii: Bernice P. Bishop Museum, 1933. 275 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 101) \$3.00. 1503b

Contents (abridged): Introduction: Scope, life history and structural features of mosses; key to the genera. Sphaginales. Andreaeales. Bryales: Arthrodoneteae, Nematodonteteae. Excluded and uncertain species. Literature cited. Glossary. Additions. Index to genera and species.

Note: Because the literature relative to the Hawaiian mosses is widely scattered and much of it is difficult of access to any but professional botanists, the author has embodied the available information in this manual for the use of students interested in these forms of plant life. With this purpose in mind, he has presented descriptions, distributional data, and sketches illustrating the characteristics of the respective species of mosses. Collections which he made during 1930, supplemented by other collections in the herbarium of the Museum, formed the groundwork of these studies, which deal with one of the most unique phyto-geographical areas in the world.

BARTRAM, EDWIN BUNTING

Mosses of southeastern Polynesia. Honolulu, Hawaii: Bernice P. Bishop Museum, 1941. 29 p. illus. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. xv, no. 27, May 29, 1940) \$0.50. 1503c

Note: The material on which this study is based consists of the collections made during the Mangarevan Expedition from the Museum in 1934. Previous records from the Austral Islands and the Tuamotus (*Occasional papers*, Vol. 10, no. 10) have also been included. The total number of species reported is only 62, a circumstance probably to be explained by the fact that the islands are low and the rain-forest flora is nearly or quite absent. This material gives for the first time a fairly comprehensive outline of the moss flora of the numerous islands in the extreme southeastern corner of the Polynesian area, which includes the Tuamotu Archipelago, the Austral Islands, the Mangareva (Cambier) Islands, and Pitcairn and Henderson Islands. In this flora there are clear indications of an intimate connection with the New Zealand flora which is apparently confined to these southernmost islands.

BARTRAM, EDWIN BUNTING

Polynesian mosses. Honolulu, Hawaii: Bernice P. Bishop Museum, 1933. 28 p. illus. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. x, no. 10) \$0.50. 1503d

Note: This paper lists a representative series of moss collections from various parts of Polynesia: Austral Islands, Tuamotu Archipelago, Marquesas Islands, Society Islands, Cook Islands, Tonga Islands. Necessarily it is still incomplete since only a relatively small number of species has as yet been collected in the Marquesas, and numberless small groups and isolated islands have not yet been explored bryologically. A complete series of the mosses listed, along with the types of the new species, has been deposited in the Museum.

BARTRAM, EDWIN BUNTING

Supplement to the Manual of Hawaiian mosses. Honolulu, Hawaii: Bernice P. Bishop Museum, 1939. 16 p. illus. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. xv, no. 8, July 14, 1939) \$0.50. 1503e

Note: This publication forms a supplement to Bulletin 101 of the Museum, published in 1933 (see Index). Study of new collections had added considerably to knowledge on this subject. The species found in the region below the rain forest belt, from sea level to 4,000 or 5,000 feet, seem to have reached almost stable equilibrium, to have crystallized into definite units that show little tendency to vary. It is in collections from the high regions of Mauna Kea, Mauna Loa, and Haleakala that extension of the Hawaiian moss flora has been, and will continue to be, discovered.

GROUT, ABEL JOEL

Moss flora of North America north of Mexico. Newfane, Vt.: Published by the Author, 1928-40. 3 v. illus. 26 cm. Paper, \$32.00 per set. 1503f

Contents (abridged): Volume 1, Part 1: Andreaeaceae, by A. J. Sharp. Archidiaceae, by Stanley A. Cain. Part 2: Polytrichaceae, by T. C. Frye. Calymperaceae, by William Campbell Steere. Part 3: Encalyptaceae, by Seville Flowers. Tortella, by Inez M. Harding. Didymodon and Barbula, by William Campbell Steere. Part 4: Aloina, by Ethelda J. Craig. Tortula, by William Campbell Steere. Pottia and Pterygoneurum, by W. T. Wareham. Volume 2, Part 1: Grimmiaceae, by George Neville Jones. Part 2: Erpodiaceae, by William Campbell Steere. Splachnaceae, by Geneva Sayre. Part 3: Bartramiaceae, by Seville Flowers. Timmiaceae and Anacamniaceae, by Geneva Sayre. Bryaceae (1), by A. Le Roy Andrews. Part 4: Bryaceae (2), by A. Le Roy Andrews. Volume 3, Part 1: Hypnaceae: Brachytheciaceae, by A. J. Grout. Part 2, Hypnaceae: Amblystegiaceae, by A. J. Grout. Part 3, Hypnaceae: Hypnaceae, by A. J. Grout. Part 4: Leskea and Pseudoleskea, by A. J. Sharp. Fontinalaceae, by Winona H. Welch.

Note: An encyclopedic manual giving complete descriptions of 1,115 species and 323 varieties, including two new genera, 23 new species, 16 new varieties, and many new combinations to comply with the Cambridge 1930 rules, together with statements and keys based on the most easily ascertainable characters. There is a total of 310 full-page plates of figures, including original drawings of 150 species and varieties never before illustrated. All useful synonymy and all American exsiccata are cited, as well as all American and many European figures. There are indexes in each volume.

Lichens

EVANS, ALEXANDER WILLIAM

The Cladoniae of Connecticut. New Haven, Conn.: The Connecticut Academy of Arts and Sciences, 1930. 181 p. 24 cm. (Connecticut Academy of Arts and Sciences. Transactions. Vol. 30) Paper, \$2.00. 1503g

Contents: Introduction. Morphology of the genus *Cladonia*. Synopsis of the subgenera. Systematic arrangement of the species: *Cladina*. *Pycnothelia*. *Cenomyce*. Habitats and local distribution of the Cladoniae in Connecticut. Index.

Note: In the present report an attempt is made to revise the Connecticut Cladoniae, or genus of lichens, in accordance with the newer ideas of taxonomy in this field. In order to make the catalogue more serviceable to American lichenologists, the species instead of being listed alphabetically are grouped according to the arrangement first adopted by Vainio in his *Monographia Cladoniarum universalis*, published in 1887, which brings out as clearly as possible the relationships between the various species and groups of species. The report includes in addition a brief account of the morphological features of *Cladonia*, a synopsis of three of the four sub-genera, and a series of keys for the identification of the material. The author has also written *Supplementary report on the Cladoniae of Connecticut*, New Haven: The Connecticut Academy of Arts and Sciences, 1944, 101 p. (*Transactions of the Connecticut Academy of Arts and Sciences*, Volume 35), paper, \$1.25.

FINK, BRUCE

The lichen flora of the United States. Completed for publication by Joyce Hedrick. Ann Arbor: University of Michigan Press, 1935. 426 p. illus. 24 cm. \$4.00. 1504

Note: This comprehensive manual presents the results of a lifetime of study by Bruce Fink, formerly Professor of Botany, Miami University, Oxford, Ohio. Following his death in 1927, the manuscript was completed for publication by his former assistant, Joyce Hedrick (Mrs. Volney H. Jones), closely following Professor Fink's plans and ideas. A general discussion of the morphology and reproduction of the lichens is given in the introduction. This is followed by descriptions of 1,578 species, varieties, and forms belonging to 178 genera and 46 families. Keys to the families, genera, and species are given. The illustrations consist of 47 plates representing 63 species.

WOLFE, JOHN NICHOLAS

A catalog of the lichens of Ohio, with notes on geographic distribution in the state and a key to 80 genera. Columbus, O.: The Ohio State University, 1940. 50 p. illus. 25 cm. (Ohio State University. Ohio State University studies. Ohio Biological Survey. Bulletin no. 36. Vol. VII, no. 1.) Paper, \$0.75. 1504a

Note: Contains notes on 331 species and sub-species, of which 245 are represented by herbarium specimens seen by the author. The catalogue is based on collections made and determined by the author, and only synonyms used in the Ohio literature have been used. Accompanying the list are notes on habitats and substrata, as well as on geographic distribution within the state by counties. The key to 80 genera known or reported from Ohio is entirely original and is offered as an aid to Ohio botanists interested in the group. In addition, a brief summary of the work of Ohio lichenists has been made, with a complete list of titles of Ohio workers in the bibliography containing 51 references.

Mushrooms

CHRISTENSEN, CLYDE MARTIN

Common edible mushrooms. Minneapolis: The University of Minnesota Press, 1943. 124 p. illus. (part col.) 21 cm. \$2.50. 1505

Contents: About mushrooms: how and where they grow, how to identify them. The foolproof four: morel, puffball, sulphur shelf, shaggymane. Keyed description to edible mushrooms. Cooking and eating mushrooms: history of mushroom eating, recipes. Bibliography.

Note: A handbook for the general reader interested in mushrooms in a culinary way or as an amateur scientist. Fifty species are carefully described and illustrated, with information for locating and identifying them. Recipes are given for their preparation as food.

GRAHAM, VERNE OVID

Mushrooms of the Great Lakes region; the fleshy, leathery, and woody fungi of Illinois, Indiana, Ohio, and the southern half of Wisconsin and of Michigan. Chicago: The Chicago Academy of Sciences and the Chicago Natural History Museum, 1944. 390 p. illus. 24 cm. (Chicago Academy of Sciences. Special publication no. 5.) Paper, \$4.00. 1505a

Contents: Key to genera. Ascomycetes: Hypocreaceae. Xylariaceae. Geoglossaceae. Pezizaceae. Helvellaceae. Basidiomycetes. Thelephoraceae. Clavariaceae. Auriculariaceae. Tremellaceae. Dacryomycetaceae. Hydnaceae. Polyporaceae. Agaricaceae. Phallaceae. Hymenogastreae. Lycoperdaceae. Sclerodermataceae. Nidulariaceae. Dictionary of terms. Index. Plates.

Note: A systematic description of genera and species of not only those in the immediate vicinity of Chicago but also those which may be found in southern Wisconsin, southern Michigan, and all of Illinois, Indiana, and Ohio. The present work increases the number of species listed in Moffatt's *The higher fungi of the Chicago region*, Chicago, 1909-23, from 400 to 1200 described species. There are 49 plates comprising about 700 figures. Besides its taxonomic value the work is also useful to those interested in the edibility of these fungi from an economic viewpoint.

KRIEGER, LOUIS CHARLES CHRISTOPHER

The mushroom handbook, illustrated by photographs and drawings by the author. New York: The Macmillan Company, 1936. 538 p. illus. (part col.) 20 cm. \$3.50. 1506

Contents (abridged): Introduction. Field study of mushrooms and other fungi. Conditions under which mushrooms grow and thrive. Forest types. How to collect, study and prepare mushrooms for the herbarium. Life history and general characteristics of mushrooms. Economic importance of fungi. Common edible mushrooms. Growing mushrooms. Poisonous mushrooms, "toadstools." The wood-destroying fungi. The literature on mushrooms and their allies. Systematic account of selected larger fungi. Names of the principal authors of fungus species. Bibliography. Glossary of technical terms. Index.

Note: A complete handbook that is scientifically accurate but written in language that is not too technical. Detailed descriptions and thirty-two color plates enable the amateur to safely identify the various types of mushrooms. Intended also for the student and the collector, the book includes an extensive bibliography, an alphabetical index to the literature for identification of the higher fungi, and more than a hundred black and white drawings and photographs. It was published in Albany, New York, 1935, as New York State Museum Handbook 11 under the title *A popular guide to the higher fungi (mushrooms) of New York State*.

THOMAS, WILLIAM STURGIS

Field book of common mushrooms, with a key to identification of the gilled mushrooms and directions for cooking those that are edible. New and enlarged edition. With 62 illustrations in color and black and white. New York: G. P. Putnam's Sons, 1936. 369 p. illus. (part col.) 18 cm. (Putnam's nature field books) \$3.50. 1506a

Contents: How to collect and examine mushrooms. Gilled mushrooms, their propagation and structure. How to use the key. Table of features of gilled mushrooms used in their identification. Key to common gilled mushrooms. Pictorial key to genera. Descriptions of genera and species of common gilled mushrooms. Common mushrooms other than those with gills. Mushrooms as food. Mushrooms as food and general directions for preparing and cooking them. Special recipes for preparing various species of edible gilled mushrooms for the table. Glossary. Names of gilled mushrooms in the key with translation of their botanical names, their derivation and pronunciation. General index. Index to botanical names of genera and species.

Note: A pocket-size field manual designed to assist persons who are interested in mushrooms in identifying some of the species of gilled fungi found growing in fields, woods, and door-yards. The method of the key is original with the author, and covers 120 species which are also described and illustrated. In the second edition attention is given also to some of the common mushrooms other than those with gills.

Other Fungi

ARTHUR, JOSEPH CHARLES

Manual of the rusts in United States and Canada; illustrations by George B. Cummins. Lafayette, Ind.: Purdue Research Foundation, 1934. 438 p. illus. 23 cm. \$6.00. 1506h

Contents (abridged): Abbreviations for authors of rust species. Abbreviations for authors of host plants. Abbreviations for states, provinces and territories. Explanation of terms and usage. Glossary. Key to the families and tribes. Melampsoraceae. Pucciniaceae. Form-genera. Supplement. Index of host names. Index of rust names.

Note: This technical work for the botanist is both a serviceable manual in the determination of collection of rusts, and a classification showing the relationship of species and genera. The geographical area covered is from Greenland and the Aleutian Islands south to the southern limits of the United States, but 128 subtropic species which invade the United States are also noted. The supplement contains one species additional to the main text.

BESSEY, ERNST ATHEARN

A text-book of mycology. With one hundred thirty-nine illustrations. Philadelphia: The Blakiston Co., 1935. 495 p. illus. 22 cm. \$4.00. 1507

Contents: Introduction. The non-filamentous fungi. Filamentous fungi: Phycomycetaceae. Phycomycetaceae: Peronosporales. Phycomycetaceae: Sub-class Zygomycetaceae. The higher fungi: Carpomycetaceae. Class Ascomycetaceae: Laboulbeniales and Discomycetes. Ascomycetaceae: The "Pyrenomyces". Ascomycetaceae: Erysiphales, Aspergillales, Saccharomycetales. Teliosporae: Rusts and smuts. Basidiomycetaceae: Introduction and heterobasidial orders. Basidiomycetaceae: Agaricales. Basidiomycetaceae: Gasteromycetaceae. Fungi imperfecti: The imperfect fungi. Guide to the literature for the identification of fungi. Index.

Note: This book discusses the structure, life history, and classification of the more important groups of fungi. A chapter is devoted to the literature for the identification of fungi. The text is designed for an introductory course in college.

BOYCE, JOHN SHAW

Host relationships and distribution of conifer
rusts in the United States and Canada. New
Haven, Conn.: Connecticut Academy of Arts
and Sciences, 1943. 149 p. 24 cm. (Connecticut
Academy of Arts and Sciences. Transactions.
Vol. 35, October, 1943) Paper, \$2.00. 1507a

Contents: Introduction. Discussion of genera: *Caeoma*, *Calyptraspora*, *Chrysomyxa*, *Coleosporium*, *Cronartium*, *Gymnosporangium*, *Hyalospora*, *Melampsora*, *Melamporella*, *Melamporioidium*, *Milesia*, *Peridermium*, *Pucciniastrum*, *Uraecium*, *Uredinopsis*. Literature cited, Index of pycnial and aecial hosts. Index of uredial and telial hosts. Index of rusts.

Note: Many rust fungi are damaging to forest trees, and control of these pathogens is dependent on knowledge of their complicated life histories and host relationships. The writer's work of 25 years in the applied field of forest pathology is made the basis of the present collection of information regarding these tree rusts, including the *Gymnosporangium* and *Cronartium*. In the discussion of the genera the rust nomenclature followed is largely that of J. C. Arthur's *Manual of the rusts in United States and Canada*, Lafayette, Ind., 1934 (see Index), with some deviations which the author's experience has shown to be desirable. An extensive bibliography of 558 titles is included.

CHARDON, CARLOS EUGENIO, AND RAFAEL A.
TORO

Mycological explorations of Venezuela. Rio Piedras, Puerto Rico: The University of Puerto Rico, 1934. 353 p. illus. (part col.) 23 cm. (Monographs of the University of Puerto Rico. Series B. Physical and biological sciences. No. 2) Paper, \$2.00. 1508

Contents: Introductory remarks. A review of Venezuelan mycology. Narrative of travel. Physiography and life zones in the Andes of Venezuela. Myxomycetes. Phycomycetes. Discomycetes. Hemisphaeriales. Perisporiales. Hypocreales. Dothideales. Fimariates. Sphaeriales. Xylariaceae. Fungi imperfecti. Cercosporae. Ustilaginales. Uredinales. Hymenomycetes. Gasteromycetes. Fungi of doubtful affinity. List of new species described. Host index. Index of genera. Explanation of plates. Errata and omissions. Plates.

Note: A study of collections made in 1930 and 1932 illustrating the mycology of Venezuela. The report covers 667 species of which 92 are new. The work is a continuation of the "Mycological explorations of Colombia," published in the *Journal of the Department of Agriculture of Puerto Rico*, Volume xrv, pages 195-369, 1930. Several of the papers include bibliographies. Of the twenty papers, ten were prepared by members of the faculties of American universities, including Cornell, Harvard, Georgia, North Carolina, and Pennsylvania State College, a teacher at the University of Toronto, and a member of the staff of the New York Botanical Garden.

CLEMENTS, FREDERIC EDWARD, AND CORNELIUS L. SHEAR

The genera of fungi. Illustrated by Edith S.

Clements. New York: The H. W. Wilson Company, 1931. 496 p. illus. 26 cm. \$5.00. 1508a

Contents: Introduction. System of classification. List of key initials. General key to families. Key to the genera. List of types and synonyms. Bibliography. Glossary. Index.

Note: This volume constitutes a second edition of the authors' earlier reference work of the same title published in 1909, and contains slightly more than 5,000 generic names or an increase of about 2,100 over the earlier edition. All known genera are brought in a form in which tentative identifications can be made. The original publications are cited so that detailed descriptions of the forms may be found. Intended as a guide for students and amateurs of mycology as well as for professional mycologists and pathologists. There are 58 plates of drawings illustrating about 650 type specimens of fungi. The Myxomycetes, Bacteria, and Myxobacteria have been omitted in this revision.

COKER, WILLIAM CHAMBERS, AND ALMA HOL-
LAND BEERS

The Boletaceae of North Carolina. Chapel Hill, N.C.: The University of North Carolina Press, 1943. 96 p. illus. (part col.) 26 cm. \$7.00.

Contents: The genus *Boletus*. Key to the species of *Boletus*. Supplementary key to the species of *Boletus*. Descriptions of species. The genus *Boletinus*. The genus *Strobilomyces*. Literature list. Index.

Note: A systematic description of a group of fungi found in the region of Orange county and in the Blue Ridge and Alleghany Mountains of the state. The work is intended for specialists, and the species descriptions include information on size, appearance, spores, region where found, and references to the pertinent literature, including previously published illustrations. Most of the illustrations are reproductions in black and white of photographs. However, there are five plates of camera-lucida drawings and six color plates. The bibliography gives 50 references to literature published between 1801 and 1941. The work represents observations and studies made over a period of 40 years.

COUCH, JOHN NATHANIEL

The genus *Septobasidium*, with frontispiece, 114 plates and 60 text-figures. Chapel Hill: The University of North Carolina Press, 1938. 480 p. illus. 26 cm. \$5.00. 1510

Contents: Preface. The fungus-insect relationship. Pathological considerations and control methods. Geographical distribution, host trees and host insects. Structural features of taxonomic importance. Hybridization. Cytology. Relationship. Generic description. Key to species. Description of species. Notes on incompletely known species. Notes on excluded species. Literature list. Index.

Note: The purpose of this work is to assemble descriptions and illustrations of the type species of *Septobasidium*. It includes descriptions with photographs and line drawings of about 175 species. About 90 of the descriptions are of the old original types, most of which have never been adequately described and only a few of which have been illustrated. Of the remainder, 27 have been previously described by the author and 55 new ones are described and illustrated here for the first time. The genus is practically worldwide in distribution, is very abundant in certain localities, and occurs on a great variety of wild and cultivated woody plants, as citrus, apple, tea, rubber, etc., sometimes causing much damage.

FAULL, JOSEPH HORACE

Taxonomy and geographical distribution of the genus *Milesia*. With nine plates. Jamaica Plain, Mass.: The Arnold Arboretum of Harvard University, 1932. 138 p. illus. 25 cm. (Arnold Arboretum of Harvard University. Contributions. II) Paper, \$3.00. 1510a

Contents: Introduction. Nomenclature. Historical résumé. Hosts. Geographical distribution. The taxonomy of *Milesia*. Fern hosts and the species of *Milesia* that occur on them. The species of *Milesia*, the two generations of which are known, and their alternative hosts. Species of *Milesia* and their fern hosts. Ex-

cluded species. Acknowledgments. Summary. Bibliography. Addendum to "v. species on Dryopteris." Explanation of plates. Index.

Note: A comprehensive treatise in monographic form of the most unique and least understood genus of all the rust fungi. In taxonomic treatment it evaluates each historical reference both as to genus and species, and for geographical distribution embraces all known material throughout the world. Consonant with the accepted definition of the genus, *Milesia* is defined in this paper as a genus of white-spored rusts, characterized by immersed, hemispherical spermogonia, peridermis, uredinia with a peridium and non-catenulate uredospores, and many-celled, intraepidermal teliospores. Fifty-one references are listed.

FAULL, JOSEPH HORACE

Taxonomy and geographical distribution of the genus *Uredinopsis*. With six plates. Jamaica Plain, Mass.: The Arnold Arboretum of Harvard University, 1938. 120 p. illus. 26 cm. (Arnold Arboretum of Harvard University. Contributions. xi) Paper, \$2.00. 1510b

Contents: Introduction. Nomenclature. Morphology. Hosts. Geographical distribution. Phylogeny. Taxonomy. Species of *Uredinopsis* and their fern hosts. Fern hosts and the species of *Uredinopsis* that occur on them. Exclusions. Acknowledgments. Summary. Bibliography. Explanation of plates. Index.

Note: Twenty-five species of *Uredinopsis*, two varieties, and one form are recognized in this monograph; eight species, two varieties, and one form are described as new. *Uredinopsis* is regarded as a primitive genus, perhaps the most primitive of the living rust fungi. There are 30 figures and 54 references.

FITZPATRICK, HARRY MORTON

The lower fungi. Phycomycetes. New York: McGraw-Hill Book Company, Inc., 1930. 331 p. illus. 24 cm. (McGraw-Hill publications in the agricultural and botanical sciences) \$4.00. 1511

Contents: Introduction. Phycomycetes. Chytridiales. Ancylistales. Blastocladiiales. Monoblepharidales. Saprolegniales. Peronosporales. Mucorales. Entomophthorales. Phycomycetous affinities of the Hemiascomycetes. Index.

Note: A comprehensive general reference work on the Phycomycetes. Keys are provided to all the known genera.

FRYE, THEODORE CHRISTIAN, AND LOIS CLARK

Hepaticae of North America. Seattle, Wash.: University of Washington, 1937. 2 v. illus. 25 cm. (University of Washington. Publications in biology. Volume 6, no. 1-2) Paper, Part 1, \$1.50; part 2, \$2.00. 1511a

Contents: Part I, Ricciaceae. Marchantiaceae. Sphaerocarpaceae. Rullaceae. Metzgeriaceae. Part II, Jungermanniaceae. Haplomitriodeae. Ptilidioideae. Marsupelloideae. Lophocoleoideae. Southbyioideae. Nardioideae.

Note: The first two parts of a continuing series (part III appeared in 1945) presenting a systematic classification of the liverworts and scale mosses of North America, with descriptions, illustrations or references to illustrations, type locality, and citations to original literature. Five hundred thirty-two titles are listed in the provisional bibliography to part I.

GARRETT, ALBERT OSBUN

The Uredinales or rusts of Utah. Salt Lake City, Utah: The University of Utah, 1937. 81 p. illus. 25 cm. (University of Utah. Bulletin. Vol. 28, no. 7. Biological series. Vol. 4, no. 1) Paper, \$1.25. 1511b

Contents: Preface. Key to genera. Melampsoraceae. Pucciniaceae. Uredinales imperfecti. Index of rusts. Index of hosts.

Note: The catalogue of rusts presented in this paper is the result of 34 years' work in collecting and observation by the author. A total of 185 species is presented, together with synonymy, citations of original literature, and pertinent notes on their economic and taxonomic importance. There are eight plates containing 69 figures.

GARRETT, ALBERT OSBUN

The Ustilaginales or smuts of Utah. Salt Lake City, Utah: The University of Utah, 1939. 23 p. illus. 25 cm. (University of Utah. Bulletin. Vol. 29, no. 9. Biological series. v. 4, no. 2) Paper, \$1.25. 1511c

Note: A descriptive catalogue of families, genera, and species, based on the author's extensive study and collections made between 1902 and 1939. Four plates presenting 66 figures are included, together with an index of smuts and an index of hosts.

GILKEY, HELEN MARGARET

Tuberales of North America. Corvallis, Ore.: Oregon State College, 1939. 63 p. illus. 26 cm. (Oregon State monographs. Studies in botany. No. 1) Paper, \$0.50. 1511d

Contents (abridged): Introduction. Vegetative structure and reproductive bodies. Reproduction. Phylogeny. Acknowledgments. Order Tuberales: Family Tuberales. Bibliography. Plates and figures. Index.

Note: Until slightly more than 50 years ago, when Dr. H. W. Harkness on the Pacific and Dr. Roland Thaxter on the Atlantic coasts made their first collections of specimens belonging to this order, Tuberales were unknown in America. The status of the order in California was published in 1899 and revised in 1916. Further than this, no attempt has previously been made to assemble the scattered data relating to the known Tuberales in America. The object of the present paper is to crystallize this heterogeneous material into usable form. Fifty-one titles are listed in the bibliography and there are 70 figures.

HAGELSTEIN, ROBERT

The Mycetoza of North America, based upon the specimens in the herbarium of the New York Botanical Garden. Mineola, N. Y.: The Author, 1944. 306 p. illus. (part col.) 24 cm. \$6.00. 1511e

Contents: Preface. The Mycetoza (introduction to life history). Glossary. Classification with families and genera. Description of genera and species. Conclusion. Literature cited or consulted. Index to genera and species. Explanation of plates.

Note: The classification and division of families in this annotated descriptive list of slime-molds of North America follows that of Lister, the species within a genus being arranged in the order of affinities to assist in locating a species. Complete lists of synonyms are not given inasmuch as the reader is referred to other works for synonymy. Description, type locality, habitat, distribution, and related information are given for each species listed, with text illustrations or references to previously published illustrations. The bibliography lists about 750 books, monographs, and papers from the world literature. There are 4 color plates and 12 in black-and-white.

HART, HELEN

Morphologic and physiologic studies on stem-rust resistance in cereals. Washington, D.C.: Government Printing Office, 1931. 76 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 266) \$0.15. 1512

Contents: Introduction. Historical review. Host structure and the relation of susceptible host tissue to rust resistance. Pustule formation. Relation of size of collenchyma strands to formation of pustules. Structure of the epidermis and its resistance to rupture. Structure of the collenchyma. Effect of fertilizers on structure. Relation of stomatal behavior to stem-rust resistance in wheat. Uneven or one-sided infection of peduncles in the field. Effect of other diseases on resistance of wheat to stem rust. Discussion. Summary. Literature cited.

Note: This bulletin deals with the morphological and functional stem-rust resistance of wheat varieties. It was known that there were certain discrepancies in the type of infection on seedlings in the greenhouse and that on mature plants in the field. The author studied many varieties of wheat to determine whether they possessed a morphological or functional type of resistance that would modify the physiological reaction to viru-

lent rust forms. The results are published in this bulletin, the studies for which were made in cooperation with the Minnesota Agricultural Experiment Station.

HOTSON, JOHN WILLIAM

Key to the rusts of the Pacific Northwest. Seattle, Wash.: University of Washington Press, 1934. 193 p. illus. 25 cm. (University of Washington publications in biology. Vol. 3) \$1.50. 1513

Contents (abridged): Introduction. Some rust characteristics. Sources of information. Key to the rusts. Key to the rusts in relation to the hosts. Index of host names. Index of rust names.

Note: A list, for the botanist, of all the rusts reported in the states of Washington, Oregon, Idaho, and Montana. The families of the rusts and the genera within the families are arranged alphabetically. An attempt is made at separating the various rusts by means of a key.

KARLING, JOHN SIDNEY

The simple holocarpic biflagellate Phycomycetes, including a complete host index and bibliography. New York: Published by the Author, 1942. 123 p. illus. 27 cm. Price, ? 1513a

Contents: Introduction. Woroniaceae: *Woronina*. *Pyrrhosorus*. *Rosellopsis*. Ectrogellaceae: *Ectrogella*. *Eurychasma*. *Eurychasmidium*. *Aphanomyces*. Olpidiopsidaceae: *Olpidiopsis*. *Pseudolpidium*. *Pseudophaerita*. *Blastulidiopsis*. *Pythiella*. *Sirolpidiaceae*: *Sirolpidium*. *Pontisma*. *Petersenia*. *Lagenidiaceae*: *Lagenidium*. *Lagenidiopsis*. *Myzocytiium*. *Lagena*. Doubtful genera. Excluded genera. Phylogeny and relationships: Ectrogellaceae. *Sirolpidiaceae*. *Olpidiopsidaceae*. *Lagenidiaceae*. Hosts and bibliography: Plant hosts. Animal hosts. Special index. Subject index. Author index.

Note: The fungi presented in this descriptive catalogue comprise a heterogeneous collection of approximately 80 species which are characterized by relatively small or reduced holocarpic thalli and biflagellate zoospores. The work is the second in a series of lectures presented to graduate and research students of mycology at Columbia University on the origin, development, phylogeny, and evolution of the lower organisms. Very few technical terms are used in the text and separate bibliographies are provided at the end of each chapter, together with an inclusive bibliography in the final chapter. There are 25 plates covering approximately 500 figures.

MACBRIDE, THOMAS HUSTON, AND G. W. MARTIN

The Myxomycetes; a descriptive list of the known species with special reference to those occurring in North America. New York: The Macmillan Company, 1934. 339 p. illus. 24 cm. \$6.00. 1514

Contents: Prefatory note. Prefatory introduction. Subclass Exoporeae. Subclass Myxogastres. Order Physarales. Order Stemonitales. Order Liceales. Order Trichiales. Supplementary notes. Appendix: Names not recognized in text. Bibliography. Index.

Note: A systematic classification of the Myxomycetes or group of fungus plants known as slime moulds, based on Macbride's *North American slime moulds*, New York, 1922. The present work enlarges the scope to include slime moulds of the world and the number of species has consequently been enlarged, with several revisions of classification based on existing literature in the field. There is a lengthy bibliography and 21 pages of drawings made from microscope studies.

MATTHEWS, VELMA DARE

Studies on the genus *Pythium*. Chapel Hill: The University of North Carolina Press, 1931. 136 p. illus. 26 cm. \$3.00. 1515

Contents: Introduction. Methods and culture media. Taxonomy. Distribution and habitat. Mycelium. Sporangia. Conidia. Zoospores. Sexual organs. Family Pythiaceae and key to the genera. Genus *Pythium* and key to the species. Descriptions of the species of *Pythium*. Species omitted. Literature. Index.

Note: An attempt is made to give descriptions of all the species of *Pythium* which had been discovered at the time of publication, and to report on 20 species which have been isolated by the writer. Of these, five are considered new. Keys are given to the genera of the family Pythiaceae and to the species of the genus *Pythium*. Several species are reported from the United States for the first time. There are 29 zinc line plates, 26 from original drawings, and three, copies from illustrations of species which the writer has not seen. There is an extensive bibliography.

MIDDLETON, JOHN TYLOR

The taxonomy, host range, and geographic distribution of the genus *Pythium*. Lancaster, Pa.: Lancaster Press, Inc., 1943. 171 p. illus. 23 cm. (Torrey Botanical Club. Memoirs, Harold W. Rickett, editor. Vol. 20, no. 1) Paper, \$2.00. 1515a

Note: A contribution towards a better understanding of the species, their taxonomic status, and their phylogeny. An effort has been made to secure from various hosts and localities as many cultures as were available of the described species, since a study of a group of isolates is held to be more representative than the study of a single isolate, and enables the investigator to determine the extent and nature of variation within a natural system. As a further aid to students of the genus and plant pathologists encountering members of the genus as plant pathogens, information relative to host and geographic distribution is included. In addition to a summary and condensation of the available literature on this phase of the work, the extent and variety of hosts have been materially amplified. About 800 references are listed in the bibliography.

MILLER, LEE WALLACE, AND J. S. BOYLE

The Hydnaceae of Iowa. Iowa City: University of Iowa, 1943. 92 p. illus. 23 cm. (University of Iowa studies in natural history. Vol. 18, no. 2) \$0.40. 1516

Contents: Introduction. The Hydnaceae of Iowa. Literature cited. Index.

Note: A monograph on a fungi family for the specialist. Includes a key to the genera.

PRINCE, ALTON ERNEST, AND FERDINAND HENRY STEINMETZ

Gymnosporangium rusts in Maine and their host relationships. Orono, Me.: University Press, 1940. 46 p. 23 cm. (University of Maine studies. Second series, no. 50. The Maine bulletin, Vol. XLII, no. 12) Paper, \$0.50. 1516a

Contents: Acknowledgments. Method of inoculation. Comparative studies of *Gymnosporangium nidus-avis*. Other *Gymnosporangium* rusts in Maine. Summary. Literature cited. Appendixes.

Note: In this paper the results of the critical studies of *G. nidus-avis* and *G. juvenescens* are presented first, and secondly the data concerning ten other species occurring in Maine follow. In the appendixes are keys based upon the telial and aecial stages of *Gymnosporangium* species occurring in Maine, together with the synonymy of *G. nidus-avis* and copies of the labels of the specimens of Maine *Gymnosporangium* rusts in the Blake herbarium. The scope of the investigation was to determine the presence of *G. juvenescens* Kern in Maine, to review and add to the literature, and to determine the range and distribution of *Gymnosporangium* rusts within the state together with their known host relationships.

SEAYER, FRED JAY

The North American cup-fungi (Operculates): supplemented edition; illustrated. New York: Published by the author, 1942. 377 p. illus. (part col.) 24 cm. \$6.50. 1517

Contents (abridged): Preface. General features of the group. Signs. Taxonomic treatment. Bibliographical notes. Explanation of plates. Index to recognized genera. Index to genera and

species. Supplement: Prefatory. General features of the group. Additions and corrections. Explanation of plates. Bibliography. Index to illustrations. Index to genera and species.

Note: This study for the botanist was first published in 1928. New material in this edition accounts for one-third of the paging. The bibliography is comprehensive, if not complete.

SNELL, WALTER HENRY

Three thousand mycological terms. Illustrations by Henry A. C. Jackson. Providence, R. I.: The Rhode Island Botanical Club, 1936. 151 p. illus. 18 cm. (Rhode Island Botanical Club. Publication no. 2) \$2.00. 1517a

Note: Intended for those who are not expert mycologists or who find it difficult to discover the meanings of many terms in present-day mycological literature. The list includes the technical terms ordinarily used in college courses in the morphology of the fungi and in mycology. In addition, special meanings are given for technical and ordinary words and phrases used particularly in describing the agarics, boletes, and polypores, for the benefit of amateur mycologists interested in collecting and identifying these higher fungi. Twelve plates containing about 150 figures are presented at the end of the book.

SPARROW, FREDERICK KROEBER

Aquatic Phycomycetes exclusive of the Saprolegniaceae and *Pythium*. Ann Arbor: The University of Michigan Press, 1943. 785 p. illus. 24 cm. (University of Michigan studies. Scientific series. Vol. xv) \$5.00. 1517b

Note: The orders Chytridiales, Blastocladiales, Monoblepharidales, Plasmidiophorales, Saprolegniales (except the Saprolegniaceae), Leptomitales, Lagenidiales, and Peronosporales (aquatic members, except *Pythium*) are systematically described. The Saprolegniaceae and *Pythium*, having been recently treated by other authors, are excluded. A general discussion of morphology and development, including such subjects as structure of the thallus, reproduction, life history, and cytology, precedes the account of each order. Six hundred thirty-seven text figures accompany the text, as well as a list of substrata, a bibliography, and index.

THAXTER, ROLAND

Contribution toward a monograph of the Laboulbeniaceae. Boston, Mass.: American Academy of Arts and Sciences, 1908-31. 4 v. illus. 29 cm. (American Academy of Arts and Sciences. Memoirs. Vol. XIII, no. VI; Vol. XIV, no. V; Vol. XV, no. IV; Vol. XVI, part I) Paper: Part II, 1908, \$7.00; parts III-IV, 1924-26, \$6.00 each; part V, 1931, \$7.00. 1517c

Contents (abridged): Part II: Laboulbeniineae. Ceratomyxetinae. Part III: The family Dimorphomycetaceae: The genus Polyandromyces. The genus Nycteromyces. The genus Dimorphomyces. The genus Dimeromyces. The genus Eudimeromyces. The genus Chitonomyces. Part IV: Addendum to Dimorphomyces. Addenda to Dimeromyces. The genus Trenomyces. The genus Rickia. The genus Diaphoromyces. The genus Rhipidiomyces. The genus Limnaioomyces. Addenda to Chitonomyces. The genus Tettigomyces. The genus Eucantharomyces. The genus Camptomyces. The genus Porophoromyces. Part V: Peyritschellaceae (concluded). Heterothallic Laboulbeniaceae. Homothallic Laboulbeniaceae. Ceratomyxetinae.

Note: The first of these papers on the general history, literature, morphology, and taxonomy of the Laboulbeniales appeared in 1896 as Volume XI, no. 3 of the Memoirs, but is no longer in print. This group of fungi found on insects, especially beetles, consists of about 150 species and is known principally from the research and writings of the present author. Before proceeding to a systematic consideration of the species and genera here described and illustrated, the writer gives a review of the literature which has appeared since 1895, and comments on the morphology, development, etc., as these have been affected by new data. A final part was projected in 1930 to include the largest genus, Laboulbenia, but this has as yet not appeared. There are about 160 plates containing 3,000 figures.

WEHMEYER, LEWIS EDGAR

The genus *Diaporthe* Nitschke and its segregates. Ann Arbor: University of Michigan Press, 1933. 349 p. illus. 28 cm. (University of Michigan studies. Scientific series. Vol. IX) \$3.50. 1518

Note: A monographic study covering all the fungi which have been described as species of *Diaporthe*. The genus is recognized in a restricted sense with 70 species. The genera *Cryptodiaporthe* (19 species), *Diaporthella* (6 species) are treated as segregates. Complete descriptions and keys are given for the genera and species. Eighteen plates furnish illustrations for many of the species. Information is given concerning the species which have been excluded.

WEHMEYER, LEWIS EDGAR

A revision of *Melanconis*, *Pseudovalsa*, *Prosthecium*, and *Titania*. Ann Arbor: The University of Michigan Press, 1941. 161 p. illus. 24 cm. (University of Michigan studies. Scientific series. Vol. XIV) \$2.50. 1519

Note: Dr. Wehmeyer has treated all described species of the genera *Melanconis*, *Pseudovalsa*, and *Calospora*, with full descriptions and synonymy of all valid species, most of which are illustrated. The excluded species are discussed and placed, and the author sets forth his conception of the phylogeny of the group. Keys to the genera and species are included.

WOLF, FREDERICK TAYLOR

The aquatic Oomycetes of Wisconsin. Part I. Madison, Wis.: The University of Wisconsin Press, 1944. 64 p. illus. 23 cm. \$1.35. 1520

Contents (abridged): Order Lagenidiales. Order Blastocladiales. Order Monoblepharidales. Order Saprolegniales. Order Leptomitales. Order Pythiales. Literature cited.

Note: A correlation of the results of investigations, including collections and taxonomic work, of certain research workers on the Saprolegniaceae or aquatic fungi, including descriptions of the forms, records of the collections, and a key for their identification. The author has worked largely from existing literature in the field but has also cultured several thousand water and soil samples for aquatic fungi, to determine presence in Wisconsin.

Plant Chemistry and Physiology

ANTEVS, ERNST

Rainfall and tree growth in the Great Basin. Washington, D.C.: Carnegie Institution of Washington and the American Geographical Society of New York, 1938. 97 p. illus. 26 cm. (American Geographical Society. Special publication no. 21) \$2.50. Copies of this book are not for sale by Carnegie Institution, but may be purchased from the American Geographical Society, Broadway and 156th Street, New York City. 1521

Contents (abridged): Rainfall fluctuations during the past hundred years. Tree growth in relation to rainfall.

Note: Part I records the data collected by the author in the northwestern part of the Great Basin in 1931. Sources of these data were interviews with officials and long-time inhabitants, newspaper files, observation of lake levels, radial samples from stumps of trees, and relevant literature in the Library of Congress and the library of the American Geographical Society. Part II contains data obtained from radial samples, taken from trees at Susanville, California, and near Lakeview, Oregon. The relationship between rainfall fluctuation and tree growth is studied on the basis of this data.

BAILEY, CLYDE HAROLD

The constituents of wheat and wheat products. New York: Reinhold Publishing Corporation, 1944. 332 p. illus. 23 cm. (American Chemical Society monograph series. [No. 96]) \$6.50.

1522

Contents: Early researches on wheat proteins. Prolamins of wheat. Glutelins of wheat. Water- and salt-soluble proteins. Crude protein and crude gluten. Nucleic acid. Non-protein nitrogen. Starch. Sugars. Gums, pentosans, hemicelluloses, and cellulose. Lipids, phospholipids and sterols. Minerals. The halogens, sulfur and selenium. Acidity. Wheat and flour pigments. Vitamins of wheat and wheat products. Author index. Subject index.

Note: This volume, mainly a survey of the knowledge of the substances present in wheat, will be of value to chemists in the food and cereal processing industries. Generally speaking, such topics as the biochemistry of the living wheat plant, the processing of wheat and wheat flour, and the chemistry of baking, are omitted. The literature of the subject is covered fully by means of footnote references and extensive author and subject indexes.

CURTIS, OTIS FREEMAN

The translocation of solutes in plants; a critical consideration of evidence bearing upon solute movement. New York: McGraw-Hill Book Company, Inc., 1935. 273 p. illus. 23 cm. (McGraw-Hill publications in the agricultural and botanical sciences, E. W. Sinnott, consulting editor) \$3.00.

1523

Contents: The significance of translocation and earlier opinions as to tissues involved. Evidence for the upward transport of organic matter through the phloem. Evidence for the upward transport of nitrogen and salts through the phloem. Evidence indicating downward transport through the xylem. A comparison of criteria and methods used to determine the tissues of transport. The method of movement through the phloem. Possible relations between solute distribution and behavior. Bibliography. Index.

Note: A critical survey of the various conceptions among botanists and horticulturists as to the tissues concerned in translocation, as well as to the mechanics of transport. The evidence offered is in opposition to and support of each of these theories, and considers the bearing of translocation studies upon problems of dominance of one part over others and regeneration.

GOLDSMITH, GLENN WARREN, AND A. L. HAFENRICHTER

Anthokinetics; the physiology and ecology of floral movements. Washington, D.C.: Carnegie Institution of Washington, 1932. 198 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 420) Paper, \$3.00; cloth, \$4.00. 1524

Contents: Introduction. *Tulipa gesneriana*. *Taraxacum officinale*. *Aster bigelovii*. *Arctotis grandis*, and *Dimorphotheca aurantiaca*. *Tragopogon pratensis*. *T. porrifolius*. *Crepis alpina* and related flowers. *Acroclinium roseum* and similar flowers. *Eschscholtzia californica*. *Mentzelia lindleyi*, and similar flowers. The gentians and other ephemeral hemeranthous flowers. *Mentzelia nuda*. *M. multiflora*, and *Silene noctiflora*. Ephemeral nyctanthous flowers. Discussion.

Note: A study of plant movements, both of growth and of turgidity. The field behavior of the flower is described and an attempt made to ascertain its ecological importance. The mechanics of the tissues involved were studied by observations in the field, supplemented by others in the laboratory under carefully controlled conditions.

HAASIS, FERDINAND WEAD

Diametral changes in tree trunks. Washington, D.C.: Carnegie Institution of Washington, 1934. 103 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 450) Paper, \$1.50; cloth, \$2.00.

1525

Contents (abridged): Introduction: historical—descriptive. Diurnal fluctuations: species for which observed—general similarity of pattern—amount of daily fluctuation—similarity to other fluctuations due to evaporating power of air. Seasonal shrinkage: occurrence—conditions affecting shrinkage and rehydration. Traumatic and prolonged shrinkage: short- and long-period shrinkage—shrinkage following installation of dendrograph. Diametral increases: rehydration—growth. Significance of diametral changes: location of fluctuation—relation of diametral fluctuation to liquid tension—other causes of fluctuations. List of individual trees and other plants. Summary. Bibliography.

Note: Records made with the MacDougal dendrograph during the years 1918-1933 in California and Arizona on trees of 23 species, mostly Monterey pine and redwood. The bibliography includes titles of 62 papers presenting results of dendrographic studies. The changes discovered and the factors affecting and causing these changes are reported and discussed.

HARRIS, JAMES ARTHUR

The physico-chemical properties of plant saps in relation to phytogeography; data on native vegetation in its natural environment. Compiled from original records and edited by a committee of Dr. Harris' colleagues in the University of Minnesota. Minneapolis, Minn.: The University of Minnesota Press, 1934. 339 p. 24 cm. \$4.50.

1525a

Contents: Part I, Papers on the physico-chemical properties of plant saps in relation to phytogeography: Physical chemistry in the service of phytogeography. The physico-chemical properties of plant tissue fluids. The importance of phyto-chemical studies in the field of plant geography, by Homer L. Shantz. Part II, Experimental data on the physico-chemical properties of the plant saps of the native vegetation: Collection of the data. Explanation of the code used in the tabulations. Western United States and the Hawaiian Islands. Eastern United States and Jamaica. Part III, Descriptions of stations at which specimens were collected: Common names used and their botanical equivalents. Western United States and the Hawaiian Islands. Eastern United States and Jamaica. Index to experimental data.

Note: It was Dr. Harris' plan to make a large series of measurements in all of the major ecological habitats and to analyze the data from the two standpoints of plant adaptability and the physical and chemical properties in the plant's environment. In this volume are presented approximately 12,000 series of analyses of the physico-chemical constants of plant saps, representing all the "native vegetation" records in Dr. Harris' files which were complete enough, at the time of his death, to be recorded. By arranging the plants of each state alphabetically according to their botanical names, the necessity of a separate index to species has been obviated.

HARVEY, RODNEY BEECHER

Plant physiological chemistry. New York: D. Appleton-Century Company, Inc., 1930. 413 p. illus. 23 cm. (The Century biological series, R. Hegner, editor) \$6.00.

1525b

Contents: Introduction: Mechanism of the transformation of materials in plants. Part I, General metabolism: Absorption and synthesis. Metabolism of inorganic nutrients. Chemosynthesis and the special metabolism of carbon, nitrogen, sulphur, and iron. Part II, Carbohydrates: Classification and properties of carbohydrates: Monosaccharides. Use of sugars in metabolism. Certain substances derived from sugars. Glucosides. Di-, tri-, and tetrasaccharides. Polysaccharides. Natural gums. Peptic substances. Cell wall constituents. Part III, Fats, lipides, and waxes. Part IV, Proteins: Composition and function of proteins. Synthesis of proteins. Cleavage of proteins. General protein metabolism. Part V, Photosynthesis: Material exchange in photosynthesis. Leaf pigments. The photosynthetic reactions. Products of photosynthesis. Part VI, Respiration: Material and energy relations in photosynthesis. Fermentation. Chemical transformation preceding oxidation. Oxidation and reduction. Respiratory enzymes. Bibliography. Indexes.

Note: A college text presenting the physiological chemical mechanism of the vital processes of plants. Most attention is given to the metabolic reactions, with some of the chemistry underlying the process, but complete description of the chemical compounds is omitted. There are about 500 references to American and European works in the bibliography.

HAWLEY, FLORENCE MAY

Tree-ring analysis and dating in the Mississippi drainage, with appended papers: Reflection of precipitation and temperature in tree growth, by Mildred Mott Wedel and Florence Hawley, and A new dendrochronograph, by E. J. Workman and Florence Hawley. Chicago: The University of Chicago Press, 1941. 110 p. illus. 24 cm. (The University of Chicago publications in anthropology. Occasional papers. No. 2) \$1.50. 1525c

Contents: History of study. Method and technique. Tree-ring analysis. Problems of tree-ring work in the Mississippi drainage. Summarized progress, results, and discussion. Syntheses. Ring measurements of twenty-two pine specimens. Ring measurements of fifteen oak specimens, central area. Master-charts. Locations represented by modern wood specimens in Chicago laboratories.

Note: Covering the largest area ever investigated for tree-rings, this study records the findings of increment borings, of V-cuts from stumps, from log piles of lumber and paper mills, and from the collection of specimens from old houses, bridges, dams, and other structures. Techniques have been developed for the conservation of sound specimens and for identification. A bibliography is provided.

HOAGLAND, DENNIS ROBERT

Lectures on the inorganic nutrition of plants. Waltham, Mass.: Chronica Botanica Company, 1944. 226 p. illus. 23 cm. (Prather lectures at Harvard University) \$4.00. 1526

Contents: A survey of problems of plant nutrition. Micro-nutrient chemical elements and plant growth. The absorption and accumulation of salts by plant cells. Upward movement and distribution of inorganic solutes in the plant. The growth of plants in artificial media in relation to the study of plant nutrition. Some biochemical problems associated with salt absorption. Aspects of the potassium nutrition of plants as illustrating problems of the system, soil-plant-atmosphere. Plates. General index. Author index.

Note: This series of lectures, based on the Prather Lectures at Harvard University delivered by the author in the spring of 1942, outlines a number of important problems of plant nutrition, with illustrative material derived from researches at the University of California. Scientific aspects of certain soil-plant interrelations, nutrient absorption and utilization, and artificial culture methods are primarily discussed. Trends of research in plant nutrition and opportunities for further exploration are stressed. The discussions have been prepared with consideration given to the broad interests of plant scientists who are not specialists in the subjects presented, but who wish to learn of the nature of problems of plant nutrition, especially of recent advances in this field, as they may have a bearing on related fields of research. The book is intended not only for the plant physiologist, but also for the general physiologist, the agronomist, horticulturist, plant pathologist, and soil scientist. There are references at the end of each chapter.

LEVITT, JACOB

Frost killing and hardiness of plants, a critical review. Minneapolis, Minn.: Burgess Publishing Co., 1941. 211 p. 27 cm. \$3.00. 1527

Contents: Part I, Frost killing: The occurrence of frost injury. Early theories of the causes of injury. The formation of ice in tissues. The course of the temperature drop during freezing. The moment of injury. The influence of non-penetrating solutes on injury. Summary. Part II, Frost hardiness: Effect of external factors on resistance. Correlation of resistance with morphological factors. Correlation of resistance with physiological factors. Summary. Part III, Current theories of the causes of injury and resistance: Theories concerned primarily with intracellular freezing. Theories concerned primarily with extracellular freezing. Conclusion. Bibliography.

Note: A monograph presenting abstracts of the results of various investigators in the field of so-called "winter injury" to plant life, covering the causes, the symptoms, and the methods of treatment. The plan followed is to present the results of each worker without comment, and then a digest at the end of each

section to present the author's own opinions and critical evaluation. The world literature on the subject has been consulted, and there is a long bibliography of works in English, German, French, and Russian.

LOOMIS, WALTER EARL, AND CHARLES A. SHULL

Methods in plant physiology; a laboratory manual and research handbook. New York: McGraw-Hill Book Company, Inc., 1937. 472 p. illus. 23 cm. (McGraw-Hill publications in the agricultural and botanical sciences, E. W. Sinnott, consulting editor) \$2.00. 1528

Contents: To the student. The water relations of plants. Transpiration. Plant nutrients. The role of diffusion in plants. Colloidal phenomena in plants. Photosynthesis. Plant pigments. Plant foods. Respiration. Plant enzymes. Growth and movement. Growth-differentiation. Balance and growth correlation. General laboratory procedures. The chemical analysis of plant materials. The estimation of sugars. The estimation of polysaccharides. The estimation of nitrogen. The estimation of plant lipids. Plant ash. Physical measurements. Measurement and control of plant environment. Statistical methods. Appendix. Index.

Note: A compilation of material for the use of instructors, students, and research workers. Demonstrations, laboratory experiments, and directions for bio-chemical, bio-physical, and bio-mathematical determinations are the main categories. The appendix includes 33 useful tables. A revised and partly rewritten version of Part I, Laboratory exercises, is available under the title: *Experiments in plant physiology*, New York: McGraw-Hill Book Company, Inc., 1939, 213 p., \$2.00.

MACDOUGAL, DANIEL TREMBLY

Studies in tree-growth by the dendrographic method. Washington, D.C.: Carnegie Institution of Washington, 1936. 256 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 462) Paper, \$2.25; cloth, \$2.75. 1528a

Contents: Action of cambium, trees observed, and apparatus used. The Monterey pine (*Pinus radiata*). Experimental defoliations. General considerations.

Note: This monograph presents the results of a study of the activities of the cambium of trees and its relation to the growth and other physiological changes in tree structure. Cambium is shown to require tonic external conditions such as temperature and adequate supplies of water and food-material, in which features it resembles all growing cell-masses. It is, however, a part of the organogenic mechanism of the tree, and after the whole organism has gone into a resting condition this generative layer may be re-activated only by hormonal agents originating in vegetative terminals or in flower-buds when these open before the leaves unfold. Observations with the dendrograph, which secures a continuously traced record of the changes in diameter of trunks, were directed primarily to measurements of additions to the woody cylinder by the maturation of elements derived from the cambium. The seasonal features of growth of certain species and their relationship to environmental and climatic conditions are discussed.

MARTIN, EMMETT VIRGIL

Studies of evaporation and transpiration under controlled conditions. Washington: Carnegie Institution of Washington, 1943. 48 p. illus. 25 cm. (Carnegie Institution of Washington. Publication 550) Paper, \$0.40. 1528b

Contents: Introduction. Evaporation: Methods; Control chamber. Evaporimeters. Temperature measurement. General experimental procedure. Results: Leaf-shaped evaporimeter. Dependence upon evaporimeter dimensions. Transpiration: Methods; Material. Temperature measurement. General experimental procedure. Results: Correlation with air temperature and relative humidity in calm air in darkness. Leaf-temperature relations. Relation of nighttime to daytime transpiration rates. Influence of wind. Influence of radiation. Relative transpiration. Certain energy considerations: Effect of size of surface. Effect of wind. Ecological applications: Vapor-pressure deficit. Dependence of transpiration rate on size of leaf. Relative transpiration. Summary. Literature cited.

Note: This paper deals with the correlation under controlled conditions between air temperature, relative humidity, and transpiration rate. The experiments were begun by measuring the transpiration rate of *Helianthus annuus* in darkness, the purpose being to evaluate the comparative influence of temperature and atmospheric moisture in producing the relatively low rates of transpiration found in regions of high elevation above sea level and to obtain more information concerning the much-debated question of the cooling effect of transpiration. These experiments yielded such marked response to changes in temperature that it seemed desirable to measure rates of evaporation from pieces of blotting paper shaped like the leaves employed, in order to find whether this degree of response differed appreciably from that of a purely physical evaporating surface. This led to a test of the validity of the expressions for evaporation from such surfaces as presented by Leighly, J.: "A note on evaporation," *Ecology*, vol. 18, p. 180-198, 1937, especially the formulation with respect to size and shape of evaporating surface.

MEYER, BERNARD SANDLER, AND DONALD B. ANDERSON

Plant physiology; a textbook for colleges and universities. New York: D. Van Nostrand Company, Inc., 1939. 696 p. illus. 23 cm. \$4.50. 1529

Contents: The field of plant physiology. Properties of solutions. Interfacial phenomena. Colloidal systems. Properties of sols and gels. Plant cells. Diffusion. Osmosis and osmotic pressure. Imbibition. Permeability. The osmotic quantities of plant cells. Loss of water from plants. The stomatal mechanism. Factors affecting transpiration. The movement of water through the plant. Soils and soil water relations. Absorption of water. Internal water relations of plants. The chlorophylls and the carotinoids. Photosynthesis. Factors affecting photosynthesis. Carbohydrate metabolism. Fat metabolism. Absorption of mineral salts. Utilization of mineral salts. Nitrogen metabolism. Digestion. Translocation of solutes. Respiration. Anaerobic respiration and the mechanism of respiration. Growth, assimilation, and accumulation. Growth hormones. Factors affecting growth. Growth correlations. Dormancy and germination. Growth periodicity. Plant movements. Index.

Note: This book is a comprehensive college text of plant anatomy and structure, and of plant processes and functions. It emphasizes the actual experimental results and the interpretation of plant processes in terms of physicochemical principles. A companion laboratory manual is the authors' *Laboratory plant physiology*, second edition, New York: D. Van Nostrand Company, 1941, 101 p., \$2.00.

MILLER, EDWIN CYRUS

Plant physiology, with reference to the green plant. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 1201 p. illus. 23 cm. (McGraw-Hill publications in the botanical sciences; E. W. Sinnott, consulting editor) \$7.50. 1530

Contents: The plant cell. Solutions and membranes in relation to the plant cell. The roots of plants. The intake of water by plants. The intake of solutes by the plant. The elements absorbed by the plant. The loss of water from plants. The formation of carbohydrates by the green plant. The nitrogen metabolism by the green plant. The fat metabolism of the green plant. The process of digestion in the green plant. The translocation of materials in plants. The process of respiration in plants. The process of growth in plants. Bibliography. Author index. Subject index.

Note: This book gives a complete survey of the field of plant physiology in a comprehensive and minutely detailed treatment that makes it suitable both as a text for advanced college students and as a reference work for investigators. The work is confined entirely to the physiology of the green plant; the findings of the leading American, English, and continental investigators are summarized. New material in this edition accounts for an increase of about 300 pages.

MITCHELL, JOHN WILLIAM, AND RUBY R. RICE

Plant-growth regulators. Washington, D.C.: Government Printing Office, 1942. 75 p. illus. 26 cm. (United States. Department of Agriculture. Miscellaneous publication no. 495) \$0.20. 1530a

Contents: Growth regulators and plants. What are growth-regulating substances and plant hormones? How to prepare and apply growth-regulating substances. Growth-regulating substances aid in the rooting of cuttings. How to treat cuttings. Control of preharvest fruit drop. Transplanting. Possible future uses for growth regulators. The use of growth-regulating chemicals in the rooting of cuttings (tables 1 to 5). Literature cited on transplanting and the rooting of cuttings. Index to plants.

Note: This publication is an introductory treatise on plant-growth regulators, describing their use, preparation, and application, and discussing their possible future uses. Fifty-one pages are devoted to tables reporting the use of growth-regulating chemicals in the rooting of cuttings covering the various coniferous trees and shrubs, broadleaf trees, broadleaf shrubs, herbaceous plants, and climbing and trailing plants, and showing for each variety scientific name, common name and horticultural varieties, month or season, preparation used, concentration, time, rooting time, percentage rooted for both treated and control plants, and remarks. The pamphlet is a compilation of results of work done by the Bureau of Plant Industry, United States Department of Agriculture, together with results of work done independently by many investigators associated with various institutions and governmental agencies.

RABER, ORAN LEE

Principles of plant physiology. Revised edition. New York: The Macmillan Company, 1933. 432 p. illus. 22 cm. \$3.25. 1531

Contents: Place of plant physiology, classification of the botanical sciences. The cell, the colloidal condition. Photosynthesis, general. The determining factors in photosynthesis. Chemistry of chlorophyll: The carotinoids. The photosynthetic process. Other ways of procuring food among the higher plants. Nutrition in the lower plants, chemosynthesis. Nitrogen assimilation. The nitrogen cycle. Nutritive and stimulative functions of salts. The balancing function of salts: ions and antagonism. The carbohydrates. Fats, waxes, and lipoids. Proteins. Allied and miscellaneous products. Enzymes. Hormones. Vitamins, auxinones. Diffusion of gases. Osmosis and imbibition. Loss of water. The ascent of sap. Digestion. Storage and translocation. Respiration. Anaerobic respiration and fermentation. General characteristics of growth. Specific growth factors. Irritability, polarity and correlation. Movement. Reproduction. Reproductiveness and seed germination. Death. Mechanism and vitalism. Index of authors. Index of subjects.

Note: Assumes a knowledge of elementary physics, chemistry, and botany on the part of the student, but is written for undergraduate college students rather than for specialists in the field.

RABER, ORAN LEE

Water utilization by trees, with special reference to the economic forest species of the north temperate zone. Washington, D.C.: Government Printing Office, 1937. 97 p. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 257) Paper, \$0.15. 1531a

Contents: Introduction. Absorption of water by trees. Storage of water in trees and water content of tissues. Water losses of trees. "Adaptations" of trees to dry conditions. Water consumption by trees. Summary and suggestions for research. Literature cited.

Note: This publication is intended as a summary of knowledge concerning the amounts of water utilized by forest trees, of the various problems associated with this utilization, and of the contributions to their solution. Its purpose is to enable students and workers to obtain a general perspective of the field and of some of the problems awaiting solution at the time of publication. Citation is given to 249 pieces of literature, chiefly in English and in German.

SEIFRIZ, WILLIAM ERNEST

The physiology of plants. New York: John Wiley & Sons, Inc., 1938. 315 p. illus. (part col.) 23 cm. \$3.50. 1532

Contents: Introduction. The colloidal state. The soil. Proto-plasm. The plant cell. Osmosis and the entrance of water. The ascent of water. The use, storage, and loss of water. Acidity. Salt requirements. Permeability and the protoplasmic membrane. Photosynthesis. Respiration. The carbon and nitrogen cycles. The movement and storage of foods. Foods. Cellulose and the

cell wall. Plant products. Hormones and growth regulators. Growth. Plant cultures. Reproduction. Plant movements. Plant associations. Environment. The living and the non-living. Index.

Note: Three qualities have been striven for in this book: the avoidance of finality in statement; frequent reminders of the bearing of plant physiology on commonplace experience; and a presentation as fluent and readable as is consistent with scientific accuracy. A background of general botany, physics, and chemistry is necessary. Bibliographical references are added at the close of each chapter. These are to be regarded merely as the author's choice of an introduction to collateral reading. The illustrations, of which there are both line drawings and photographs, have been collected from various sources; many are original with this volume. Theory and fact are blended in the presentation.

VAN DE SANDE-BAKHUYZEN, HENDRIK LEO

Studies on wheat grown under constant conditions; a monograph on growth. With contributions on the carbon and nitrogen content of the wheat plant, by Elizabeth P. Griffing and Carl L. Alsberg. Stanford University, Calif.: Food Research Institute, 1937. 400 p. illus. 23 cm. (Leland Stanford Junior University. Food Research Institute. Miscellaneous publications. No. 8) \$4.00. 1533

Contents (abridged): Part I, The growth curve in annual plants. Part II, Methods and materials. Part III, General growth features. Part IV, Dry weight and moisture content of the different organs. Part V, Dry weight and moisture of the standard plant. Part VI, Nitrogen and carbon of the organs. Part VII, Nitrogen metabolism in relation to growth and development. Bibliography. Index.

Note: A report of experiments carried on under the auspices of the Food Research Institute of Stanford University in 1925 and 1926. The experiments were conducted under constant conditions with only single variables modified. The object was to establish sound bases for use in studies designed to forecast wheat health from weather data.

WENT, FRITS WARMOLT, AND KENNETH V. THIMANN

Phytohormones. New York: The Macmillan Company, 1937. 294 p. illus. 22 cm. \$4.00. 1534

Contents: Introduction. Development of the hormone concept. The technique of auxin determinations. Formation and occurrences of auxins. The relation between auxin and growth. Auxin transport and polarity. The chemistry of auxins. The mechanism of the action. The growth of roots. Tropisms. Root formation. Bud inhibition. Other activities of auxins. General conclusions. Index.

Note: This monograph brings together the experimental work on all aspects of phytohormones and emphasizes its significance for general biological problems. Both the chemistry and physiology of these substances are included, and the morphogenetic process in which phytohormones are involved is discussed at some length. In connection with the discussion of experimental work there are many diagrams and drawings. A feature of the book is the full description of techniques used in plant hormone work.

WHITE, PHILIP RODNEY

A handbook of plant tissue culture. Lancaster, Pa.: The J. Cattell Press, 1943. 277 p. illus. 21 cm. \$3.75. 1535

Contents: Introduction. The history of plant tissue culture. The living materials. The laboratory. Nutrients. How cultures are started. Culture techniques. Growth measurements and their interpretation. Tissue culture and the study of problems in the pathology and general physiology of plants. Morphogenesis. Bibliography. Index.

Note: This book brings together the basic information needed by students and by investigators in the growing field of plant tissue culture. An adequate description is given of the various techniques employed together with considerable detail of experimental and physiological research fields to which the method lends itself. The author draws on his own extensive knowledge and offers many interesting leads for further research. The bibliography includes 457 references.

ZOOLOGY

General

BOGERT, CHARLES MITCHELL, AND OTHERS

Criteria for vertebrate subspecies, species and genera. New York: New York Academy of Sciences, 1943. 84 p. illus. 22 cm. (New York Academy of Sciences. Annals. Vol. XLIV, p. 105-188) Paper, \$1.00. 1539a

Contents: Introduction, by Charles M. Bogert. Criteria for subspecies, species and genera, as determined by researches on fishes, by Carl L. Hubbs. Lower categories in herpetology, by Emmett Reid Dunn. Criteria for subspecies, species and genera in ornithology, by Ernst Mayr. Criteria for vertebrate subspecies, species and genera: mammals, by E. Raymond Hall. Criteria for genera, species and subspecies in zoology and paleozoology, by George Gaylord Simpson. Criteria for species and their subdivision from the point of view of genetics, by W. Frank Blair.

Note: The purpose of these papers, presented at a joint symposium held by the American Society of Ichthyologists and Herpetologists and the American Society of Mammalogists at the American Museum of Natural History, April 3, 1942, is the discussion of criteria for the lower taxonomic categories. The papers were planned to deal primarily with methods used in vertebrate classification, and as a whole present a summary of information relevant to the problems involved in the interpretation of the processes of evolution.

DRIVER, ERNEST CHARLES

Name that animal; a guide to the identification of the common land and fresh-water animals of the United States, with special reference to the area east of the Rockies. With drawings by Olive Driver. Northampton, Mass.: The author, 1942. 527 p. illus. 23 cm. \$5.00. 1540

Contents: Preface. Introduction. Protozoa. Moss-like and jelly-like animals. Rotifers and Gastrotricha. Worm-like and leech-like animals. Mollusks. Arthropods. Fishes. Salamanders. Frogs and toads. Lizards. Snakes. Turtles. Birds. Mammals. Eggs. Tracks.

Note: A key to the identification of land and fresh-water animals. External and readily visible identification characters are used wherever possible, and line drawings are employed. Rarer forms are omitted, and those groups which require knowledge or dissection of certain parts beyond the skill of the amateur are carried only to the group or to the most common families or genera. For groups about which a great deal of information is readily available, only general treatments are provided. Outlines of the general scheme of classifications of groups are included to acquaint the student with the general form of such groupings.

GALTISOFF, PAUL SIMON, AND OTHERS

Culture methods for invertebrate animals. A compendium prepared cooperatively by American zoologists under the direction of a committee from Section F of the American Association for the Advancement of Science. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1937. 590 p. illus. 23 cm. \$4.00. 1541

Contents (abridged): Introduction, by James G. Needham. General methods of collecting, maintaining, and rearing marine invertebrates in the laboratory, by Paul S. Galtsoff. Collecting and rearing terrestrial and freshwater invertebrates, by F. E. Lutz and others. Phylum I, Protozoa: Mastigophora. Sarcodina. Sporozoa. Ciliata. Miscellaneous classes and microbiology. Phy-

lum II, Porifera: Notes on the cultivation and growth of sponges from reduction bodies, dissociated cells, and larvae, by H. V. Wilson. Phylum III, Coelenterata: Hydrozoa. Scyphozoa. Anthozoa. Phylum V, Plathelminthes: Turbellaria. Trematoda. Cestodea. Phylum VI, Nemertea. Phylum VII, Nemathelminthes: Nematoda. Phylum VIII, Trochelminthes: Gastrotricha. Phylum IX, Bryozoa: Ectoprocta. Phylum XIII, Annelida: Polychaeta. Oligochaeta. Gephyrea. Hirudinea. Phylum XIV, Arthropoda: Crustacea. Arachnoidea. Myriapoda. Insecta. Phylum XV, Mollusca: Amphineura. Gastropoda. Phylum XVI, Echinodermata: Asteroidea. Ophiuroidea. Echinoidea. Holothurioidea. Phylum XVII, Chordata: Ascidiacea. Index.

Note: A collective volume on the rearing of invertebrate animals which are used in teaching and research, especially for research in genetics, parasitology, experimental zoology, economic entomology, and in many fields of applied biology, as well as in aviaries, aquaria, fish culture experiment stations, and in zoological gardens where they are used as food for carnivorous animals. The work has been prepared by nearly 200 specialists in nearly every field of applied biology. It presents the latest and best methods as of 1937 for the management of cultures of a wide range of invertebrate animals including such common laboratory types as *Drosophila*, *Hydra*, *Daphnia*, *Paramecium*, and others. At least one species of each considerable group of invertebrates is represented. The volume is designed to serve the needs of the teacher of biology in colleges and high schools as well as of those engaged in the rearing of organisms as food for other laboratory animals, and of the specialized researcher in the fields of genetics, parasitology, microbiology, and related sciences. A system of cross-references assists in finding the many diverse uses of the materials discussed and a comprehensive index is a key to general methods of procedure as well as to individual topics.

HEGNER, ROBERT WILLIAM, AND JANE Z. HEGNER

Parade of the animal kingdom. New York: The Macmillan Company, 1935. 675 p. illus. 27 cm. \$3.95. 1542

Contents (abridged): Parade of the animal kingdom. The first animals: The Protozoa, crustaceans. Insects. Fish. Snakes. Birds. Mammals. Primates. Index.

Note: This book describes the activities and the mode of life of more than a thousand kinds of animals representative of all the important animal groups from *Amoeba* to Man. Prepared especially for the general reader, the animals described were chosen on a basis of general interest either because of familiarity, economic importance, oddity, dangerous character, frequent mention in literature and mythology, or importance as fossils. The book contains 743 photographs.

MASON, GEORGE FREDERICK

Animal tracks. New York: William Morrow and Co., 1943. 95 p. illus. 21 cm. \$1.50. 1543

Note: Written primarily to aid in the identification of the tracks of our most common North American animals, this book presents a collection of about 75 drawings of tracks showing much more detail than is generally seen in nature where tracking conditions are not always ideal. This is done with the assumption that for the purpose of identification it is easier to compare the perfect track with the natural. The descriptive text accompanying the line drawings gives a brief resumé of the habits and range of the animals for the purpose of acquainting the young naturalist or outdoor enthusiast with the fundamentals of animal lore. The author has been staff artist at the American Museum of Natural History in New York City for 17 years.

MOORE, CLIFFORD B.

The book of wild pets; being a discussion on the care and feeding of our native wildlife in captivity, together with notes on their identifica-

tion and life habits. With over 300 illustrations. New York: G. P. Putnam's Sons, 1937. 553 p. illus. 23 cm. \$5.00. 1544

Contents: Part I, The aquarium: The balanced fresh-water aquarium. Inhabitants for the balanced aquarium. Miscellaneous inhabitants for non-balanced aquaria. Water insects for aquaria. Garden pools and water cages. The marine aquarium. Fish diseases and their treatment. Part II, Terraria and their small animal inhabitants: What a terrarium is. The woodland terrarium and its inhabitants. The semi-aquatic terrarium and its inhabitants. The desert terrarium and its inhabitants. Part III, Insects and spiders as pets: Miscellaneous insects. Spiders. Part IV, Mammals: Stocking the home zoo. The health and conditioning of animal life. Approaching and feeding wild animals. Native wild animals as pets. Part V, Birds: Food, feeding and drinking appliances to attract birds. Bird houses, nesting shelves, roosting and winter shelters. Native land birds in captivity. Aquatic game birds. Upland game birds in captivity. Index.

Note: A useful reference book on the care and feeding of our most common native wildlife forms in captivity, and designed for the use of teachers, laboratory and museum workers, and young people. The material is largely non-technical and is based mainly upon a study of the pertinent literature on the subject. Descriptions and drawings are given for the construction of pens, traps, cages, hives, bird houses, and other types of vivaria. Identifying characteristics, habits, diet, and general care are given for each wild pet treated. There are 314 photographs and drawings, and bibliographies at the end of each chapter.

MORGAN, ANN HAVEN

Field book of animals in winter. With 283 illustrations, including 4 full-color plates. New York: G. P. Putnam's Sons, 1939. 527 p. illus. (part col.) 18 cm. \$3.50. 1545

Contents: Winter. Activity of animals in winter. Seasonal migrations. Hibernation. Winter communities of land animals. Seasonal changes in fresh water and in fresh-water animals. Fresh-water sponges. Hydras. Fresh-water flatworms, planarians. Rotifers. Fresh-water bryozoans. Annelid and nematode worms. Leeches. Fresh-water and land crustaceans. Insects. The "snow insects." Land insects. Aquatic insects. Spiders. Snails and fresh-water mussels. Winter habits of fresh-water fishes. Salamanders, frogs, and toads. Snakes and turtles. Birds. Mammals. References. Index.

Note: A popular introduction to the ways in which animals meet the seasonal change of winter, intended for the layman and student of natural history. The pocket-size format permits the book to be easily carried on field trips for purposes of reference and identification of observed forms and specimens. No previous knowledge of zoology is assumed and technical language has been avoided. There are 257 illustrations, including 4 color-plates of birds, and a bibliography of 243 books and articles arranged by chapter heading.

PEARSE, ARTHUR SPERRY

The migrations of animals from sea to land. Durham, N.C.: Duke University Press, 1936. 176 p. illus. 22 cm. (Duke University publications) \$3.00. 1545a

Contents: Introduction. Routes from sea to land. Causes of migrations from sea to land. Changes in animals which have migrated from sea to land. What land animals have attained. Bibliography. Index.

Note: A monograph on the general subject of the migrations of animals from their original home in the ocean to the environment of land, including a discussion of the routes the migrants followed, the reasons why they migrated, the structural and functional alterations resulting from the gradual adjustment of their systems to the activities of land life, and the effects of the variability of land habitats on the activity of animals. The work is based upon a survey of the literature of the field, and a bibliography listing about 750 references is included.

SCHENK, EDWARD THEODORE, AND JOHN H. McMASTERS

Procedure in taxonomy, including a reprint of the International rules of zoological nomenclature with summaries of Opinions rendered to

the present date; completely indexed. Stanford University, Calif.: Stanford University Press, 1936. 72 p. 23 cm. \$2.00. 1546

Contents: Introduction. Systematic categories. Types. The description of a new species. Specific names. Synonymy. Storage of type material. Latin terms and abbreviations. Appendix: International rules of zoological nomenclature; summaries of opinions rendered. General index.

Note: Prepared for the purpose of supplying the student as well as the professional systematist with (1) a clear-cut and comprehensive statement of the principles of taxonomy; (2) the International rules of zoological nomenclature; (3) Summaries of opinions rendered to the present date; (4) a complete index—the only index of the Rules and Summaries ever published.

SMITH, ROGER CLETUS

Guide to the literature of the zoological sciences. Minneapolis, Minn.: Burgess Publishing Company, 1942. 128 p. 27 cm. Paper, \$2.00. 1546a

Contents: Preface. Introduction and the literature problem of the scientist. The mechanics of the library and book classifications. Bibliographies of the zoological sciences. Abstract journals. The form of a bibliography. The forms of literature. Preparation of a scientific paper. Taxonomic indexes and literature. Library assignments. Index.

Note: This volume grew out of a course in the literature of the zoological sciences at Kansas State College of Agriculture and Applied Science. It is intended not only as a textbook, but also as a reference manual. The use of libraries and the preparation and arrangement of reports are discussed. A valuable feature is the annotated guides to the reference literature of zoology, such as the important bibliographies, journals, and indexes.

Ecology

CHAPMAN, ROYAL NORTON

Animal ecology; with especial reference to insects. New York: McGraw-Hill Book Company, Inc., 1931. 464 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences) \$4.00. 1547

Contents: Light as an ecological factor. Temperature as an ecological factor. Moisture as an ecological factor. Effects of temperature and moisture acting together in the ecology of animals. Physical conditions of environmental media. Nutrition. Biotic factors in autecology. Synecology. Chorology, distribution in space or zoogeography. Chronology. Aquatic synecology. Physical characteristics of aquatic communities. Biotic characteristics of aquatic communities. Lenitic environments. Lakes. Lotic environments. Terrestrial synecology—communities of the soil. Communities of the sand dune. Communities of the grass or herb stratum. Communities of the shrub and tree strata. Appendix: Variations and fluctuations of the number of individuals in animal species living together. Index.

Note: This book brings together the various and diverse materials embraced by the subject of ecology, and is intended for use by students and those engaged in ecological research. The material presented is largely quantitative. The author's objective is a critical consideration of what has been accomplished in the field, and the important literature in various phases of the subject is reviewed.

DICE, LEE RAYMOND, AND PHILIP M. BLOSSOM

Studies of mammalian ecology in southwestern North America, with special attention to the colors of desert mammals. Washington, D.C.: Carnegie Institution of Washington, 1937. 129 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 485) Paper, \$1.25; cloth, \$1.75. 1548

Contents: Introduction. Acknowledgments. Regions studied. Annotated list of mammals. Ecologic communities of southeastern Arizona. The colors of desert mammals in relation to the colors of the soils. Significance of local races. Summary. Literature cited. Plates. Index.

Note: Results of field studies of mammals of southern Arizona and northern Sonora made from 1930 to 1932, including an annotated list of the mammals of the areas visited and a tentative classification of the ecological communities of parts of southeastern Arizona.

HESSE, RICHARD, AND OTHERS

✓ Ecological animal geography; an authorized, rewritten edition based on Tiergeographie auf oekologischer Grundlage, by Richard Hesse, prepared by W. C. Allee and Karl P. Schmidt. New York: John Wiley and Sons, Inc., 1937. 597 p. illus. 23 cm. \$6.00. 1548a

Contents (abridged): The ecological foundations of zoogeography: The problems and relations of ecological animal geography. The conditions of existence for animals. The effect of environmental selection on animal distribution. Classification of animals according to the most general characteristics of the environment. Barriers to distribution and means of dispersal. The effect of geographic isolation. Historical zoogeography. The influence of extent of range. Biomes and biocoenoses. The distribution of marine animals: Physical conditions in the ocean. Chemistry of the sea and its influence on animal life. Biotic divisions of the ocean. The abyssal benthic and pelagic communities of the sea. The distribution of animals in inland waters: Environmental factors. Communities in running waters, standing inland waters, and other inland waters. The distribution of land animals: Ecological factors of the land and their effect on animals. Forest communities of animals. The animal population of dry, open lands. Animal life of swamps and of shores. Polar regions. Island communities. Effect of man on distribution of other animals. Index.

Note: An extensive revision and enlargement of the original German work which appeared in 1924. The editors have revised freely all parts where they have special knowledge and first-hand experience, and have omitted from the present work all material with which they were not in accord, so that the revision is as much an original contribution as it is a translation. The volume presents a detailed exposition of animal geography which gives approximately equal space to the animal life of the sea, of fresh water, and of land. Attention is focused on the distribution of communities of animals rather than upon the more readily observed distribution of vegetation or the non-living environment. References are given at the end of each chapter.

PEARSE, ARTHUR SPERRY

✓ Animal ecology. Second edition. New York: McGraw-Hill Book Company, Inc., 1939. 642 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences) \$5.50. 1549

Contents: Introduction. Environments. Animals. Ecological factors. Evolution, chorology, succession, climaxes. Rhythms. Communities, competition, populations, and classifications of communities. Ocean. Freshwater. Terrestrial habitats. Relations of animals to plants. Intraspecific relations. Interspecific relations. Economic ecology. Teaching of ecology. Ecological methods. Problems of ecology. Bibliography. Index.

Note: A textbook for college students specializing in biology. This book studies only the zoological aspect of ecology, the relation of plants to environments being outside its scope. The effect of metabolic, reproductive, and other physiological rhythms is shown, along with the effects of rhythms in the physical world such as lunar, solar, seasonal, annular, and temperature rhythms. The relations between animals of the same and of different species, and the ecology of pelagic life, are also discussed. The second edition contains new chapters including information on climate, evolution, teaching, ecological problems, and economic zoology and new illustrations.

SHELFORD, VICTOR ERNEST

Animal communities in temperate America as illustrated in the Chicago region; a study in animal ecology. Second edition. Chicago: Published for the Geographic Society of Chicago by

the University of Chicago Press, 1937. 368 p. illus. 25 cm. (The Geographic Society of Chicago. Bulletin no. 5) \$3.00. 1549a

Contents (abridged): Man and animals. The animal organism and its environmental relations. The animal environment: its general nature and its character in the area of study. Conditions of existence of aquatic animals. Animal communities of large lakes (Lake Michigan), small lakes, ponds. Conditions of existence of land animals. Animal communities of the tension lines between land and water, of swamp and flood-plain forests, of dry and mesophytic forests, of thickets and forest margins. Prairie animal communities. General discussion. Appendix: methods of study. Bibliography. Bibliographic appendix. Index of authors and collaborators. Index of subjects.

Note: A treatment of natural history according to the "physiology of organisms as opposed to the physiology of organs, the phenomena of behaviour and physiology, as illustrated by the studies of Loeb, and the organized comparable data of plant ecology." Principles of heredity and evolution have not been included. In the second edition of the book a bibliographical index, a table of correction for community nomenclature, and notes on expansion of observation stations have been added. Otherwise the volume is little changed from the first edition.

Parasites

BEAVER, PAUL CHESTER

Experimental studies on *Echinostoma revolutum* (Froelich), a fluke from birds and mammals. Urbana, Ill.: University of Illinois Press, 1937. 96 p. illus. 26 cm. (Illinois biological monographs. Vol. xv, no. 1) Paper, \$1.00. 1549b

Contents (abridged): Introduction. Life history and morphology: historical. Larval stages. Adult. Protocol of experiments: On the determination of methods, purity of stocks, and hosts. On the transfer of adult worms from host to host. Conclusions. Summary. Tables. Charts. Plates. Bibliography. Index.

Note: A report of the experimental determination of the life history of *Echinostoma revolutum*, including the morphology of the various stages, together with a description of adult worms by biometric methods, and a report of the first successful transfer of adult worms from mammal to bird hosts.

KUDO, RICHARD ROKSABRO

Morphology and development of *Nosema notabilis* Kudo, parasitic in *Sphaerospora polymorpha* Davis, a parasite of *Opsanus tau* and *O. beta*. Urbana, Ill.: University of Illinois Press, 1944. 83 p. illus. 26 cm. (Illinois biological monographs. Vol. xx, no. 1) Paper, \$1.25. 1550

Contents: Introduction. Material and methods. Urinary system of *Opsanus tau* and *O. beta*. *Sphaerospora polymorpha* Davis: Occurrence. The trophozoite. Development of trophozoites and process of spore-formation. The spore. Résumé of development. Taxonomic consideration. Diagnosis. Mode of infection. *Nosema notabilis* Kudo: Occurrence. Schizogony and sporogony. The spore. Résumé of development. Taxonomic consideration. Diagnosis. Summary: Bibliography. Plates.

Note: Report on the fifth observed case of microsporidian infection in a parasitic protozoan. The complete life cycles of the two cnidosporidians could not be demonstrated, but new information concerning each is presented.

KUDO, RICHARD ROKSABRO

Studies on some protozoan parasites of fishes of Illinois. Urbana, Ill.: University of Illinois Press, 1934. 44 p. illus. 26 cm. (Illinois biological monographs. Vol. xiii, no. 1) Paper, \$0.75. 1551

Contents: Introduction and acknowledgment. Preliminary survey of protozoan parasites of fishes of Illinois. Descriptions of species of Myxosporidia found parasitic in fishes of Illinois: *Myxidium aplodinoti* n. sp. *Myxosoma grandis* n. sp. *Myxosoma procerum* n. sp. *Myxosoma robustum* n. sp. *Myxosoma bibullatum* n. sp. *Myxobolus squamosus* n. sp. *Myxobolus teres* n. sp. *Myxobolus ovatus* n. sp. *Myxobolus angustus* n. sp. *Myxobolus*

vastus n. sp. *Myxobolus gravidus* n. sp. *Myxobolus compressus* n. sp. *Myxobolus mutabilis* n. sp. *Myxobolus nodosus* n. sp. *Myxobolus obliquus* n. sp. *Myxobolus bellus* n. sp. *Myxobolus congesticus* n. sp. *Myxobolus conspicuus* Kudo. *Myxobolus aureatus* Ward. *Thelohanellus notatus* (Mavor). *Henneguya clavicauda* n. sp. *Henneguya crassicauda* n. sp. *Henneguya exilis* Kudo. Summary. Bibliography. Plates. Index.

Note: Descriptions of new species and additional information on some known species of Myxosporidia.

Popular Works

BEEBE, CHARLES WILLIAM

591.92
B388 Half mile down. With 123 illustrations and 8 colored plates. Published under the auspices of the New York Zoological Society. New York: Harcourt, Brace and Company, 1934. 344 p. illus. (part col.) 24 cm. \$3.29. 1554

Contents: A wonderer under sea. The first divers. Protobathyspheres. The kingdom of the helmet. The birth of the bathysphere. A first round trip to Davy Jones's locker. Contour diving. Renaissance. At the end of the spectrum. The bathysphere broadcast. A descent into perpetual night. Appendices: Courtesies of 1934. The bathysphere of 1930, by Otis Barton. The bathysphere of 1934, by John Tee-Van. History of diving bibliography, by Jocelyn Crane. Bathysphere dive thirty-five, by John Tee-Van. Unedited telephone observations on dives thirty and thirty-two, by William Beebe and Gloria Hollister. Summary and conclusions, by William Beebe. Index.

Note: This record of oceanographic research on life of the waters about Nonsuch, Bermuda, describes the descents made by Dr. Beebe and Mr. Barton in the bathysphere to depths of over half a mile. Written in non-technical terminology for the layman.

DITMARS, RAYMOND LEE

The fight to live. With fifty-three illustrations from photographs. New York: J. B. Lippincott Company, 1938. 232 p. illus. 21 cm. \$2.50. 1555

Contents: Man's fight for life. The anthropoid apes and the monkeys. Teeth, claws, horns, antlers, spines, and armor. The lives of beavers and their kin. Among the birds. Down the scale to the reptiles. Poisonous snakes and their enemies. The struggle of the amphibians. The defenses of fishes. Smoke screens, poison gas and camouflage. In the world of make-believe. Disciplined warfare long before man.

Note: The central theme of these chapters on popular zoology for the general reader is the adaptation which successive generations of animal species have brought about in the physical structure of the organism to enable it to survive the struggle against its enemies and its environment. Natural methods of camouflage among animals and mimicry among insects are described and illustrated in photographs, while such features as the quills of the porcupine, the armor-plate skin of the armadillo and lizards, the highly specialized tongue and snout of the anteater, and the venom of snakes are explained in terms of their value in the fight to survive.

DITMARS, RAYMOND LEE, AND WILLIAM BRIDGES

Wild animal world. Behind the scenes at the zoo. New York: D. Appleton-Century Company, Incorporated, 1937. 302 p. illus. 21 cm. \$3.00. 1557

Contents: First catch your animal.—And feed him well. Doctoring under difficulties. Do snakes swallow their young? New prizes in the jungle. Animal myths and superstitions. Don't you believe it! Weapons—not concealed. Getting ready for snow. Animals in carpet slippers. The unexpected always happens. Pea-green lion. A fishing worm twelve feet long. Keeper's pet. Midnight in the zoo. Adventures with elephants. Fish are big business. A nose for zoo news. Index.

Note: A miscellaneous collection of facts and stories relating to the well-known animals of the zoo, written in popular style and illustrated with numerous photographs. The little-known and unusual facts are stressed and presented from a journalistic viewpoint.

Textbooks

CURTIS, WINTERTON CONWAY, AND MARY J. GUTHRIE

Textbook of general zoology. Third edition, rewritten and reset. New York: John Wiley & Sons, Inc., 1938. 682 p. illus. 23 cm. \$3.75. 1558

Contents: Introduction. Vertebrate organ-systems related to metabolism. Vertebrate organ-systems related to irritability. Structure and activities of cells in multicellular animals. Reproduction and development in chordates. Heredity and variation. Classification and organization of animal groups. The unicellular animals: Protozoa. The simplest multicellular animals: Porifera and Coelenterata. The Platyhelminthes. The roundworms: Nematoda, Nematomorpha, and Acanthocephala. Minor invertebrate phyla: Bryozoa, Brachiopoda, Rotatoria, Gastrotricha, and Chaetognatha. The Annelida. The Mollusca. The Echinodermata. The Arthropoda. The Chordata. The history of organisms. Glossary. Index.

Note: The revision of this book in its third edition involves a change in the approach, and a rewriting of the earlier chapters in relation to this change, an additional chapter on the Chordata, and revisions at many other places throughout the volume. The book features the important general aspects of zoological science. Principles of ecology, like the history of zoology, are presented as opportunity offers throughout the work. Evolution is again reserved for the final chapter. The book constitutes an introduction to the subject.

FASTEN, NATHAN

Introduction to general zoology. Boston: Ginn and Company, 1941. 742 p. illus. 24 cm. \$4.00. 1559

Note: A survey course in general zoology for colleges that emphasizes zoology from the industrial, economic, and social points of view. Members of the animal kingdom are discussed in logical sequence, beginning with the simplest forms and proceeding to the more complicated ones. Included are discussions of malaria, hookworm disease, sleeping sickness and the like; likewise valuable information about animal habits that contribute to conservation programs. A bibliography and glossary are included.

GUYER, MICHAEL FREDERIC

Animal biology. Third edition. New York: Harper & Brothers, 1941. 735 p. illus. 24 cm. \$4.00. 4th ed., 1948 1560

Contents: The world of life. Characteristics of living matter. Protoplasm and the cell. Classification: the kinds of animals. Interpreting animals. Interpreting plants. Biological communities. Ecology. The leopard frog. Euglena; Paramecium; Hydra; Obelia; Planaria; earthworm. Crayfish; locust; bee. Digestive systems, respiratory systems. Circulatory systems and circulation. Excretory systems, reproductive systems. Nervous systems and how they operate. Some biological aspects of human behavior. Skeletal and integumentary systems. Tissues. The origin of organisms. The germ cells and fertilization. Heredity. Significance of the natural system of classification. Evolution; evidence from morphology; evidence from embryology; evidence from the geological record (paleontology); evidence from present distribution; evidence from physiology. Theories of how evolution has come about. The major groups of the animal kingdom. Reference books. Glossary. Index.

Note: A standard textbook for college classes in zoology. It presents the general principles underlying the subject in such a way as to retain the more outstanding values of the usual types course. Complete life-history studies of a few significant forms are included, but the emphasis throughout is upon the fundamental concepts which underlie all life phenomena, with constant applications to human structures, functions, and problems. Recent experimental work is discussed fully and intelligibly. A feature of the third edition is a full treatment of ecology. The author's and H. W. Hellbaum's *Laboratory outlines for animal biology*, third edition, New York: Harper & Brothers, 1941, 274 p., \$1.75, is a companion book.

HEGNER, ROBERT WILLIAM

College zoology. Fifth edition. New York:

The Macmillan Company, 1942. 817 p. illus. (part col.) 24 cm. \$3.75. 1561

Contents (abridged): Protoplasm and cellular organization. Phylum Protozoa. Relations of Protozoa to man. Introduction to the Metazoa. Phylum Porifera, sponges. Phylum Coelenterata, hydroids, jellyfish, corals, etc. Phylum Ctenophora, sea walnuts, or comb jellies. Phylum Platyhelminthes, flatworms. Phylum Nematelminthes, roundworms. Phyla Rotifera, Bryozoa, etc. Phylum Annelida, segmented worms. Phylum Arthropoda. Phylum Mollusca, snails, clams, squids, devilfish, etc. Phylum Echinodermata, starfishes, sea urchins, sea cucumbers, sea lilies, etc. Phylum Chordata, amphioxus, tunicates, vertebrates, etc. A typical vertebrate, the frog. Subphylum Vertebrata, class Cyclostomata. Subphylum Vertebrata, class Elasmobranchii. Subphylum Vertebrata, class Pisces, fish. Subphylum Vertebrata, class Amphibia. Subphylum Vertebrata, class Reptilia. Subphylum Vertebrata, class Aves, birds. Subphylum Vertebrata, class Mammalia, mammals. Nutritive processes in animals. Skeletal structures and movement. Coordination and behavior. Reproduction and development. Heredity and genetics. Ecology and geographical distribution. The origin and history of animal life. History of zoology. Glossary. Index.

Note: A college textbook in which the method of teaching is to direct attention to animals in phylogenetic groups in order to lead the student to the deduction of general principles. In this edition there are new chapters on the nutritive processes in animals, skeletal structure and movement, coordination and behavior, and reproduction and development, with special reference to man. The previous final chapter on zoological principles and theories has been expanded to three chapters. There is also additional material on protoplasm, parasitism, and life cycles of insects. A laboratory manual for use with this edition of this text and other texts at the same level is Karl A. Stiles' *Laboratory explorations in general zoology*, New York: The Macmillan Company, 1943, 265 p., paper, \$2.50.

KRECKER, FREDERICK HARTZLER

General zoology. New York: Henry Holt and Company, 1934. 634 p. illus. 22 cm. \$3.75. 1562

Contents: Biology and human affairs. Part I, A typical animal: The course of food. The physical basis of life—protoplasm. The release of energy. The stream of life. Growth and reproduction. The organization of living material. Part II, A review of the animal kingdom: The Protozoa. The sponges. The coelenterates. Distinctions between Protozoa and Metazoa. The flatworms. The roundworms. The annelid worms. The arthropods. Terrestrial arthropods. The insects. The arachnids. The molluscs. The echinoderms. The chordates. The fishes. The amphibia. The reptiles. The birds. The mammals. Part III, Animals and their environment: The major environments and their animals. Minor environments and their animals. Methods of adjustment to the environment. Animals associations. Part IV, The origin of animals: Theories of animal origin. Ancestry of man. The factors of evolution. Heredity. Index.

Note: A simply written text for elementary college courses.

METCALF, ZENO PAYNE

An introduction to zoology, through the study of the vertebrates with special reference to the rat and man. Springfield, Ill.: Charles C. Thomas, 1932. 423 p. illus. 24 cm. \$3.50. 1562a

Contents: Part I, Introduction: The field of zoology. The animal kingdom. Part II, General morphology and physiology: The habits and natural history of the rat. The external characterization of the rat. The general internal structure of a mammal. The integumentary system. The muscular system. The skeletal system. Locomotion in animals. The digestive system. The respiratory system. The urinary system. The circulatory system. Metabolism. The reproductive system. Embryology. Heredity. The endocrine system and internal secretions. The nervous system. Animal behavior. Part III, Philosophical zoology: Distributional zoology. Paleontology. Organic evolution. The history of zoology. Index.

Note: The rat has been chosen in this textbook for beginning students as the type for a general introduction to zoology because its structure is much more nearly like the human structure, with which the student is more familiar, than the frog or other laboratory animal generally studied in freshman courses. Effort has been made throughout the second part of the work to group related structures together, and then to discuss the important functions of these on a comparative basis. The treatment aims at simplification consistent with scientific accuracy.

NEWMAN, HORATIO HACKETT

Outlines of general zoology. Third edition. New York: The Macmillan Company, 1936. 661 p. illus. 22 cm. \$4.25. 1563

Contents (abridged): Biological science and its history. General biological principles. Representative animal types. The phylum Chordata. Biological mechanisms in general, and mechanisms of individual maintenance and adjustment. Mechanisms of racial maintenance and improvement (evolution and genetics). Appendix. Index.

Note: In this textbook for college courses, general biological principles are presented first, followed by a study of types. More complex mechanisms and processes of living units are then discussed in a progressive sequence culminating in the master principle, organic evolution.

REESE, ALBERT MOORE

Outlines of economic zoology. Fourth edition. Philadelphia: The Blakiston Company, 1942. 359 p. illus. 22 cm. \$3.25. 1564

Contents (abridged): Phylum Protozoa. Porifera. Coelenterata. Echinodermata. Platyhelminthes. Nematelminthes. Annulata. Mollusca. Arthropoda. Chordata. Subphylum Vertebrata. References. Index.

Note: Presents the practical material required in courses in economic zoology and for supplementary reading by students of general biology and zoology. The author stresses the economic importance, both beneficial and harmful, of the various groups of animals.

SIMPSON, GEORGE GAYLORD, AND ANNE ROE

Quantitative zoology; numerical concepts and methods in the study of recent and fossil animals. New York: McGraw-Hill Book Company, Inc., 1939. 414 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences, A. F. Shull, consulting editor) \$4.00. 1565

Contents: Types and properties of numerical data. Mensuration. Frequency distributions and grouping. Patterns of frequency distributions. Measures of central tendency. Measures of dispersion and variability. The normal curve. Probability and reliability. Sampling. Comparisons of samples. Small samples and single specimens. Correlation. Regression. Association. Graphic methods. Growth.

Note: This college textbook provides the student with the basic principles of the quantitative phases of zoology and with detailed means of dealing with these data. Much attention is paid to dynamic problems, such as those of contingency, regression, and growth. The section on single specimens is a feature of the book.

STORER, TRACY IRWIN

General zoology. New York: McGraw-Hill Book Company, Inc., 1943. 798 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences; A. F. Shull, consulting editor) \$3.75. 1566

Note: A general introductory text for colleges and universities. Part one comprises general animal biology, including structure, physiology, reproduction, genetics, ecology, distribution, evolution, history, and classifications. Part two covers the animal kingdom from Protozoa to man, describing the structure, conditions, natural history, and economic relations of common representatives, and a classification of each group.

WIEMAN, HARRY LEWIS

General zoology. Third edition. New York: McGraw-Hill Book Company, Inc., 1938. 497 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences; A. F. Shull, consulting editor) \$3.50. 1567

Contents: The study of zoology. The animal organism. Integument. Endoskeleton and voluntary muscle. Alimentation. Circulation and respiration. Excretion. Means and methods of reproduc-

tion. The nervous system. The endocrine system. Cell division and gametogenesis. Ontogeny. Heredity. Evolution. Adaptation. Environment and distribution. The animal kingdom. References. Glossary. Index.

Note: A text for introductory college courses offered to liberal arts students and to pre-medical students and other pre-professional students. The treatment is compact, and the author has assumed that laboratory work will be combined with two or three lecture or recitation periods per week. This edition has been extensively rewritten and rearranged, and new illustrative material has been added.

WOLCOTT, ROBERT HENRY

Animal biology. Second edition. New York: McGraw-Hill Book Company, Inc., 1940. 649 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences: A. F. Shull, consulting editor) \$3.50. 1568

Contents (abridged): Part I, Fundamental principles. Part II, Protozoa. Part III, Metazoa in general. Part IV, Metazoan phyla. Part V, General considerations.

Note: Consistently stressing principles and broad points of view and minimizing details, this book aims to give the beginning student a clear understanding of the whole field of zoology. Origins of the group names are given. Pronunciation of words is included in the glossary. Throughout, the author has endeavored to make the book a simple, interesting, and accurate text for a year's course in elementary zoology. The author has also prepared, with Eugene F. Powell, a *Laboratory guide in animal biology*, New York: McGraw-Hill Book Co., Inc., 1935, 101 p., \$1.00, to accompany the present text.

WOODRUFF, LORANDE LOSS

Animal biology. Second edition. New York: The Macmillan Company, 1938. 535 p. illus. 22 cm. \$3.75. 1568a

Contents: The scope of biology. Cellular organization of life. The physical basis of life. Metabolism of organisms. Survey of unicellular animals. The multicellular animal. Survey of invertebrates. The invertebrate body. Survey of vertebrates. The vertebrate body. Nutrition. Respiration. Circulation. Excretion. Reproduction. Coordination. Origin of life. Continuity of life. Fertilization. Development. Inheritance. Organic adaptation. Descent with change. Biology and human welfare. The human background. Development of biology. Appendix: A brief classification of animals. Bibliography. Glossary. Index.

Note: A college textbook designed especially for use in courses in animal biology and general zoology in which plants are considered only incidentally in their relations with animals. The work is written from the viewpoint that a general knowledge of biology affords the natural approach to an introductory survey of either animal or plant science. No previous knowledge of the subject is assumed. The work is an adaptation of the author's *Foundations of biology*, 5th edition, New York, 1936 (see Index). The publishers have also issued George A. Baitsell, *Manual of animal biology*, New York: The Macmillan Company, 1932, 382 p., \$2.75, which is intended to be used as a supplementary text for details of the morphology and physiology of selected types, as well as for laboratory directions. The second edition of the present text contains a new chapter on the human background and certain changes in the subject of genetics.

Zoology of Various Regions

ADAMSON, ALASTAIR MARTIN

Non-marine invertebrate fauna of the Marquesas (exclusive of insects). Honolulu, Hawaii: Bernice P. Bishop Museum, 1935. 39 p. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. XI, no. 10) \$0.50. 1568b

Note: This review summarizes the results of the specialists who studied the collections made in the Marquesas by the Pacific Entomological Survey. Special attention was given to the facts that concern problems of distribution and to supplementing the taxonomic reports with observations made in the field. It was

not possible at the time of publication of this article to list all the species in each group of animals, because all the collections had not yet been determined. It was already evident, however, that a general affinity exists between the Marquesan fauna and that of the islands to the southwest and in turn with the Indo-Malayan fauna, while practically no direct affinity was found between the Marquesas and Hawaii.

ADAMSON, ALASTAIR MARTIN

Review of the fauna of the Marquesas Islands and discussion of its origin. Honolulu, Hawaii: Bernice P. Bishop Museum, 1939. 93 p. illus. 26 cm. (Bernice P. Bishop Museum. Bulletin 159. Pacific Entomological Survey publication 10) \$1.50. 1568c

Contents (abridged): The Pacific and its islands. Extent of biological exploration on central Pacific islands. Means of dispersal for Pacific insular faunas and floras. Biogeographic theories. The Marquesas as an environment for a fauna. Systematic review of the Marquesan fauna. Endemism and age. Faunal affinities. Conclusions: Origin of the Marquesan fauna on the assumption of past land connections, of transoceanic dispersal. Summary. Bibliography. Index.

Note: In this work the author presents a review of the land and fresh-water fauna of these islands. His review of the non-marine invertebrates, exclusive of insects, and a description of the islands from the point of view of a student of the fauna had already been published by the Museum as *Occasional papers*, Vol. 11, no. 10, and *Bulletin* 139, respectively. This paper also deals with the much discussed problem of the origin of the faunas and floras of the central Pacific islands. Biological, geographical, and geological evidence is offered and various opinions are expressed, but tentatively, without any attempt to reach definite conclusions. The taxonomic data on the material here reviewed are reported in *Bulletins* 98, 114, and 142.

ALLEN, GLOVER MORRILL, AND OTHERS

Scientific results of a fourth expedition to forested areas in east and central Africa, by Glover M. Allen, Arthur Loveridge, James Lee Peters, Fenner A. Chace, Jr. Cambridge, Mass.: Harvard Museum of Comparative Zoology, 1942. 5 v. illus. 23 cm. (Harvard University. Museum of Comparative Zoology. Bulletin. Vol. LXXIX, nos. 4, 5; Vol. XCI, nos. 3-5) Paper, \$5.25. 1568d

Contents: Mammals, by Glover M. Allen and Arthur Loveridge. Birds, by James Lee Peters and Arthur Loveridge. Decapod Crustacea, by Fenner A. Chace, Jr. Reptiles, by Arthur Loveridge. Amphibians, by Arthur Loveridge.

Note: Each of these papers presents an annotated descriptive list of specimens collected by Arthur Loveridge between 1938 and 1939 while investigating the fauna of certain forested regions of east and central Africa. The number of species covered in the present work, with the number of new forms shown in parentheses, is as follows: mammals, 116 (40); birds, 246 (10); decapod Crustacea, 20 (2); reptiles, 144 (17); amphibians, 77 (10). Native names, description, measurements, diet, enemies, parasites, habits, breeding, and other related information are included, together with the usual citation of original publication for each species covered. There are a total of 18 plates of photographs, and bibliographies accompany each of the papers except that on birds by Peters and Loveridge.

EDMONDSON, CHARLES HOWARD

Reef and shore fauna of Hawaii. Honolulu, Hawaii: Bernice P. Bishop Museum, 1933. 295 p. illus. 24 cm. (Bernice P. Bishop Museum. Special publication 22) \$3.00. 1568e

Note: This treatise covers the principal groups of marine fauna from the Protozoa through the lower Chordata, and gives preference to common forms typical near shore. Brief mention is made also of species reported from Hawaii many years ago but not observed since. It is not an exhaustive treatment of local marine fauna, certain phyla and subdivisions being mentioned only in a very general way. The treatise has a double purpose: (1) to provide authoritative information for the bene-

fit of students and teachers in Hawaii who are interested in this subject, and (2) to provide investigators with information on the general character, scarcity or abundance, and relative accessibility of the main groups of invertebrates available for purposes of research about the shores of Hawaii. For the benefit of the latter, some of the more accessible and productive localities about the principal islands are listed.

GRINNELL, JOSEPH, AND OTHERS

Vertebrate natural history of a section of northern California through the Lassen Peak region, by Joseph Grinnell, Joseph Dixon, and Jean M. Linsdale. Berkeley, Calif.: University of California Press, 1930. 594 p. illus. 28 cm. (University of California publications in zoology. Vol. 35) Paper, \$5.00. 1568f

Contents: Introduction. Materials. Some plants of the Lassen section. Distributional considerations. Life-zones of the Lassen section. Faunal relations. Populations of birds. Historical comment. Check-list of the terrestrial vertebrates of the Lassen section. General accounts. Amphibians. Reptiles. Birds. Mammals. Literature cited. Index.

Note: The objective of this technical report is to sort out and present to the advanced student of vertebrate distribution and to the systematist certain information that shows what species and subspecies of land vertebrates are present within the stated region, the frequency of observed occurrence and the relative abundance of these species, the local or habitat distribution of each, the factors which determine their presence and habitat distribution, the annual cycle of vertebrate activity, and the definition of a new method of analysis of vertebrate communities and successions. Of interest also to the student in the general field of animal ecology. There are 70 references to works published before 1930, 181 drawings and photographs, and a colored map.

LAWRENCE, BARBARA, AND JAMES LEE PETERS

Collections from the Philippine Islands. Mammals, by Barbara Lawrence. Birds, by James Lee Peters. Cambridge, Mass.: The Cosmos Press, Inc., 1939. 104 p. 24 cm. (Harvard College. Museum of Comparative Zoology. Bulletin. Vol. LXXXVI, no. 2, November) \$0.75. 1569

Note: The material dealt with in this paper was collected on various of the Philippine Islands, chiefly during the early part of 1937. Although this report is not intended to be a review of either the Philippine birds or the Philippine mammals, the list of birds collected contains a number of new records for several of the islands and descriptions of two new races, while a few new species of mammals were found and two new genera described. In addition, some of the species made known years ago have been rediscovered and there has been a considerable extension of some of the recorded ranges. Because of the author's special interest in bats, the most interesting results are found in the section on Chiroptera. The new forms described include four species and one genus of bats, while a new generic name is proposed for the hog-badger. The introduction was written by Dr. Thomas Barbour.

LOVERIDGE, ARTHUR, AND OTHERS

Reports on the scientific results of an expedition to the southwestern highlands of Tanganyika Territory. Cambridge, Mass., 1933. 293 p. illus. 24 cm. (Harvard College. Museum of Comparative Zoology. Bulletin. Vol. LXXV, nos. 1-6) \$4.25. 1570

Contents: I. Introduction and zoogeography, by Arthur Loveridge. II. Mammals, by Glover M. Allen and Arthur Loveridge. III. Birds, by Outram Bangs and Arthur Loveridge. IV. Oligochaeta, by J. Stephenson. V. Crabs, by Mary J. Rathbun. VI. Parasitic nematodes from East Africa and Southern Rhodesia, by J. H. Sandground.

Note: The primary object of the expedition, the results of which are here reported, was to study the composition of the vertebrate fauna of the mountains of Tanganyika Territory in relation to that of the Uluguru range. The widely scattered

mountains whose higher slopes are clothed in rain forest stand like so many islands, supporting a fauna that is presumably unable to exist under the climatic and topographic conditions found in the intervening areas, and this fact has raised the interesting biological problem of visualizing earlier conditions through a study of the distribution of the amphibians, reptiles and mammals. A previous report in this series entitled *Herpetology*, by Arthur Loveridge, was published as Number 7 of Volume LXXIV of the *Bulletin*. It is now out of print.

LOVERIDGE, ARTHUR, AND OTHERS

Scientific results of an expedition to rain forest regions in eastern Africa. Cambridge, Mass.: The Cosmos Press, Inc., 1935. 541 p. illus. 24 cm. (Harvard College. Museum of Comparative Zoology. Bulletin. Vol. LXXIX, nos. 1-9) \$5.10. 1571

Contents: I. New reptiles and amphibians from East Africa, by Arthur Loveridge. II. Crustacea, by Mary J. Rathbun. III. Mammals, by Glover M. Allen and Barbara Lawrence, with field notes by Arthur Loveridge. IV. Birds, by James Lee Peters and Arthur Loveridge. V. Reptiles, by Arthur Loveridge. VI. Nematoda, by J. H. Sandground. VII. Amphibians, by Arthur Loveridge. VIII. Oligochaeta, by Wilhelm Michaelsen. Zoogeography and itinerary, by Arthur Loveridge.

Note: In this series of papers are reported the results of an expedition undertaken by the author, as a fellow of the John Simon Guggenheim Foundation, during 1933 and 1934. This was the third expedition made to eastern Africa in fulfillment of a program outlined in 1924. The results of the second are reported in Volume LXXV of the *Bulletin*. The principal object of these expeditions was a clarification and extension of our knowledge regarding the distribution of the isolated, sylvicoline forms of life associated with the forest 'islands' of East Africa, and a further elucidation of their relationship with the fauna of the great west African forests, particularly that of the Cameroonian Mountains. In conjunction with his scientific pursuits, the author was also interested in observing the ill effects of the deforestation which is proceeding rapidly in this part of the world. He reports on the resulting erosion and warns of the dire consequences which may follow.

PEARSE, ARTHUR SPERRY, AND OTHERS

The cenotes of Yucatan; a zoological and hydrographic survey, by A. S. Pearse, Edwin P. Creaser, F. G. Hall, and the following collaborators: J. Bequaert, H. B. Hungerford [and others]. Washington, D.C.: Carnegie Institution of Washington, 1936. 304 p. illus. 29 cm. (Carnegie Institution of Washington. Publication no. 457) Paper, \$4.00; cloth, \$5.00. 1572

Contents (abridged): Physical and chemical survey of cenotes of Yucatan, by F. G. Hall. Results of survey of the cenotes in Yucatan, by A. S. Pearse. Yucatan fresh-water sponges, by Marcus C. Old. Some trematodes of cenote fishes from Yucatan, by H. W. Manter. Polyzoa, by Claudeous J. D. Brown. Hirudinea from Yucatan, by J. Percy Moore. A second contribution to the molluscan fauna of Yucatan, by J. Bequaert and W. J. Clench. Copepods from the cenotes and caves of the Yucatan peninsula, with notes on cladocerans, by C. B. Wilson. On the Ostracoda from the cenotes of Yucatan and vicinity, by Norma C. Furtos. Crustaceans from Yucatan, by Edwin P. Creaser. Hydracarina from Yucatan, by Ruth Marshall. Odonata from Yucatan, by E. B. Williamson. Aquatic and semiaquatic Hemiptera collected in Yucatan and Campeche, by H. B. Hungerford. Chironomid larvae from Yucatan, by A. S. Pearse. Aquatic Coleoptera from Yucatan, by P. J. Darlington, Jr. Fishes of the Yucatan peninsula, by Carl L. Hubbs. Some reptiles and amphibians from Yucatan and Campeche, Mexico, by Helen Thompson Gaige.

Note: A collection of papers on various aspects of the fauna observed in the water-containing cavities in the limestone of the flat plains of Yucatan. These cavities and caverns are interesting to biologists because they are isolated aquatic habits, many of which have existed for long periods of time.

PEARSE, ARTHUR SPERRY, AND OTHERS

Fauna of the caves of Yucatan. With the collaboration of Nathan Banks, Joseph C. Be-

quaert, Joseph C. Chamberlin [and others]. Washington, D.C.: Carnegie Institution of Washington, 1938. 304 p. illus. 29 cm. (Carnegie Institution of Washington. Publication no. 491) Paper, \$3.00; cloth, \$3.50. 1573

Contents (abridged): Fungal flora of Yucatan caves, by F. A. Wolf. Land planarians from Yucatan, by Libbie H. Hyman. Parasitic flatworms from Yucatan, by Horace W. Stunkard. Some nematodes from the caves of Yucatan, by B. G. Chitwood. Leeches (Hirudinea) from Yucatan caves, by J. Percy Moore. Earthworms in Yucatan caves, by Grace E. Pickford. Arachnida of the orders of Pedipalpida, Scorpionida and Ricinulida, by Ralph V. Chamberlin and Wilton Ivie. Acarina of Yucatan caves, by G. W. Wharton. Copepoda from Yucatan caves, by A. S. Pearse and C. B. Wilson. A new species of Cypridopsis from Yucatan, by Norma C. Furtos. Large cave Crustacea of the Yucatan peninsula, by Edwin P. Creaser. Diplopoda from Yucatan, by Ralph V. Chamberlin. Collembola from Yucatan caves, by Harlow B. Mills. New cave-crickets from Yucatan, by Theodore H. Hubbell. A new myrmeleonid from Yucatan, by Nathan Banks. Insects from Yucatan caves, by A. S. Pearse. Ants from the caves of Yucatan, by William Morton Wheeler. A third contribution to the molluscan fauna of Yucatan, by J. Bequaert and W. J. Clench. Fishes from the caves of Yucatan, by Carl L. Hubbs. Some reptilian records from the caves of Yucatan, by Helen T. Gaige. Birds in Yucatan caves, by A. S. Pearse. Mammalia from Yucatan caves, by A. S. Pearse with Remington Kellogg.

Note: A collection of papers on various aspects of the fauna observed in the caves of Yucatan, including the systematic classification of new species found among troglobite, troglophile, and trogluxene animals, with numerous detailed drawings.

PROCTER, WILLIAM

Biological survey of the Mount Desert region. From the laboratory of the Biological Survey of the Mount Desert Region, Corfield, Bar Harbor, Maine. Philadelphia: The Wistar Institute of Anatomy and Biology, 1927-38. 3 v. illus. 26 cm. Price, ? 1573a

Contents (abridged): Volume 1: Part I, The insect fauna, with references to the flora and other biological features, by Charles Willison Johnson. Part II, Fishes; a contribution to the life-history of the angler (*Lophius piscatorius*), by the survey staff, William Procter, Henry C. Tracy, Edwin Helwig, Charles H. Blake, J. E. Morrison, and Simon Cohen. Part III, Crustacea; new Crustacea from the Mount Desert region, by Charles H. Blake. Part IV, Vermes; three new species of worms belonging to the order Echinodera, by Charles H. Blake. Part V, Marine fauna; a report of the organization, laboratory equipment, methods and station lists together with a list of the marine fauna, with descriptions and places of capture, to which is added a list of the Arachnida and other non-marine forms. Part VI, The insect fauna, by William Procter.

Note: The region named in these publications is the territory of the island of Mount Desert, Maine, and its immediate surroundings in the extreme northeastern part of the United States, covering approximately 100 square miles. The variety of environmental conditions in this small area makes the region an excellent field for various problems in biological research. Parts II, III, and IV were originally issued as pamphlets and are bound at the end of part V, which, together with part VI, forms the bulk of the work. Bibliographies are given at the end of each part.

STEINBECK, JOHN, AND EDWARD F. RICKETTS

Sea of Cortez. A leisurely journal of travel and research; with a scientific appendix comprising materials for a source book on the marine animals of the Panamic faunal province. New York: The Viking Press, 1941. 598 p. illus. (part col.) 24 cm. \$5.00. 1574

Contents: Introduction. Narrative. A note on preparing specimens. Appendix: Annotated phyletic catalogue. Glossary. Index.

Note: A semi-scientific account of the authors' trip through the Gulf of California, once known as the Sea of Cortez. The first half of the book constitutes a descriptive, literary narrative of the adventure, including details of the collecting of specimens,

the various sights encountered, and a running commentary which is part scientific and part philosophic. The remaining half of the work is an annotated phyletic catalogue and bibliography, contributed by the junior author, which lists about 550 specimens of marine animals taken, of which ten per cent are said to be new. Included is a summary of the extant literature and a résumé of the present state of knowledge of the littoral natural history of the Gulf. The annotated catalogue gives bibliographic references under each specimen described. There are 40 plates of photographs, eight of which are in color, and a glossary of terms.

Zoology of Various Groups

Invertebrates

BUCHSBAUM, RALPH MORRIS

Animals without backbones; an introduction to the invertebrates. Chicago, Ill.: The University of Chicago Press, 1938. 371 p. illus. 23 cm. \$5.00. 1575

Contents: By way of introduction. Life-activities. The first true animals. Classified knowledge. A variety of Protozoa. A side issue—sponges. Two layers of cells. Polyps and medusas. Comb jellies. Three layers of cells. The shapes of animals. New parts from old. Free-living and parasitic flatworms. One-way traffic—proboscis worms. Roundworms. Lesser lights. Soft-bodied animals. Two ways of life—clam and squid. Segmented worms—nereis. Earthworms and other annelids. A missing link—peripatus. Jointed-legged animals. The lobster and other arthropods. The grasshopper and other insects. Spiny-skinned animals. Invertebrate chordates. Records of the invertebrate past. Invertebrate relationships.

Note: Presents in readable style the science of that 95 per cent of the animal kingdom—amebas, sponges, corals, jellyfishes, worms, starfishes, insects, and others—who pursue their divergent careers without benefit of backbone. Stressing principles rather than pure morphology, the book uses each group of animals to present one or more zoological principles in simple, non-technical language. Suitable as a text in general biology, general zoology, and invertebrate zoology, and as reading for the layman interested in science. The illustrations include a number of excellent photographs.

HEGNER, ROBERT WILLIAM

Invertebrate zoology. New York: The Macmillan Company, 1933. 570 p. illus. 22 cm. \$4.00. 1576

Contents (abridged): Phylum Protozoa. Phylum Porifera. Phylum Coelenterata. Phylum Ctenophora. Phylum Nematelminthes. Rotifera. Gastrotricha. Bryozoa. Brachipoda. Chaetognatha, and Phoronidea. Phylum Annelida. Phylum Mollusca. Phylum Arthropoda. Phylum Echinodermata.

Note: This textbook for intermediate college courses covers every group of invertebrates, with the exception of those belonging in the phylum Chordata, in a scheme which makes clear the general characteristics of each phylum and each important sub-group; the morphology, physiology, behavior, and ecology of representative types suitable for laboratory study; the relationships within phyla and between phyla; the classification of the invertebrates; the importance, economic and medical, of various forms to man; and something of the history of the study of invertebrate zoology. Lists of references to the literature on the various phyla are included.

HYMAN, LIBBIE HENRIETTA

The invertebrates: Protozoa through Ctenophora. New York: McGraw-Hill Book Company, Inc., 1940. 726 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences; A. F. Shull, consulting editor) \$7.00. 1577

Contents: Protoplasm, the cell, and the organism. Classification. The acellular animals—phylum Protozoa. Phylum Mesozoa. Introduction to the lower Metazoa. Metazoa of the cellular grade of construction—phylum Porifera, the sponges. Metazoa of the tissue grade of construction—the radiate phyla—phylum Cnidaria. The radiate phyla—phylum Ctenophora.

Note: The first volume of a projected treatise covering in a comprehensive manner the morphology, physiology, embryology, and biology of the invertebrates. One of the outstanding features of the book is the large number of illustrations made, wherever possible, directly from living or prepared material.

PRATT, HENRY SHERRING

592
P 88 ml
A manual of the common invertebrate animals, exclusive of insects. Thoroughly revised edition. 974 illustrations. Philadelphia: The Blakiston Company, 1935. 854 p. illus. 23 cm. \$7.50. 1578

Contents (abridged): Introduction. Protozoa. Porifera. Coelenterata. Ctenophora. Plathelminthes. Nemertea. Nematelminthes. Trochelminthes. Bryozoa. Brachiopoda. Phoronidea. Chaetognatha. Annelida. Arthropoda. Mollusca. Echinodermata. Chordata. List of authors. Glossary. Index.

Note: A manual for students of zoology containing descriptions of the common invertebrate animals by means of which their names and affinities can be determined. The book is intended mainly but not entirely for use in the eastern and central portions of the United States and Canada, and included in it are most of the common invertebrates, except insects, occurring in that region. In addition to these, however, representative species from the western and Pacific states are also included. Animals which inhabit the deep sea have not been included except in isolated cases. The use of scientific names follows the system adopted by the International Commission of Nomenclature. Line drawings and a glossary help make the keys more meaningful for the student. The second edition brings certain nomenclatures up to date and introduces several additional species, particularly from the fauna of the Pacific Coast region.

VAN CLEAVE, HARLEY JONES

Invertebrate zoology. Second edition. New York: McGraw-Hill Book Company, Inc., 1931. 282 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences) \$3.00. 1579

1094
Contents: Introduction. Phylum Protozoa. Introduction to the Metazoa. Phylum Porifera. The Coelenterates and Ctenophores. Phylum Plathelminthes. Phylum Nematelminthes. Phylum Trochelminthes. Phylum Coelhelminthes (Annelida). Phylum Molluscoidea. Phylum Echinoderma. Phylum Mollusca. Phylum Arthropoda—introduction and class Crustacea. Phylum Arthropoda exclusive of Crustacea and Insecta. Phylogeny.

Note: This book is intended for use as a supplementary text in introductory college courses in zoology. Its purpose is to offer the student systematic study of invertebrate organisms. New illustrations have been added to the second edition, and a considerable proportion of the text has been rewritten. More material of general biological interest has been introduced to relieve the overemphasis on morphology and taxonomy that characterized the first edition.

Protozoa

CALKINS, GARY NATHAN

593
C 1262
The biology of the Protozoa. Second edition, thoroughly revised. With 223 engravings and 2 colored plates. Philadelphia: Lea & Febiger, 1933. 607 p. illus. 24 cm. \$7.50. 1580

Contents: Introduction. The fundamental organization. Derived organization. Taxonomic structures. General physiology. Reproduction. Vitality. Phenomena accompanying fertilization. Effects of reorganization and the origin of variations in the Protozoa. General ecology, commensalism and parasitism. Special morphology and taxonomy of the Mastigophora, the Sarcodina, the Infusoria and the Sporozoa.

Note: A comprehensive treatise of the fundamental biological aspects of the unicellular animals written from a point of view which harmonizes the observations on parasitic forms with the

general biology of the free-living types. This work is based on the concept of a changing organization brought about by continued metabolism.

CALKINS, GARY NATHAN, AND FRANCIS M. SUMMERS, EDITORS

Protozoa in biological research. New York: Columbia University Press, 1941. 1148 p. illus. 23 cm. \$10.00. 1581

593.1
C 128
Contents: General considerations, by Gary N. Calkins. Some physical properties of the protoplasm of the Protozoa, by H. W. Beams and R. L. King. Cytoplasmic inclusions, by Ronald F. MacLennan. Fibrillar systems in ciliates, by C. V. Taylor. Motor response in unicellular animals, by S. O. Mast. Respiratory metabolism, by Theodore Louis Jahn. The contractile vacuole, by J. H. Weatherby. The technique and significance of control in protozoan culture, by George W. Kidder. Food requirements and other factors influencing growth of Protozoa in pure cultures, by R. P. Hall. The growth of the Protozoa, by Oscar W. Richards. The life cycle of the Protozoa, by Charles Atwood Kofoid. Fertilization in Protozoa, by John P. Turner. Endomixis, by Lorraine Loss Woodruff. Sexuality in unicellular organisms, by T. M. Sonneborn. Inheritance in Protozoa, by H. S. Jennings. The Protozoa in connection with morphogenetic problems, by Francis M. Summers. Certain aspects of pathogenicity of Protozoa, by Elery R. Becker. The immunology of the parasitic Protozoa, by William H. Taliaferro. Relationships between certain Protozoa and other animals, by Harold Kirby, Jr. Organisms living on and in Protozoa, by Harold Kirby, Jr. List of abbreviations. Index.

Note: This book by twenty leading specialists summarizes the latest developments and discoveries in protozoology as of 1941. Each topic which forms a subdivision of the field of the science is treated by a specialist on the subject. The whole work thus brings together recent technical information about the structure and bodily functions of the Protozoa and their relations with their environment and analyzes it for its significance in general biological research. Lengthy bibliographies are included with each paper.

CUSHMAN, JOSEPH AUGUSTINE, AND WILLIAM W. VALENTINE

Shallow-water Foraminifera from the Channel Islands of southern California. Stanford University, Calif.: Stanford University Press, 1930. 51 p. illus. 25 cm. (Contributions from the Department of Geology of Stanford University. Vol. 1, no. 1, February 28, 1930) Paper, \$1.00; cloth, \$1.50. 1582

Note: The collecting localities were the leeward side of San Clemente, Santa Catalina, Santa Barbara, Santa Cruz, and Anacapa Islands. Because of the slight differences in latitude and temperature of the waters at these localities, the Foraminifera are here considered as a single assemblage, related as a whole to the fauna of the west coast of South America and in some species to the West Indian region. The paper presents a number of new species and gives annotated descriptions of all forms found in these areas. There are ten plates of drawings.

Porifera

DE LAUBENFELS, MAX WALKER

A discussion of the sponge fauna of the Dry Tortugas in particular and the West Indies in general, with material for a revision of the families and orders of the Porifera. Washington, D.C.: Carnegie Institution of Washington, 1936. 225 p. illus. 29 cm. (Carnegie Institution of Washington. Publication no. 467. Papers from Tortugas Laboratory. Vol. xxx) Paper, \$2.25; cloth, \$3.25. 1582a

Contents: Introduction. Demospongiae Sollas: Keratosa. Haplosclerina. Pöcilosclerina. Halichondrina. Hadromerina. Epipolastida. Choristida. Carnosa. Hyalospongiae Vosmaer: Hexastero-

phora. Amphidiscophora. Calcspongiae Schmidt: Syconosa. Asconosa. Bibliography. Index.

Note: This paper is an attempt to systematize all sponge genera based upon studies carried on at the Tortugas Laboratory of the Carnegie Institution. Major attention is given to the class Demospongiae. The publication contains 22 plates and a bibliography of ten double-columned pages.

Coelenterata

VAUGHAN, THOMAS WAYLAND, AND JOHN WEST WELLS

Revision of the suborders, families, and genera of the Scleractinia. New York: The Geological Society of America, 1943. 363 p. illus. 24 cm. (Geological Society of America. Special papers. No. 44) \$3.25. 1583

Contents: Abstract. Historical résumé of investigations of the Scleractinia. Anatomy and morphology. Reproduction. Morphology and morphogenesis of the Corallum. Ecology. Distribution of fossil corals. Distribution of recent corals. Evolution. Systematic classification: class Anthozoa, subclass Hexacorallia, order Scleractinia. Genera of uncertain position. Selected references. Explanation of plates. Index.

Note: A study of the stony hexacorals and their phylogenetic relationships based on a re-examination of the genotype species of nearly every known genus of the scleractinians. The new classificatory scheme here proposed rests primarily on the structure of the septa, but other skeletal structures are also taken into consideration.

Echinodermata

CLARK, HUBERT LYMAN

Echinoderms from Australia. An account of collections made in 1929 and 1932, with 28 plates (16 colored) and 64 text figures. Cambridge, Mass., 1938. 596 p. illus. (part col.) 30 cm. (Harvard College. Museum of Comparative Zoology. Memoirs. Vol. LV) \$25.00. 1584

Note: The material described in this monograph consists of 11,484 specimens, representing 422 species of 184 genera. Most of the material was collected by the author on his two expeditions to Australia, while the balance is made up of gifts and loans from Australian colleagues and friends. The introduction, in which the two expeditions are described, contains descriptions of the various coastal regions of this continent which may be of value to future collectors. In the body of the book the material is treated first systematically by classes, then geographically by areas visited. In genera containing representatives of more than one species, previously known forms are given first, then the new species; in each group the species are arranged alphabetically. The source of the material is mentioned under each species. The monograph is beautifully illustrated.

Vermes

BENNETT, HARRY JACKSON

The life history of *Cotylophoron cotylophorum*, a trematode from ruminants. Urbana, Ill.: University of Illinois Press, 1936. 119 p. illus. 26 cm. (Illinois biological monographs. Vol. xiv, no. 4) Paper, \$1.50. 1587

Contents: Introduction. Materials and methods. History of the genus *Cotylophoron*. Egg. Miracidium: development. Hatching. Mature miracidium. Intermediate host: determination of the host. Biology of *Fossaria parva*. Sporocyst: development. Mature sporocyst. Redia: development. Mature redia. Daughter redia. Cercaria: development. Mature cercaria. Discussion of previously described amphistome Cercariae. Metacercaria. Adult: experimental infestation. Development. Specific description of *Coty-*

lophoron cotylophorum. Summary and conclusions. Bibliography. Plates.

Note: A study of all the developmental stages by the experimental method. The first complete study of an amphistome life history and the first report of a representative of the genus *Cotylophoron* from the mainland of North America.

HARTMAN, OLGA

New England Annelida, Part 2; including the unpublished plates by Verrill with reconstructed captions. New York: American Museum of Natural History, 1944. 50 p. illus. 27 cm. (American Museum of Natural History. Bulletin. Vol. 82, article 7) Paper, \$1.00. 1587a

Note: This report is an attempt to reconstruct the second part of a comprehensive projected study by the late Prof. A. E. Verrill, eminent zoologist at Yale University, on the polychaetous annelids of eastern North America. The first part was published by Verrill in 1881, in Volume 4 of the *Transactions* of the Connecticut Academy of Sciences. The second or final part never appeared, but proofs of numerous plates have been found, 16 of which are published in the present paper for the first time. An alphabetic list of species indicating illustrations in Parts 1 and 2, together with the present revised names, if any, is also included.

HARTMAN, OLGA

A review of the types of polychaetous annelids at the Peabody Museum of Natural History, Yale University. New Haven, Conn.: Bingham Oceanographic Laboratory, 1942. 98 p. illus. 23 cm. (Peabody Museum of Natural History, Yale University. Bulletin of the Bingham Oceanographic Collection. Vol. 8, article 1) Paper, \$1.50. 1587b

Note: In this reidentification of the older species of polychaetous annelids an attempt has been made to include all of the names erected by Verrill and Bush. The list is arranged alphabetically by original name and includes Museum catalogue number, discussed or accepted revised name, and page reference if discussed in the text. Each specimen considered there is described in detail and the condition of its preservation is indicated. The author gives exact references to original and subsequent descriptions and includes 73 general references in her bibliography.

HOPKINS, SEWELL HEPBURN

The papillose Allocreadiidae. Urbana, Ill.: University of Illinois Press, 1934. 80 p. illus. 26 cm. (Illinois biological monographs. Vol. XIII, no. 2) Paper, \$1.00. 1588

Contents: Acknowledgment. Introduction. Materials and methods. Morphology: Genus *Crepidostomum* Braun 1900. Genus *Megalognia* Surber 1928. Genus *Bunodera* Railliet 1896. Life histories of Allocreadiidae. Excretory system of Allocreadiidae. Relationships of the papillose Allocreadiidae. Summary. Bibliography. Plates. Index.

Note: Detailed, generic diagnoses for *Crepidostomum*, *Megalognia*, and *Bunodera*; comparison of known life histories of Allocreadiidae.

MILLER, EDWIN LYNN

Studies on North American Cercariae. Urbana, Ill.: University of Illinois Press, 1936. 125 p. illus. 26 cm. (Illinois biological monographs. Vol. xiv, no. 2) Paper, \$1.50. 1589

Contents: Introduction. Methods of investigation. Discussion of infection records. Discussion and key to the Illinois Cercariae. Cystocercous Cercariae of Lühe. Monostome Cercariae. Echinostome Cercariae. Xiphidiocercariae. Furcocercous Cercariae. Cercariaea. Summary. Bibliography. Plates. Index.

Note: Corrects some of the earlier errors in taxonomy and descriptions of North American Cercariae. Includes descriptions of four new Cercariae.

MIZELLE, JOHN DARY

Comparative studies on trematodes (Gyrodactyloidea) from the gills of North American fresh-water fishes. Urbana, Ill.: University of Illinois Press, 1938. 81 p. illus. 26 cm. (Illinois biological monographs. Vol. xvii, no. 1) Paper, \$1.00. 1590

Contents (abridged): Introduction. Materials and methods. Order Monogenea Carus, 1863: Historical review. Key to the suborders of Monogenea Carus. Key to the superfamilies of Monopisthocotylea Odhner, 1912. Superfamily Gyrodactyloidea Johnston and Tiegs, 1922: General morphology of the Gyrodactyloidea. Key to the families of Gyrodactyloidea. The North American fresh-water Gyrodactyloidea: Review of taxonomic literature. Key to the subfamilies of Gyrodactylidae Cobbold, 1877. Key to the subfamilies of Dactylogyridae Bychowsky, 1933. General morphology of the North American fresh-water Tetraonchinae Monticelli, 1903. Key to genera of North American fresh-water Tetraonchinae. Economic importance. Discussion. Summary. Bibliography. Plates.

Note: Descriptions of twenty-one monogenetic trematodes of the subfamilies Tetraonchinae and Dactylogyridae from the gills of Illinois fishes, with a few host records from Oklahoma. Review of detrimental effects to fish hosts, with methods of control.

Mollusca

BAILY, JOSHUA LONGSTRETH, JR.

Physiological group differentiation in *Lymnaea columella*. Foreword by Raymond Pearl. Baltimore: The Johns Hopkins Press, 1939. 133 p. illus. 23 cm. (The American journal of hygiene. Monographic series. No. 14) \$1.10. 1592

Contents: Preliminary survey. The problem. Material. The method. Longevity. Fecundity. Growth. Interrelations involving different biological variables. Conclusion. Bibliography. Index.

Note: This study examines the possibility of physiological differentiation of races which are structurally indistinguishable. The particular traits analyzed are rate of growth, fecundity, and duration of life. The evidence presented is for the pond snail, *Lymnaea columella*, taken from two different geographical localities, and it indicates that this study emphasizes the limitation of purely morphological description and the need for a wider knowledge of the physiological patterns of biological populations.

BAKER, HORACE BURRINGTON

Zonitid snails from Pacific islands. Part 1-4. Honolulu, Hawaii: Bernice P. Bishop Museum, 1938-41. 4 parts in 3 v. illus. 25 cm. (Bernice P. Bishop Museum. Bulletins 158, 165, 166) Vol. 1, \$2.00; Vol. 2, \$2.00; Vol. 3, \$3.00. 1592a

Contents: Part 1, Southern genera of Microcystinae. Part 2, Hawaiian genera of Microcystinae. Part 3, Genera other than Microcystinae. Part 4, Distribution and indexes.

Note: This series of papers deals with the Zonitidae and Helicarionidae, the most highly evolved pulmonate mollusks that have endemic members in most parts of the Pacific area. The region covered includes the major island-groups of Hawaii, Marquesas, Tuamotu, Society, Austral, Cook, Samoa, Tonga, Fiji, Caroline, Palau, and Marianas Islands, and, so far as their fauna is known, the smaller islands and groups between them. The material consisted of the collections of the Museum, supplemented by those of the Zoological Laboratory of the University of Pennsylvania and of the Academy of Natural Sciences of Philadelphia. The figures of shells were made by E. R. Tinkham.

BARTSCH, PAUL

Molluscan intermediate hosts of the Asiatic blood fluke, *Schistosoma japonicum*, and species confused with them. Washington, D.C.: The Smithsonian Institution, 1936. 60 p. illus. 24 cm.

(Smithsonian miscellaneous collections. Vol. 95, no. 5. Publication no. 3384) \$0.40. 1593

Note: A technical paper presenting a systematic description of genera and species, plus a separate historical account and discussion under each genus considered. The four genera here discussed are *Blanfordia*, *Katayama*, *Oncomelania*, and *Schistosomophora*, although the first-named genus is shown to be innocent of taking part in schistosomiasis. All of the specimens come from the Asiatic continent and off-lying islands. There is a bibliography covering material from 1861 to 1935.

COOKE, CHARLES MONTAGUE, JR., AND WILLIAM JAMES CLENCH

Land shells (Synceridae) from the southern and western Pacific. Honolulu, Hawaii: Bernice P. Bishop Museum, 1944. 14 p. illus. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. xvii, no. 20, December 8, 1943) \$0.25. 1593a

Note: During the course of studies on the land shells of the Pacific islands, many apparently new shells were found in the collection of the Bishop Museum. This paper describes two new genera, four new species, and a new subspecies. The genus *Gartretia* has been restudied and type elements drawn of the three known species. The type species of *Quadrasiella* and its operculum have been figured.

COOKE, CHARLES MONTAGUE, JR.

The land snail genus *Carelia*. Honolulu, Hawaii: Bernice P. Bishop Museum, 1931. 97 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 85) \$2.00. 1593b

Contents (abridged): Characters of the shell: size and shape; texture; color; aperture; columella; outer lip. Anatomy. Animals. Embryos. Species concept. New species. General relations. Colonies. Hybrids. History. Groups and keys. Explanation of plates.

Note: This paper is based on the nearly 5,500 specimens of the genus *Carelia* in the collections of the Bishop Museum. Of the 29 species and subspecies recognized in this paper, 12 are known only in the fossil state and are doubtless entirely extinct; 13 species or subspecies may be considered as recent or living, while nine may be classed as living. Many new species and subspecies are reported, and the author feels certain that many others will be discovered among both the living and extinct forms. Of the 42 colonies known at present, 13 are fossil. Besides these, specimens from three additional fossil colonies whose localities are unknown are represented in the Museum's collections. The logical sequence in which the groups of species of *Carelia* are distributed offers some clue to the early geography and topography of the island of Kauai.

GOODRICH, CALVIN

The Mollusca of Michigan. Ann Arbor: The University of Michigan Press, 1932. 120 p. illus. 19 cm. (University Museums, University of Michigan. Michigan handbook series. No. 5) \$1.00. 1594

Note: This handbook contains a brief introduction dealing with the use of scientific names, a discussion of the phylogenetic origin of the group, a brief historical sketch of the development of conchology in Michigan, and a summary arrangement of common ecological assemblages. The important species are then considered according to the three groups of shells found in nature, i.e. land shells, fresh-water snails, and mussels. All of the important species in the state are described and figured. There is usually a discussion of ecology, distribution, and other phases of their natural history. The book is so written as to be useful to both the amateur and the professional worker.

GUTSELL, JAMES SQUIER

Natural history of the bay scallop. Washington, D.C.: Government Printing Office, 1931.

63 p. illus. 23 cm. (United States. Bureau of Fisheries. Document no. 1100) Paper, \$0.30. 1595

Contents: Introduction. Economic importance. Literature. Classification and relationship. Habitat and distribution. Organization and mode of life. Reproduction and development. Growth, age at maturity, and length of life (annual growth line). Environmental factors. Enemies and parasites. Importance of a knowledge of scallop biology for conservation. Summary. Bibliography.

Note: This document reports the results of an investigation carried on at the United States Bureau of Fisheries station, Beaufort, North Carolina, between 1925 and 1928, of the bay scallop, *Pecten irradians*, one of the few commercial, edible bivalves of the Atlantic coast. Effort was concentrated on those aspects of life history which it was thought would yield knowledge of greatest usefulness for conservation.

JOHNSON, CHARLES WILLISON

List of marine Mollusca of the Atlantic coast from Labrador to Texas. Boston: Boston Society of Natural History, 1934. 203 p. 23 cm. (Boston Society of Natural History. Proceedings. Vol. 40, no. 1, p. 1-204) Paper, \$1.25. 1595a

Contents: Editor's notes. Introduction. List of Mollusca: Amphineura. Pelecypoda. Scaphopoda. Gastropoda. Cephalopoda. Bibliography. Index.

Note: A classified list of 2,632 species and varieties of mollusks found on the Atlantic coast above Mexico. To the name of each species is added the name of the identifying scientist and the date of identification, together with the geographical range of the species. The introduction contains a historical review of the bibliography of the East Coast mollusks. The bibliography itself covers 27 pages.

KEEN, ANGELINE MYRA

Abridged check list and bibliography of west North American marine mollusca. Stanford University, Calif.: Stanford University Press, 1937. 84 p. 21 cm. Paper, \$1.50. 1595b

Contents (abridged): Statistical methods in conchology. Conventions employed. Illustration of use of check list. Check list of west North American mollusca. Bivalves. Univalves. Bibliography. Publications indispensable for use in study of west North American mollusca. Maps of the east Pacific coast.

Note: An alphabetized reference list in which the author attempts to systematize all information published on west American mollusca after Carpenter (1758-1864) and Dall (1864-1908), including a few titles Dall did not observe. The author also supplies "biostratigraphers with a list of midpoints-of-range corrected to 1937."

KEEP, JOSIAH

West Coast shells; a description in familiar terms of principal marine, fresh-water, and land mollusks of the United States, British Columbia, and Alaska, found west of the Sierra. Revised by Joshua L. Baily, Jr. Stanford University, Calif.: Stanford University Press, 1935. 350 p. illus. 20 cm. \$3.75. 1596

Contents: Introduction. Scientific names and what they tell us. Ecology. Lamp shells and allied forms. Chitons and their relatives. Some primitive bivalves. Oysters, scallops, and mussels. The fresh-water pearl clams. The smaller kinds of clam. Chama, Cardium, and Venus. The tellens. Razor-shells. Burrowers in mud and sand. Dwellers in wood and stone. Some of the rarer clams. The tusk-shells. Gastropods in general. Abalones and key-hole limpets. A few rather diverse families. Shells without canals. Some carnivorous snails. The aristocracy. Rock shells, whelks, drills, and spindles. Cones, towers, and augers. Bubble-shells and allied forms. Some mollusks without shells. Fresh-water snails and their marine relatives. Snails of forest and field. The cephalopods. Index.

Note: A revision of Josiah Keep's work, first published in 1887, bringing the subject matter up to date. For the student as well as the amateur conchologist.

MORRIS, PERCY A.

What shell is that? A guide to the shell-bearing mollusks of eastern North America. New York: D. Appleton-Century Company, Incorporated, 1939. 198 p. illus. 9 cm. \$2.25. 1596b

Contents: Introduction. Glossary. The marine pelecypods. The marine gastropods. The fluviatile pelecypods. The fluviatile gastropods. The terrestrial gastropods. Index.

Note: An illustrated pocket guide for outdoor enthusiasts, amateur conchologists, and other nature lovers, giving scientific name, size, color, description, and natural-size or enlarged photographs of the commonly known molluscan fauna found on the stretch of coastline from Labrador to Cape Hatteras and inland to the Mississippi river. Notes on collecting and classifying, together with a glossary of 51 terms, are included in the Introduction.

NYLANDER, OLOF OLSSON

The Lymnaeidae of northern Maine and adjacent Canadian provinces, and notes on Anson Allen and his collection. Orono, Me.: The University Press, 1943. 43 p. illus. 23 cm. (University of Maine studies. Second series, no. 58) Paper, \$0.50. 1597

Contents: Foreword, by F. H. Steinmetz. Part I, The Lymnaeidae of northern Maine and adjacent Canadian provinces: Location. History and explorations. A catalog and notes on the family Lymnaeidae Broderip, 1839: Genus Lymnaea Lamarck, 1799. Genus Stagnicola (Leach) Jeffreys, 1830. Genus Fossaria Westerlund, 1885. Literature cited. Publications by Olof O. Nylander pertaining to the Mollusca of Maine. Part II, Anson Allen and his collections: Foreword. Acknowledgment. Anson Allen—a sketch of his life, by Edith M. Patch. The Anson Allen mollusk collection: List of land shells. List of fresh-water shells. List of stromboid shells. Notes on nomenclature of Strombidae. Appendix: Plates I-X, photographic reproductions of shells and habitats. A sketch of the life of Olof O. Nylander.

Note: This account of the lymnaeids is the result of a study of fresh-water snails which lasted for over 50 years. It is concerned mostly with the snails of the Fish River lakes in Aroostook county, northern Maine. The publication describes the different species of Lymnaeidae found in the region. It also contains memoirs of Anson Allen, whose collection of shells became the property of the University of Maine, and of the author, who died while this work was still in the press.

PERRY, LOUISE M.

Marine shells of the southwest coast of Florida. Illustrations by W. Hammersley Southwick. Ithaca, N.Y.: Paleontological Research Institution, 1940. 260 p. illus. 24 cm. (Bulletins of American paleontology. Vol. 26, no. 95) Paper, \$3.50; cloth, \$4.50. 1597a

Note: A systematic list of specimens which were taken alive or in such fresh condition that a local station may be reasonably assumed. Name, author, synonymy, measurements, anatomical description, locality, habits and habitat, distribution, and depth are given for each specimen listed. There are 39 plates containing about 400 photographs of specimens.

PILSBRY, HENRY AUGUSTUS

Land mollusca of North America (north of Mexico). Volume I, part 1. Philadelphia: The Academy of Natural Sciences of Philadelphia, 1939. 994 p. illus. 27 cm. (The Academy of Natural Sciences of Philadelphia. Monographs. Vol. I, no. 3) \$10.00. 1597b

Contents (abridged): Volume I, part 1. New families, subfamilies, genera and subgenera defined in volume I. New species, subspecies and formae defined in volume I, part 1. Introduction. Systematic treatment. Helicidae. Helicellidae. Helminthoglyptidae. Camaenidae. Polygyridae. Sagdidae.

Note: A detailed general reference classification for students and specialists. For each specimen classified, the work includes

key descriptions of measurements, color, and reproductive organs; distribution, and important references. Illustrations are both photographic and diagrammatic.

SMITH, MAXWELL

Panamic marine shells. Synonymy, nomenclature, range, and illustrations. Published by authority of the Beal-Maltbie Shell Museum of Rollins College, Winter Park, Florida. Winter Park, Fla.: Tropical Photographic Laboratory, 1944. 127 p. illus. 28 cm. \$6.00. 1598

Contents: Phylum Mollusca: Class Cephalopoda. Class Pteropoda. Class Gastropoda. Class Scaphopoda. Class Pelecypoda. Class Amphineura. Index of genera.

Note: This summary of the Panamic molluscan region is intended to present to the student illustrations of the majority of species inhabiting these waters, embracing those living within the various circumscribed zones, and including reproductions of the figures which have appeared over a period of years in various monographs and journal articles by other authors. Accompanying the names are notes on the dimensions, range, and publication in which the shell was first reported. The majority of the species included are illustrated.

SMITH, MAXWELL

World-wide sea shells. Illustrations, geographical range and other data covering more than sixteen hundred species and sub-species of molluscs; together with two articles by Joshua L. Baily. Lantana, Fla.: Tropical Photographic Laboratory, 1940. 139 p. illus. 28 cm. \$4.50. 1599

Contents: Origin of scientific names, by Joshua L. Baily. Pronunciation of scientific names, by Joshua L. Baily. Phylum Mollusca: Class Cephalopoda. Class Pteropoda. Class Gastropoda (univalves). Class Scaphopoda (tusk shells). Class Pelecypoda (bivalves). Class Amphineura (coat-of-mail shells). Phylum Brachiopoda: Supplement of American shells. Bibliography. Portraits of early conchologists. Map of North America. Index of genera.

Note: The author has endeavored to present in visual form as many different genera as possible, using photographs and line drawings which are placed close to the accompanying brief descriptive text. Sub-families and sub-genera have been omitted in order to keep the systematic arrangement as simple as possible. All of the species and subspecies are numbered consecutively. The handbook is intended primarily for the amateur collector.

WEBB, WALTER FREEMAN

United States Mollusca. A descriptive manual of many of the marine, land and fresh water shells of North America, north of Mexico. All species covered in the book are fully illustrated. Rochester, N.Y.: Walter Freeman Webb, 1942. 220 p. illus. 24 cm. \$2.50. 1599a

Note: A handbook for collectors, presenting photographs and descriptive notes of all types of East and West Coast marine shells, land shells, univalve fresh-water shells, naiad or pearly fresh-water mussel shells, fresh-water bivalve shells, shell tortoisés, sea urchins, stars, coral, preserved fish, and other sea curios. No attempt at systematic classification has been made, the purpose being only to guide the amateur to the acquisition, through purchase or field collecting, of interesting and worthy specimens. There is a brief glossary and about 50 short biographies of outstanding conchologists.

Crustacea

BANTA, ARTHUR MANGUN

Studies on the physiology, genetics, and evolution of some Cladocera. With the collaboration of Thelma R. Wood, L. A. Brown, and Lester Ingle. Washington, D.C.: Carnegie In-

stitution of Washington, 1939. 285 p. illus. 29 cm. (Carnegie Institution of Washington. Publication no. 513) Paper, \$2.50; cloth, \$3.00. 1600

Contents: General characterization of Cladocera. Early selection experiments. Sex intergrades in *Stimocephalus exspinosus*. Sex intergrades in *Daphnia longispina*. The excavated-head mutation. Control of male and sexual-egg production. Genetical studies in sexual reproduction. Growth and reproductive characteristics of *Daphnia longispina*. Growth of genetically different clones. Environmental conditions and *Daphnia* characteristics. Adaptation and evolution. Literature cited. Index.

Note: Presents a range of topics on the Cladocera or water flea, including among others: 1, Life history studies with special reference to means of inducing male and sexual egg production in these prevaillingly parthenogenetic animals, the occurrence of these phenomena in nature, and their adjustment to the biological requirements of the races involved. 2, Studies on the normal physiology and growth, and the growth patterns in genetically different clones. 3, Genetical studies including selection studies and the occurrence and inheritance of mutant characters in parthenogenesis and in sexual reproduction, the latter having become possible by means of a valuable technique developed by one of the collaborators, Dr. Thelma R. Wood.

CRAMPTON, HENRY EDWARD

Studies on the variation, distribution, and evolution of the genus *Partula*; the species inhabiting Moorea. Washington, D.C.: Carnegie Institution of Washington, 1932. 335 p. illus. (part col.) 29 cm. (Carnegie Institution of Washington. Publication no. 410) Paper, \$13.00; cloth, \$14.00. 1601

Contents: Introduction: relations and scope of the present investigation. The island of Moorea. The collections from Moorea. *Partula solitaria* new species. *Partula exigua* new species. *Partula tohivoeana* Crampton. *Partula olympia* Crampton. *Partula dendroica* Crampton. *Partula aurantia* new species. *Partula mirabilis* Crampton. *Partula mooreana* Hartman. *Partula suturalis* Pfeiffer. *Partula taeniata* Mörch. General discussion. Résumé. Supplement: statistical tables.

Note: A monograph dealing with the nature and natural history of the land-gastropods belonging to the genus *Partula* which inhabit the island of Moorea in the Society Group in the South Pacific Ocean. The present volume is the third in a series of studies of *Partula* by the same author, the first two being his *Studies on the variation, distribution, and evolution of the genus Partula: the species inhabiting Tahiti*, Washington, D.C., Carnegie Institution Publication no. 228, 1916; and *The species of the Mariana Islands, Guam, and Saipan*, Washington, D.C., Carnegie Institution Publication no. 228A, 1925. The fundamental facts presented by the study are the characters of the shells of the animals belonging to the species under consideration, and their individual, varietal and specific diversifications from locality to locality. Proceeding from such data, conclusions are drawn concerning the prior conditions and histories of the several distinguishable colonies and species. The author affirms that organic differentiation among the species cannot be traced to environmental circumstances. The main body of the work describes in detail the ten species which exist in Moorea only, their geographical locations, their varied conditions of internal diversification, their interrelationships, and their evolutionary histories. There are 22 plates in color and a large number of statistical tables.

GOODNIGHT, CLARENCE JAMES

The Branchiobdellidae (Oligochaeta) of North American crayfishes. Urbana, Ill.: University of Illinois Press, 1940. 75 p. illus. 26 cm. (Illinois biological monographs. Vol. xvii, no. 3) Paper, \$1.00. 1602

Contents (abridged): Introduction. Acknowledgments. Materials and methods of study. History of investigations on the Branchiobdellidae. Morphology of the Branchiobdellidae: External characters. Body wall. Digestive system. Vascular system. Respiratory system. Excretory system. Nervous system. Reproductive system. Relationships of the Branchiobdellidae. Characters of taxonomic significance: Body shape. Dorsal appendages. Peristomium. Jaws. Position of caudal sucker. Shape of gut. Pharyngeal diverticula. Opening of the anterior nephridia. Number of testes. Accessory sperm tube. Penis. Shape of spermatheca. Classification of the

American Branchiobdellidae. Biology: Host specificity. Food habits. Longitudinal distribution of branchiobdellids in a stream. Conclusions. Bibliography. Plates.

Note: The author summarizes the existing information on American forms, presents diagnostic keys, further defines the range of the species, and adds four new forms. A new subfamily is also recognized.

HOBBS, HORTON HOLCOMBE, JR.

The crayfishes of Florida. Gainesville, Fla.: The University of Florida, 1942. 179 p. illus. 25 cm. (University of Florida publication. Biological science series. Vol. III, no. 2) \$2.25 plus \$0.20 postage. 1603

Contents: The crayfishes of Florida. Factors affecting the distribution of crayfishes in Florida. The subfamily Cambarinae. Genus *Procambarus*. Genus *Troglocambarus*. Genus *Cambarellus*. Genus *Orconectes*. Genus *Cambarus*. A county list of the Florida crayfishes. Literature cited. Index.

Note: A study of specimens of crayfishes found throughout the state of Florida, with emphasis upon those from the northern and western parts of the state. While a large proportion of these specimens were collected by the author or his colleagues at the University of Florida, comprising some ten to twelve thousand Florida specimens, material was also studied in the United States National Museum, the Museum of Comparative Zoology, the Philadelphia Academy of Sciences, and the University of Michigan Museum of Zoology. For each species the author gives data on the form of both male and female, measurements, type locality, disposition of types, specimens examined, and geographical and ecological distribution.

HOFF, G. CLAYTON

The ostracods of Illinois, their biology and taxonomy. Urbana, Ill.: University of Illinois Press, 1942. 196 p. illus. 26 cm. (Illinois biological monographs. Vol. XIX, nos. 1-2) Paper, \$2.50. 1604

Contents (condensed): Introduction. Review of the literature. Methods of collection and preparation. Biology of Illinois ostracods: Habitats. Physical factors in the habitat. Biotic relationships. Seasonal distribution. Reproduction and ontogeny. Food. Geographical distribution of ostracods. Morphology of freshwater ostracods: Shell. Body segmentation and appendages. Respiratory, circulatory, excretory, digestive, and nervous systems. Reproductive system. Taxonomy: Order Ostracoda. Suborders of the order Ostracoda. Families of the suborder Podocopa *s. str.* Family Cypridae. Subfamily Candoninae *s. str.* Genus *Candona* Baird 1845. Subfamily Cyclocyprinae. Genus *Cyclocypris* Brady and Norman 1889. Genus *Cyprina* Zenker 1854. Genus *Physocypria* Vávra 1897. Subfamily Ilyocyprinae. Genus *Ilyocypris* Brady and Norman 1889. Subfamily Cyprinae *s. str.* Genus *Cypricercus* Sars 1895. Genus *Cyprinotus* Brady 1885. Subfamily Notodrominae. Genus *Notodromas* Lilljeborg 1853. Genus *Cyprois* Zenker 1854. Subfamily Cypridopsinae. Genus *Cypridopsis* Brady 1867. Genus *Potamocypris* Brady 1870. Family Darwinulidae. Genus *Darwinula* Brady and Norman 1889. Family Cytheridae. Subfamily Limnocytherinae. Genus *Limnocythere* Brady 1867. Subfamily Entocytherinae. Summary. Bibliography. Plates. Index.

Note: An original contribution to aid ecologists, fresh-water biologists, and zoologists in identifying ostracods occurring in Illinois, and to give some insight into the biology of the species found in Illinois.

PEARSON, JOHN CLEARY

The early life histories of some American Penaeidae, chiefly the commercial shrimp *Penaeus setiferus* (Linn.). Washington, D.C.: Government Printing Office, 1939. 73 p. illus. 28 cm. (United States. Bureau of Fisheries. Bulletin no. 30) Paper, \$0.20. 1604a

Contents: Introduction: *Penaeus setiferus* (Linn.), the common shrimp. *Penaeus brasiliensis* (Latreille), the grooved shrimp. *Trachypenaeus constrictus* (Stimpson). *Parapenaeus longirostris* (Lucas). *Eusicyonia stimpsoni* (Bouvier). General discussion. Literature cited.

Note: This bulletin describes the early life histories of the five principal American species of Penaeidae, covering their growth and distribution from egg to postlarval stage. The studies were made along the South Atlantic and Gulf coasts of the United States, beginning in 1931.

RATHBUN, MARY JANE

The oxystomatous and allied crabs of America. Washington, D.C.: The Smithsonian Institution, 1937. 278 p. illus. 23 cm. (Smithsonian Institution. United States National Museum. Bulletin no. 166) \$0.60. 1605

Contents (abridged): Introduction. The oxystomatous and allied crabs of America. Order Decapoda. Subtribe Gymnopleura. Subtribe Dromiacea. Subtribe Oxystomata. Subtribe Hapalocariniidae. Subtribe Brachygnatha. Index.

Note: A systematic description of the various divisions of the tribe Brachyura of the suborder Reptantia, and Decapoda, with greatest emphasis on the subtribe Oxystomata, which include the circular or ball-shaped crabs, the box crabs, and the mask crabs. Under the species treated are given the current scientific name, reference to the publication in which the form was first described or named, the type locality, diagnosis, description, measurements, range, habit, and material examined. There are 86 plates of photographs and many line drawings in the text.

VAN DEVENTER, WILLIAM CARL

Studies on the biology of the crayfish *Cambarus propinquus* Girard, with 46 graphs. Contribution from the Zoological Laboratory of the University of Illinois no. 509. Urbana, Ill.: University of Illinois, 1937. 67 p. illus. 23 cm. (Illinois biological monographs. Vol. XV, no. 3) Paper, \$1.00. 1605a

Contents: Introduction. Methods. Distribution of the species. Habitat. Relation to environment. The life cycle: Type of life history. The earliest young. Sex recognition. Growth of the juvenile population. Attainment of sexual maturity. Copulation. Static condition during the fall and winter. Spring reproductive activities. Spring molts of the yearling group. Growth among the yearling group. Attainment of maximum size. Death of the yearling adults. Probable nature of adult death. The summer adult group. Age attained by different groups and number of broods produced. Summary of the life cycle. Conclusions. Bibliography. Graphs.

Note: In this study a detailed and extended observational and statistical investigation has been made of the life cycle of a particular species of crayfish in a closely circumscribed locality—*Cambarus propinquus* Girard, the most common of the crayfishes in small streams of eastern Illinois. The statistics of the study concern size and population, and are represented by a series of graphs.

VAN NAME, WILLARD GIBBS

The American land and fresh-water isopod Crustacea. New York: American Museum of Natural History, 1936. 535 p. illus. 24 cm. (American Museum of Natural History. Bulletin. Vol. LXXI) Paper, \$4.00. 1605b

Contents: Introduction. Acknowledgments. The Isopoda. Names and general distribution of the American land and fresh-water Isopoda. List of new species described. Regional distribution. Descriptions of species. Bibliography. Supplement. Index.

Note: This monograph presents annotated descriptions, with outline illustrations, of the land and fresh-water Isopoda known in North and South America and the neighboring islands, including the new species contained in the collection of the American Museum of Natural History as well as a few others which have come to the author's attention. The material has purposely been kept within the limits of a handbook or manual and is intended to aid the specialist by bringing scattered information together in accessible form. A total of 254 terrestrial species, including several determined only generically by the authors recording them, and 49 fresh-water species are dealt with. About 350 references are listed in the bibliography.

Arachnida

BERLAND, LUCIEN

Polynesian spiders. Honolulu, Hawaii: Bernice P. Bishop Museum, 1944. 24 p. illus. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. xvii, no. 1, May 1, 1942) \$0.50. 1605c

Note: The material on which this study is chiefly based is a collection of spiders made during the Mangarevan Expedition in 1934, principally in the Austral Islands, the Society Islands, the Tuamotus, and Pitcairn Island. The author added some specimens collected in 1924 in the Phoenix Islands. The material consists of 46 species and 1 variety, of which 2 genera, 12 species, and 1 variety are new. The study has added to our knowledge of the spider fauna of the Pacific islands, especially that of Rapa, Marotiri, and the summits of Tahiti, and contributes to the solution of some problems of biogeographic affinities of this region.

BRYANT, ELIZABETH B.

Cuban spiders in the Museum of Comparative Zoology. Cambridge, Mass.: The Cosmos Press, Inc., 1940. 284 p. illus. 24 cm. (Harvard College. Museum of Comparative Zoology. Bulletin. Vol. lxxxvi, no. 7, June) \$3.50. 1606

Note: The collection of spiders in the Museum of Comparative Zoology is very rich in Cuban material, many of the specimens having been collected about the Harvard Station at Soledad. The specimens represent not only a wide and diversified area, but also have been taken in every month of the year. In the preparation of this paper, 280 species were seen, of which 92 are new. That each island of the West Indies has an indigenous fauna is evident from comparing the species of Cuba and those of Puerto Rico, the only other island that has been studied carefully. The presence of *Tettrablemma cambridgei* Bryant, a very primitive four-eyed species less than a millimeter in length, indicates that remnants of a very ancient fauna are present in Cuba. The classification of Petrunkevitch's *Systema Araneorum* has been followed in this study. There are 22 plates showing line drawings.

CHAMBERLIN, JOSEPH CONRAD

The arachnid order Chelonethida. Stanford University: Stanford University Press, 1931. 284 p. illus. 25 cm. (Stanford University publications. University series. Biological sciences. Vol. vii, no. 1) Paper, \$2.00; cloth, \$2.50. 1607

Contents: Introduction: Scope and plan of the paper. Literature. Material. Preparation of material for study. Measurements. Illustrations. The morphology of the Chelonethida: General considerations. Inter-ordinal homologies and relationships. Morphological elements of the body. Carapace. Chelicerae. Ventral sclerotic elements of the cephalothorax, or the coxal area. Morphology and function of rostro-maxillary complex. Dorsal aspect of the rostro-maxillary complex. Pedipalps. Pedipalpal chela. Walking legs. Abdomen. Systematics of the Chelonethida: General considerations. Historical chelonethology. Classification of the Chelonethida. Bibliography. General index. Index of illustrations.

Note: A unification of present knowledge of the comparative anatomy of the Pseudoscorpionida and a reorganization of the systematics of the order. Figures illustrating all important structures and their variations throughout the order are given. For entomologists.

CHAMBERLIN, JOSEPH CONRAD

Check list of the false scorpions of Oceania. Honolulu, Hawaii: Bernice P. Bishop Museum, 1934. 14 p. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. x, no. 22) \$0.50. 1607a

Note: In this list, all described species are arranged in systematic order, and there follows a faunal listing of the species and a bibliography of all the systematic papers dealing with the Chelonethida thus far recorded from the Australian region.

CHAMBERLIN, RALPH VARY, AND WILTON IVIE

Agelenid spiders of the genus *Cicurina*. Salt Lake City, Utah: The University of Utah, 1940. 108 p. illus. 25 cm. (Bulletin of the University of Utah. Vol. 30, no. 13, June 29, 1940. Biological series. Vol. v, no. 9) Paper, \$1.25. 1608

Note: A classification of 50 species, more than half of which are new. A number of species previously synonymized have been reclassified. The distribution, which is here limited to North America, is indicated by a system based on degrees of longitude and latitude. Color, structure, and anatomical measurements are given for each species described, and there are 97 drawings.

COMSTOCK, JOHN HENRY

The spider book; a manual for the study of the spiders and their near relatives, the scorpions, pseudoscorpions, whip-scorpions, harvestmen, and other members of the class Arachnida, found in America north of Mexico, with analytical keys for their classification and popular accounts of their habits. Revised and edited by W. J. Gertsch. New York: Doubleday, Doran & Company, Inc., 1940. 729 p. illus. (part col.) 25 cm. \$6.00. 1609

Contents (abridged): Spiders and their near relatives: The zoological position, the characters, and the orders of the Arachnida. External anatomy of spiders. Internal anatomy of spiders. Life of spiders: Methods of study, development of spiders, food, means by which spiders obtain their prey; the silk, types of webs; building of an orb-web; nests, pairing, motherhood, venom; aeronautic spiders. Order Araneida or spiders. Superfamily Avicularioidea or tarantulas. Superfamily Argiopeoidea or true spiders. Bibliography. Index.

Note: This spider primer has served the needs both of beginners and mature students of arachnology since its first edition in 1912. The form and limits of the original work have been preserved in the revised edition. The chapters on the morphology and habits of spiders remain unchanged, but numerous revisions have been made in the classification of spiders and their relatives, including several recently-classified families, such as those of the Ricinulei order. The bibliography has been enlarged.

HATCH, MELVILLE HARRISON

A bibliographical catalogue of the injurious arachnids and insects of Washington. Seattle, Wash.: The University of Washington, 1938. 56 p. 25 cm. (University of Washington. Publications in biology. Vol. i, no. 4) Paper, \$0.35. 1609a

Contents: Araneida. Acarina. Thysanura. Dermaptera. Orthoptera. Isoptera. Mallophaga. Plecoptera. Trichoptera. Thysanoptera. Anoplura. Homoptera. Hemiptera. Coleoptera. Diptera. Siphonaptera. Lepidoptera. Hymenoptera. Index to common names. Index to ordinal, family, and generic names.

Note: This catalogue cites in systematic order those arachnids and insects that have been mentioned in literature or are otherwise known to be injurious in the state of Washington, together with the references in the literature to their occurrence within the state. A total of 641 species are listed, divided among 18 orders, of which 201 are of the Coleoptera group. The references range from highly technical monographs to purely popular non-scientific accounts.

PETRUNKEVITCH, ALEXANDER IVANOVITCH

Catalogue of American spiders, by Alexander Petrunkevitch and collaborators. Part i. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1939. 205 p. 24 cm. (Connecticut Academy of Arts and Sciences. Transactions. Vol. 33, p. 133-338) \$2.25. 1609b

Contents: Introduction. Classification of the Araneae with key to suborders and families, by Alexander Petrunkevitch. List of species. Suborder Mygalomorphae, by Harriet Exline and Alexander Petrunkevitch. Index to families and subfamilies of Mygalomorphae. Index to genera of Mygalomorphae. Index to species of Mygalomorphae.

Note: This catalogue, which is to embrace all known species of spiders from the entire American continent and the adjacent islands, is being prepared because of the great advances made in arachnology since the publication, in 1911, of the author's *Synonymic index-catalogue of spiders*. The classification employed in the present catalogue is the one proposed by the author in 1933 and is based on an extensive study of the internal anatomy of spiders. Minor changes, based not merely on a reconsideration of known facts but on personal investigation of old and new material, have been incorporated in the Key and in the definitions of families. All portions of the catalogue will be published in the *Transactions* of the Academy. Part II, which deals with the orb-weaving spiders, will probably appear during the winter of 1945-46.

PETRUNKEVITCH, ALEXANDER IVANOVITCH

An inquiry into the natural classification of spiders, based on a study of their internal anatomy. New Haven, Conn.: Yale University Press, 1933. 90 p. illus. 24 cm. (Connecticut Academy of Arts and Sciences. Transactions. Vol. 31, p. 299-389, April) \$1.75. 1610

Contents (abridged): Introduction. Material and methods. Comparative anatomy. Analysis of the probable lines of evolution. The new system of spiders. Key to sub-orders, branches and families of the order Araneae. New definition of the family Ammoxenidae. Appendix. References. Explanation of figures.

Note: This article is based on a study of the anatomy of spiders representing all but three of the smallest and rarest families. Altogether, 92 species were investigated. A list of the spiders, including those studied by other investigators, is found in the appendix. In the body of the text comparative anatomical data are presented and are then analyzed in order to establish true relationships and to envisage the lines along which the separation of spiders into natural groups took place in the course of evolution. It is the author's thesis that if such lines can be discovered, they will furnish a true basis for the subdivision of the order. The discussion is summarized in two tables showing, respectively, the distribution of characters among the proposed sub-orders of spiders, and the probable steps through which the original Paleozoic stock passed before its division into smaller groups in more recent geological periods. The Key is designed to supplement the tables. Drawings on 13 plates illustrate the article.

PETRUNKEVITCH, ALEXANDER IVANOVITCH

The spiders of Porto Rico. Parts I-III. New Haven, Conn.: Yale University Press, 1929-30. 546 p. illus. 24 cm. (Connecticut Academy of Arts and Sciences. Transactions. v. 30, p. 1-158; 159-355; v. 31, p. 1-191) Each part, \$4.00. 1611

Contents: Part I, Nelipoda, Hypodemata, Tetrasticta and Trionycha (to Leptonetidae). Part II, Trionycha (Dictynidae to Mimetidae). Part III, Sub-order Arachnomorphae. Third branch Dionycha.

Note: The collection of spiders made by the author in 1925-26 is the largest ever made in Puerto Rico and therefore fairly representative of the arachnid fauna of the island. He also had the opportunity to study the collections at the American Museum of Natural History, at Cornell, and at the United States National Museum. Thus the present work is as nearly exhaustive as can be expected. It lists 174 species, 72 of which are new, one placed only in its genus on account of immaturity, and only four remaining doubtful. Three families not previously recorded from Puerto Rico have brought up the total number to 25. A new genus *Cyatholipulus* has been established, and the total list of genera increased to 100. Insufficiently described species have been redescribed in detail, and in several cases the opposite sex has been described for the first time. Detail drawings, 562 in number, illustrate all recognizable species. This study has established the relationship of the spider fauna of Puerto Rico to those of the other Antillean islands and thus has furnished a clue to the understanding of its origin, and consequently of its evolutionary trend.

Insects

CALIFORNIA ACADEMY OF SCIENCES

Contributions toward a knowledge of the insect fauna of Lower California. 7 parts. San Francisco, Calif.: The California Academy of Sciences, 1942-43. illus. 26 cm. (Proceedings of the California Academy of Sciences. Fourth series, Vol. 24, nos. 1 to 7 incl., March 31, 1942 to February 4, 1943) Paper, \$3.40 for the entire series. 1613

Contents: Introductory account, by A. E. Michelbacher. Coleoptera: Cerambycidae, by E. Gorton Linsley. Coleoptera: Buprestidae, by Edwin C. Van Dyke. Neuroptera: Myrmeleontidae, by Nathan Banks. Symphyla, by A. E. Michelbacher. Diptera: Culicidae, by Thomas H. G. Aitken. Coleoptera: Tenebrionidae, by Frank E. Blaisdell, Sr.

Note: A collection of seven technical papers on various aspects of the insect fauna of Lower California. With the exception of the "Introductory account," the papers present systematic descriptions of species belonging to each of the orders and families mentioned in the Contents above. A considerable number of new species are described for the first time. Each paper contains a selected bibliography.

COMSTOCK, JOHN HENRY, AND VERNON L. KELLOGG

The elements of insect anatomy; an outline for the use of students in the entomological laboratories of Cornell University and Leland Stanford Junior University. Thirteenth edition. Ithaca, N.Y.: Comstock Publishing Company, 1934. 145 p. illus. 24 cm. \$1.50. 1614

Contents: Terms denoting position and direction of parts. The external anatomy of a locust. The internal anatomy of an insect. The anatomy of the larva of the giant crane-fly. The external anatomy of a beetle. The mouth-parts of insects. The venation of the wings of insects. Methods of insect histology. Index and glossary.

Note: The course of study outlined in this laboratory manual is designed to teach the more general features of the structure of insects, and to serve as an introduction to more extended research into insect morphology. The emphasis throughout is on methods of careful observation and painstaking work.

COMSTOCK, JOHN HENRY, AND OTHERS

A manual for the study of insects, by John Henry Comstock, Anna Botsford Comstock, and Glenn W. Herrick. Twenty-second edition, revised. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1938. 401 p. illus. 24 cm. \$4.00. 1615

Contents: Insects and their near relatives. Class Hexapoda. Order Protura. Order Thysanura. Order Collembola. Order Orthoptera. Order Zoraptera. Order Isoptera. Order Neuroptera. Order Ephemera. Order Odonata. Order Plecoptera. Order Corrodentia. Order Mallophaga. Order Embiidina. Order Thysanoptera. Order Anoplura. Order Hemiptera. Order Homoptera. Order Dermaptera. Order Coleoptera. Order Strepsiptera. Order Mecoptera. Order Trichoptera. Order Lepidoptera. Order Diptera. Order Siphonaptera. Order Hymenoptera. Index.

Note: This text on American insects is intended for college as well as high school study, particularly for agricultural students. Analytical keys aid in classifying the common insects, and habits and transformations of the various forms are discussed. Economically important insects are described and methods of control of noxious ones are outlined.

DE LA TORRE-BUENO, JOSÉ ROLLIN, EDITOR

A glossary of entomology. Smith's "An explanation of terms used in entomology," completely revised and rewritten. Publication committee: J. R. de la Torre-Bueno, editor; George

P. Engelhardt, and Carl George Siepmann. Brooklyn, N.Y.: The Brooklyn Entomological Society, 1937. 336 p. 24 cm. \$5.00. 1615a

Note: Based on John B. Smith's work, Brooklyn, 1906, the present revision defines approximately 8,400 words and phrases used in entomology and in the related sciences of embryology, cytology, physiology, morphology, genetics, and ecology, covering most terms which are met in general and special treatises on insects. A section of medical entomological terms is also included, and there are a few mathematical phrases which are used mainly in genetics. Pronunciation and derivation are omitted, but references to authorities are given in parentheses and a list of 35 key words is provided. The stated purpose of the definitions as given is to fix a strict meaning for each term or word listed.

DUNCAN, CARL DUDLEY, AND GAYLE PICKWELL
The world of insects. New York: McGraw-Hill Book Company, Inc., 1939. 409 p. illus. (part col.) 23 cm. \$3.50. 1616

Contents: Introduction. Insect structures. How insects grow up. The growing up of a swallowtail butterfly. Insect foods and feeding habits. Some insect food-getting devices. How insects reproduce themselves. How insects get air. How insects move. How insects are protected. Insect voices. Insect fitness. Insect orders. Social life among insects. Value of insects. Injurious insects and their control. Where to look for insects. Rearing insects. How to collect and preserve insects.

Note: This book gives a general view of the vast world of insects: how they grow, how they feed, how they reproduce, how they protect themselves. Nearly two hundred illustrations emphasize insects alive and active; and chapters explain how to rear them, collect, and preserve them. It is intended for general readers and amateur collectors rather than specialists.

ESSIG, EDWARD OLIVER

College entomology. New York: The Macmillan Company, 1942. 900 p. illus. 24 cm. \$5.00. 1617

Contents: Metamorphosis of insects. Anatomy of insects. Classification of insects. Order Protura. Order Thysanura. Order Aptera. Order Collembola. Order Orthoptera. Order Grylloblattodea. Order Blattaria. Order Phasmoda. Order Mantodea. Order Dermaptera. Order Diploglossata. Order Plecoptera. Order Isoptera. Order Zoraptera. Order Embioptera. Order Corrodentia. Order Mallophaga. Order Anoplura. Order Ephemera. Order Odonata. Order Thysanoptera. Order Hemiptera. Order Megaloptera. Order Neuroptera. Order Raphidioptera. Order Mecoptera. Order Trichoptera. Order Lepidoptera. Order Coleoptera. Order Strepsiptera. Order Hymenoptera. Order Diptera. Order Siphonaptera. General references. Index.

Note: Designed as a basic text for introductory college courses. Written from a world point of view. Species are chosen for treatment on the basis of their historical background, economic importance, or unusual and interesting appearance. Each order is treated separately, and is provided with an historical explanation, synopsis of characters, biologies of typical members, keys, and numerous examples of genera and species.

ESSIG, EDWARD OLIVER

A history of entomology. New York: The Macmillan Company, 1931. 1029 p. illus. 22 cm. \$11.00. 1618

Contents: Prehistoric entomology. California Indians in relation to entomology. Historical background. Principal institutions in California featuring entomology. Some historical facts concerning the more important orchard mites and insects of California. The biological control of insect pests. Insecticides. Entomological legislation. Biography. A chronological table showing the development and progress of entomology in relation to history and the other sciences. Index.

Note: A comprehensive study of the history of entomology in the United States, with particular reference to California and the West, beginning with an examination of fossil records of primitive forms.

FOLSOM, JUSTUS WATSON

Entomology, with special reference to its ecological aspects. Revised by R. A. Wardle.

Fourth revised edition, with five plates and 308 text-figures. Philadelphia: The Blakiston Company, 1934. 605 p. illus. 23 cm. \$4.00. 1619

Contents: Classification. Anatomy and physiology. Development. Adaptations of aquatic insects. Color and coloration. Adaptive coloration. Insects in relation to plants. Insects in relation to other animals. Insects and disease. Interrelations of insects. Insect behavior. Distribution. Insect ecology. Insects in relation to man. Literature. Authors' index. Subject index.

Note: This book gives a comprehensive and concise account of insects written to meet the demand for a biological treatment of the subject. It is intended for use by the student and by the general reader. The fourth edition remains basically the same as earlier editions, but a considerable amount of new material has been interpolated. The chapters dealing with insects and disease and insects and man have been rewritten. Extensive changes have been made in the bibliography.

FROST, STUART WARD

General entomology. New York: McGraw-Hill Book Company, Inc., 1942. 524 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences; A. F. Shull, consulting editor) \$4.00. 1620

Contents: The position of insects in the animal world. Origin and distribution of insects. Abundance, size, and reproductive capacity of insects. Beneficial and injurious insects. Orders of insects. Metamorphosis. Immature insects. Insect morphology. Color. Sonification. Insect behavior. Insect association, including social insects. Solitary insects. Scavengers, predators, and parasites. Associations of plants and insects. Leaf-mining insects. Leaf-rolling insects. Gall insects. Boring insects. Subterranean insects. Aquatic insects. Casemaking insects. Cessation of activity.

Note: Designed for the beginning student, this text covers entomology from the standpoint of ecology rather than morphology or classification. Major emphasis is given to the habits and habitats of insects, and an effort is made to train the student to make observations in the field. Chapter bibliographies are included.

HOWARD, LELAND OSSIAN

The insect book; a popular account of the bees, wasps, ants, grasshoppers, flies and other North American insects exclusive of the butterflies, moths and beetles, with full life histories, tables and bibliographies. Garden City: Doubleday, Doran & Company, Inc., 1937. 429 p. illus. (part col.) 25 cm. \$5.00. 1621

Contents (abridged): Order Hymenoptera, table of suborders and super-families, the true bees, wasps, the true flies, table of higher groups, caddis-flies, scorpion flies, lace-winged insects, true bugs, scale insects, true lice, thrips, grasshoppers, katydids, crickets, earwigs, bird lice, book-lice and their allies, white ants, stone flies, dragon flies, May-flies or shad-flies, spring-tails and fish-moths. Collecting and preserving insects. Bibliography.

Note: This book not only gives typical life histories in nearly all of the groups considered, but also points the way to new discoveries in the cases of many insects whose life histories have yet to be completely told. These stories of insect lives are of interest to the general reader as well as to students and their teachers.

MATHESON, ROBERT

Entomology for introductory courses. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1944. 600 p. illus. 24 cm. \$5.50. 1623

Contents: Introduction. The phylum Arthropoda. The class Hexapoda. The mouthparts of insects. Development and growth in insects. Classification of insects. The subclass Apterygota. The Pterygota. Insects in relation to human welfare. Insects and the pollination of plants. Insects and human disease. Insects and plant disease. Bibliography. Index.

Note: Throughout this new book for beginning students, emphasis has been placed upon the biology, habits, and habitats of the common insects, with particular attention to the parts they play in relation to agriculture, industry, and man. Detailed ac-

counts are given of the external and internal structure of insects, with a special section describing and illustrating complexities of their mouthparts. In the fourteen chapters devoted to the discussions of the various orders, keys are supplied for the principal families in each group. The final chapters deal with the importance of insects as food for other animals, as scavengers, as aids to industry, as agents in pollination, and as carriers of disease.

MATHESON, ROBERT

Handbook of the mosquitoes of North America; their anatomy and biology; how they can be studied and how identified; how they carry disease and how they can be controlled. Second edition, revised and amplified. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1944. 314 p. illus. 24 cm. \$4.00. 1623a

Contents: Part I, Mosquitoes, a comprehensive survey: Characteristics of mosquitoes. The biology of mosquitoes. Mosquitoes in relation to human welfare. The problem of mosquito reduction. How to study, collect, rear, and preserve mosquitoes. A systematic account of North American mosquitoes: The family Culicidae. The tribe Anophelini. The tribe Culicini. The tribe Megarhinini. References. Index.

Note: This second edition is a complete revision, with much new material; the first five chapters have been condensed though new data and illustrations have been included. A new chapter on the Chaoborinae has been added. In the systematic part, new keys to the genera and species have been prepared, with a number of new illustrations. The aim of the text is to give brief accounts of the biology, habits, and distribution of North American species north of Mexico. The revised bibliography lists 210 references and there are 33 plates of anatomical details.

PETERSON, ALVAH

A manual of entomological equipment and methods. Ann Arbor, Mich.: Edwards Brothers, Inc., 1934-37. 2 v. illus. 28 cm. \$3.75. 1623b

Note: The author compiled this manual to be used as a text and general reference book for his course on "Research methods with living insects" at Ohio State University. Part I consists of outline drawings of equipment with explanations and references to literature where the equipment may be found or the names of contributors. Topics considered are insectories and some methods of measuring the environment with cages. A few useful tables are included. Part II attempts a compilation of abstracts and original contributions on rearing information (chiefly arachnids) found in English literature. Intentionally omitted is the commercial production of honey bees and silk worms. Abstracts of other subjects are on marking insects, shipping living and pinned specimens, collecting insects, and photography related to insects. Miscellaneous notes on museum and laboratory methods are included.

SNODGRASS, ROBERT EVANS

The feeding apparatus of biting and sucking insects affecting man and animals. Washington, D.C.: The Smithsonian Institution, 1944. 113 p. illus. 24 cm. (Smithsonian miscellaneous collections. Vol. 104, no. 7. Publication 3773) Paper, \$0.50. 1623c

Contents: Introduction. The cockroach. The biting lice and book-lice. Orders Mallophaga and Corrodentia. The elephant louse. The sucking lice. Order Anoplura. The flies. Order Diptera. The fleas. Order Siphonaptera. The thrips. Order Thysanoptera. The sucking bugs. Order Hemiptera. References, and textbooks on medical entomology.

Note: A monograph for medical entomologists which discusses the structure and physiology of those insects which obtain their food either with a pair of jaws working against each other or by means of a sucking apparatus. No previous knowledge of insect anatomy or anatomical nomenclature is assumed. A detailed study of the anatomy of the cockroach is introduced early in the text to serve as a basic model of the insect head and feeding organs. There is a 13-page section covering the piercing and pumping apparatus of mosquitoes. Ninety-eight references appear in the bibliography and there are 39 text figures.

WILSON, HARLEY FROST, AND M. H. DONER 595.7
The historical development of insect classification. St. Louis: Planographed by John S. Swift Co., Inc., 1937. 133 p. illus. 28 cm. \$4.00. 1625a

Contents: Preface. Introduction. The "habitat" or "locality" systems. The "alary" or wing systems. The "metamorphic" or transformation systems. The "cibarian" or "maxillary" system. The "circular" systems of classification. The classification of insects according to embryological characters. The "philosophical" system of Oken. The classification of insects according to the principle of cephalization. The classification of insects according to the pupa. The classification of insects according to segmentation. The classification of insects according to the thorax. The phylogenetic systems of classification. Some miscellaneous systems of insect classification. The classification of apterous insects. The classification of orthopteroid insects. The classification of the neuropteroid insects. List of references not cited in the text. Index of writers. Index of entomological names.

Note: This work for students and specialists in entomology brings together scattered information on the history and development of insect classification and describes the various systems.

Various Groups of Insects

ADAMSON, ALASTAIR MARTIN

Marquesan insects: environment. Honolulu, Hawaii: Bernice P. Bishop Museum, 1936. 73 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 139. Pacific Entomological Survey publication 9) \$1.00. 1626

Contents (abridged): Introduction: Scope; field work; maps. Geography: Relations, regional, interisland; dimensions of islands; topography; climate. Geology: General; vertical movements and land connections; age. Flora: General features; affinities and origin; floras of individual islands; zones; recent changes; food plants of insects. Notes on the individual islands. Bibliography.

Note: This bulletin gives a description of the environment of the terrestrial and fresh-water fauna of the Marquesas Islands, and a discussion of the geographical and geological problems that are of interest in connection with their origin. The paper is based on personal observations on seven of the ten principal islands, and also on the field notes and sketch maps prepared by G. Le Bronnec. The taxonomic data on the insect material obtained in the Marquesas are reported in *Bulletins* 98, 114, and 142, while *Bulletin* 159 offers a review of the fauna of these islands and a discussion of its origin.

BLACKWELDER, RICHARD ELIOT

Checklist of the coleopterous insects of Mexico, Central America, the West Indies, and South America. Washington, D.C.: Smithsonian Institution, 1944. 2 v. 24 cm. (Smithsonian Institution. United States National Museum. Bulletin 185, parts 1-2) Paper, Part I, \$0.35; Part II, \$0.30. 1626a

Note: The first two parts of a projected work which presents a systematic arrangement of families and genera. It includes an alphabetical list of the species in each genus, with synonyms and varieties of each, a citation to the original publication of each name, and an indication of the known geographical distribution by countries. In addition to these, a preliminary bibliography is planned for inclusion in the final portion of the work. The two parts available up to December, 1944 cover the suborders Archostemata and Adephaga, and 41 families of the suborder Polyphaga, which is to be continued in part III.

BORROR, DONALD JOYCE

A revision of the libelluline genus *Erythrodiplax* (Odonata). Columbus, O.: The Ohio State University, 1942. 286 p. illus. 23 cm. (Ohio

State University. Contributions in zoology and entomology. No. 4. Biological series) \$3.00.

1626b

Contents: Taxonomy. Morphological characters of the genus *Erythrodiplax*. Penis structure in the genus *Erythrodiplax*. Immature stages. Geographic distribution. Affinities of the genus *Erythrodiplax*. Interspecific relationships in the genus. Key to species. Systematic account of the groups and species in the genus *Erythrodiplax*. Literature cited.

Note: In this revision of the genus, the fundamental criteria of species have been the characters of the male genitalia, which were found to show considerable interspecific variation and very little intraspecific variation. The work is based on a study of about 8,000 specimens, about one-fourth of which were from collections in Europe and the remainder from collections in this country. Description, measurements, venation, and distribution are given in the species list. The bibliography lists 206 articles and monographs relating to dragonflies and there are 41 plates of drawings and photographs.

BYERS, CHARLES FRANCIS

A contribution to the knowledge of Florida Odonata. Gainesville, Fla.: The University of Florida, 1930. 327 p. illus. 23 cm. (University of Florida publication. Biological science series. Vol. 1, no. 1) Paper, \$1.50.

1627

Contents (abridged): Part I, Introduction. Part II, Taxonomy: Keys to Odonata of Florida. Descriptions of Florida Odonata. Part III, Ecology: Geology and physical geography of Florida. Florida biotic areas. Ecological observations on species of Florida Odonata. Chorological notes on Florida Odonata. Part IV, Appendix: Summary. Bibliography.

Note: The author has listed 119 species of Odonata, or dragonflies, taken in or reported from the state of Florida. Of these he has collected 92 species, consisting of 1592 specimens. At least 20 of the 92 species have never been recorded from Florida before and three are new to the United States. Complete taxonomic descriptions, with figures, are presented for 47 genera and 114 species including males, females, and known nymphs. Detailed ecological observations on the habits, homes, and life histories of Florida Odonata are also recorded. Fifty-seven references exclusive of text references are given in the bibliography.

CLAASSEN, PETER WALTER

A catalogue of the Plecoptera of the world. Ithaca, N.Y.: Cornell University, 1940. 235 p. 23 cm. (Cornell University. Agricultural Experiment Station. Memoir 232) Paper, \$0.30.

1627a

Contents: Introduction. Authors of species, and abbreviations used in index. Index of suborders, families, and subfamilies. Index of genera, subgenera, species, and varieties. Catalogue. Bibliography.

Note: The phylogenetic order and arrangement presented in this catalogue of stone-flies are the result of many years of research in original material and includes many new genera, new species, and one new family, Scopuridae. Under each form listed is given a complete bibliography of original literature together with the date and name of first describer. There are no descriptions of species or figures of type specimens, the emphasis being upon taxonomy rather than descriptive keys. The references to literature are given again in greater detail in the bibliography, which lists about 600 titles from the world literature of the field.

CLEVELAND, LEMUEL ROSCOE, AND OTHERS

The wood-feeding roach *Cryptocercus*, its Protozoa, and the symbiosis between Protozoa and roach, by L. R. Cleveland, in collaboration with S. R. Hall, Elizabeth P. Sanders, and Jane Collier. Boston, Mass.: American Academy of Arts and Sciences, 1934. 137 p. illus. (part col.) 29 cm. (American Academy of Arts and Sciences. Memoirs. Vol. 17, no. 2) Paper, \$6.50.

1627b

Contents: Introduction. The roach. Roach and Protozoa. The Protozoa. Order Hypermastigina Grassi, 1911: Family Hoplonymphidae Light, 1926. Family Staurojoenidae Grassi, 1917. Family Trichonymphidae Grassi, 1917. Family Eucomonymphidae fam. nov. Family Spirotrichonymphidae Grassi, 1917. Family Lophomonadidae Grassi, 1892. Order Polymastigina Blochmann, 1895: Family Dinonymphidae Grassi and Foà, 1911. Family Distomatidae Klebs, 1891. Family Trichomonadidae Wenyon, 1926. Relation of Protozoa to those of termites. The symbiosis: Introduction. Experiments. Probable origin of the symbiosis. Relation of termites to roaches. References cited. Index of authors. Index of subjects. Plates.

Note: The primitive insect *Cryptocercus punctulatus* and its intestinal Protozoa have not only lived together as partners for so long that they are inseparable, but the interrelation has become so close that it is impossible to learn much about the behavior of either member of the partnership without studying the other. The present monograph comprises a detailed study of the habits of this roach, its methods of breeding, the morphology and physiology of its digestive and reproductive systems, and the process of moulting, since all of these are connected in one way or another with the Protozoa and are essential for understanding the latter and the symbiosis between them and their host. There are 447 drawings and photographs.

COOLEY, ROBERT ALLEN, AND GLEN M. KOHLS

The Argasidae of North America, Central America and Cuba. Contribution from the Rocky Mountain Laboratory, Hamilton, Montana. Division of Infectious Diseases, National Institute of Health, United States Public Health Service. Notre Dame, Ind.: The University of Notre Dame, 1944. 152 p. illus. 24 cm. (The American midland naturalist monograph no. 1) \$2.00.

1628

Contents (abridged): Introduction. The medical and veterinary importance of the Argasidae. Principal characters. Methods. Family Argasidae Canestrini. Genus *Argas* Latreille. Genus *Otobius* Banks. Genus *Ornithodoros* Koch. Genus *Antricola* Cooley and Kohls. Classified list of hosts. Geographical distribution of species. Bibliography. Index.

Note: A systematic description of the Argasidae, or ticks, known in North America, Central America, and Cuba, including several species of known medical or veterinary importance. Citations of literature, detailed anatomical description and measurements, distributions and hosts, and related facts of importance to the medical entomologist are included. There are 14 plates of photographs and 112 additional bibliographic references.

CREGAN, MARY BERTHA, SISTER

Generic relationships of the Dolichopodidae (Diptera), based on a study of the mouth parts. Urbana, Ill.: University of Illinois Press, 1941. 68 p. illus. 26 cm. (Illinois biological monographs. Vol. xviii, no. 1) Paper, \$1.00.

1628a

Contents: Acknowledgments. Introduction. Materials. Methods of procedure. Family characteristics, habitats, and food habits. Subfamilies of the Dolichopodidae: Classification of Aldrich (1905). Classification of Lundbeck (1912). Classification of Becker (1922). Classification of Curran (1934). Mouth parts of the Dolichopodidae: Langhoffer's study. Other studies. Lateral aspects of the entire mouth parts. Clypeolabralpharyngeal region. Epipharyngeal armature. Hypopharynx. Labium. Pseudotracheae. Relationship of the genera based on the present study. Summary. Bibliography. Plates. Index to genera.

Note: Twelve groups of genera are recognized on the basis of the structure of the mouth parts. The labrum, the epipharyngeal armature, and the pseudotracheae are the only mouth parts considered in the generic groupings.

CURRAN, CHARLES HOWARD

The families and genera of North American Diptera. Mount Vernon, N.Y.: John D. Sherman, Jr., 1934. 512 p. illus. (part col.) 24 cm. \$10.00.

1629

Contents: Preface. Introduction: Acknowledgments. Collection and care of Diptera. Flies and disease. Flies and crops. Beneficial flies. Aenent the insect war. Morphology of Diptera. Classification of Diptera. How to use the keys. North American Diptera. Glossary of terms used in dipterology. Comstock-Needham system of wing venation. Literature. Index.

Note: The author presents for students a generic classification of adult flies, using the simple Williston system of nomenclature. A colored plate assists in the determination of families. The glossary explains all terminology. The literature lists general works for students of Diptera, current American periodicals dealing entirely with entomology, and scientific publications containing entomological papers. Diagrams are numerous and well identified.

DILLON, LAWRENCE S., AND ELIZABETH S. DILLON

The tribe Monochamini in the western hemisphere (Coleoptera: Cerambycidae). Reading, Pa.: Reading Public Museum and Art Gallery, 1941. 135 p. illus. 26 cm. (Reading Public Museum and Art Gallery. Scientific publications. No. 1) Paper, \$2.50. 1629a

Note: More than 6,000 specimens of the tribe Monochamini or long-horned beetles of the family Cerambycidae have formed the basis of the present paper, representing the collections of 21 institutions in the United States. Included in this material are type or type-compared specimens of nearly all the North American species. The tribe contains over 600 known species grouped in nearly 100 genera. Over 100 forms are found in the western hemisphere and only 22 are known from North America. Original literature, synonymy, description, measurements, type locality, distribution, and key to species are presented under each species covered. There are 82 figures.

DOBZHANSKY, THEODOSIUS GRIGORIEVICH, AND CARL EPLING

Contributions to the genetics, taxonomy, and ecology of *Drosophila pseudoobscura* and its relatives. Washington, D.C.: Carnegie Institution of Washington, 1944. 183 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 554) Paper, \$2.25; cloth, \$2.75. 1629b

Contents: Taxonomy, geographic distribution, and ecology of *Drosophila pseudoobscura* and its relatives, by Th. Dobzhansky and Carl Epling. Chromosomal races in *Drosophila pseudoobscura* and *Drosophila persimilis*, by Th. Dobzhansky. The historical background, by Carl Epling.

Note: Since the publication of Morgan's classic paper *An attempt to analyze the constitution of the chromosomes on the basis of sex-linked inheritance in Drosophila*, New York, 1911, the science of genetics has revolved around *Drosophila* work. For studies on the genetics of natural populations, race formation, and species differentiation, *D. pseudoobscura* has recently come to the fore as a laboratory animal superior in some respects to *D. melanogaster*, upon which the earlier and fundamental laboratory work was performed. The three papers in the present volume present the results of original research on the biology of *D. pseudoobscura* and its nearest relatives which should serve as a background for the work on the population genetics of these species. There are extensive bibliographies at the end of each paper and numerous charts and tables throughout the text.

DUNCAN, CARL DUDLEY

A contribution to the biology of North American vespine wasps. Stanford University: Stanford University Press, 1939. 272 p. illus. 25 cm. (Stanford University publications. University series. Biological sciences. Vol. VIII, no. 1) Paper, \$2.50; cloth, \$3.25. 1630

Contents: Introduction. The morphology of *Vespula pennsylvanica* (Sauss.). The female. The worker. The male. Systematic considerations: Characteristics of the Vespinae. Biology of the vespine: Seasonal history of a wasp colony. Hibernation. Foods and feeding behavior. Building activities. Life history and

metamorphosis. Miscellaneous. Bibliography. Plates I-LIV (with keys). Index.

Note: Embodies observations on the North American paper-making wasps belonging to the hymenopterous family Vespidae, subfamily Vespinae, consisting of hornets and yellow-jackets.

EDMONDSON, CHARLES HOWARD

Callianassidae of the Central Pacific. Honolulu, Hawaii: Bernice P. Bishop Museum, 1945. 27 p. illus. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. XVIII, no. 2, October 15, 1944) \$0.50. 1631

Note: This report is based on the small collection of Callianassidae in the Bishop Museum, specimens taken principally from the shallow reefs of Oahu, but also from Tahiti, Guam, and Wake islands. The total number of recorded species of this family is less than 200, and few representatives of the family have been reported from the Hawaiian Archipelago. Knowledge of the early phases of members of this family is limited, as well. Few larval forms have been definitely identified, and very few have been hatched from eggs. Larvae of a new species from Hawaii, *Callianassa parva*, which the author succeeded in hatching during this study, are here reported.

EWING, HENRY ELLSWORTH, AND IRVING FOX

The fleas of North America: classification, identification, and geographic distribution of these injurious and disease-spreading insects. Washington, D.C.: Government Printing Office, 1943. 143 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 500) \$0.20. 1632

Contents: Introduction. The economic importance of fleas. The structure of the siphonapteran head. The thorax. The modified terminal abdominal segments. The origin and relationships of the Siphonaptera. The order Siphonaptera: Key to the families and subfamilies of Siphonaptera. The family Dolichopsyllidae Baker. The family Hystrichopsyllidae Tiraboschi. The family Ischnopsyllidae, Wahlgren. The family Pulicidae Stephens. The family Stephanocircidae Wagner. The family Hectopsyllidae Baker. List of synonyms of North American species and subspecies. Literature cited. Illustrations (figs. 4-13). Taxonomic index.

Note: This publication is intended to serve as a basis for disease prevention and flea control by presenting the data necessary to the proper identification of the fleas of North America. Full descriptions are given of the genera and higher groups, accompanied in most instances by figures. For species, subspecies, and varieties data are supplied as follows: indication of synonymy, name of type host, type locality, statement relative to range, and remarks upon identification characteristics, nature of original description, references to figures, published notes on biology or economic importance, and re-descriptions. The publication covers 61 genera, 14 subgenera, 209 species, and 63 subspecies and varieties of fleas from North America and the West Indies.

EYLES, DON E.

A critical review of the literature relating to the flight and dispersion habits of anopheline mosquitoes. Washington, D.C.: Government Printing Office, 1944. 39 p. illus. 23 cm. (United States. Public Health Service. Public health bulletin no. 287) \$0.10. 1633

Contents: Introduction. Technique of experimental study of mosquito flight. Technique of determining flights by observation. Annotated list of species. A tabular summary of the data available on the flight range of the important Anopheles vectors. Bibliography.

Note: This publication reviews the literature concerning the radius of flight or dispersion of the anopheline mosquitoes. The subject is of importance to those planning control measures.

FERNALD, HENRY TORSEY

The North American and West Indian digger wasps of the genus *Spheg* (*Ammophila* auct.).

Orlando, Fla.: The author, 707 E. Concord Avenue, 1934. 167 p. illus. 22 cm. Paper, \$2.50.

1633a

Contents: Introduction. External structure. Surface characters. Sex distinctions. Variations: Size. Color and coloration. Methods. Classification. Analytical key to tribes. Analytical key to genera. Analytical key to species: Description of species: Species group Coloptera. Species group Spheg (sens. str.). Unrecognized species. Index. Explanation of plates.

Note: This monograph describes in detail 38 recognized species of the genus *Spheg* found in North America and the West Indies. The material on which the study was based consisted of many thousand specimens. References to the literature are printed with the descriptions of species.

FERRIS, GORDON FLOYD

Atlas of the scale insects of North America. Series I-IV. Stanford University, Calif.: Stanford University Press, 1937-1942. 447 parts in 4 v. Complete atlas, looseleaf, \$23.75; bound, \$27.75. Parts also sold separately.

1633b

Contents: Family Diaspididae, subfamily Diaspidinae, tribes: Diaspidini, Odonaspidini, Xanthophthalmini, Aspidiotini, and Phoenicococcinae. Index.

Note: A complete atlas for the family Diaspididae, made up of 447 parts, each species being treated as a separate unit with a full page of pen and ink drawings as well as the descriptive material concerning it. The genera, likewise, are each accorded a descriptive sheet and in the case of those of most importance there are accompanying morphological figures. A reference work for zoologists and libraries with zoological collections.

FISHER, WARREN SAMUEL

A revision of the North American species of buprestid beetles belonging to the tribe Chrysobothrini. Washington, D.C.: Government Printing Office, 1942. 275 p. illus. 22 cm. (United States. Department of Agriculture. Miscellaneous publication no. 470) Paper, \$0.30.

1634

Contents: Introduction. Classification: Tribe Chrysobothrini Stein. Description of the tribe. Key to the genera. Genus *Actenodes* Dejean. Genus *Chrysobothris* Eschscholtz. Unrecognized and fossil species. Literature cited. Illustrations. Index. Index to host plants.

Note: This revision is the result of several years' study of *Actenodes* and *Chrysobothris* and comprises all the species of these genera found in the mainland of America north of Mexico, but including Lower California, being the first revisional study of the North American species since 1886. The task was undertaken because of the economic importance of these beetles. The publication confines itself to systematic treatment of the various species, giving complete descriptions of seven species of *Actenodes* and 115 species of *Chrysobothris*. Control of the insects is not covered.

FORBES, WILLIAM TROWBRIDGE MERRIFIELD

The Lepidoptera of Barro Colorado Island, Panama. Cambridge, Mass.: The Cosmos Press, Inc., 1939. 230 p. illus. 24 cm. (Harvard College. Museum of Comparative Zoology. Bulletin. Vol. LXXXV, no. 4, August) \$2.00.

1634a

Contents (abridged): Family Euechmiidae: Subfamilies Euechmiinae, Ctenuchinae. Family Nolidae. Family Arctiidae: Subfamilies Lithosiinae, Arctiinae. Family Pericopidae. Family Agaristidae. Family Lymantriidae. Family Notodontidae: Subfamilies Melalopinae, Notodontinae, Cerurinae. Family Diopitidae.

Note: The object of this report, which gives a fair sample of the fauna of Barro Colorado Island, is to put the new data on record and also to present the material as a basis for other biological studies which may be made there. The material was collected all through the year, although less systematically in the summer than in the other seasons. Nevertheless the author feels confident that all the really dominant species are included. Most of the material is in the Museum of Comparative Zoology. The paper has been arranged with a view to the needs of persons intending to identify material as a basis for biological studies;

consequently, brief keys are included of the species actually taken on the island, and those included in the National Museum survey; and the bibliographic citations emphasize the published figures.

FOX, IRVING

Fleas of eastern United States. Ames, Ia.: The Iowa State College Press, 1940. 191 p. illus. 23 cm. \$3.00.

1634b

Contents: Order Siphonaptera Latreille. Suborder Integricipita Oudemans. Suborder Fracticipita Oudemans. Family Hectopsyllidae Baker. Family Pulicidae Stephens. Family Dolichopsyllidae Baker. Family Hystrichopsyllidae Tiraboschi. Family Ischnopsyllidae Wahlgren. Synonymic index. Host index. Selected bibliography. General index.

Note: An authoritative treatise on a group of insects recognized as potential disease vectors of importance. An aid to parasitologists, physicians, and veterinarians in identifying fleas of the United States, including carriers of bubonic plague, endemic typhus fever and the intermediate hosts of tapeworms commonly found in the dog and cat.

HATCH, MELVILLE HARRISON, AND OTHERS

Coleoptera of Washington. Seattle, Wash.: University of Washington Press, 1932-41. 5 v. illus. 25 cm. (University of Washington. Publications in biology. Vol. 1, nos. 2, 3, 5; Vol. 10, nos. 1-3) Paper, Vol. 1, no. 2, \$0.50; no. 3, \$0.15; no. 5, \$0.25; Vol. 10, no. 1-3, \$1.50.

1635

Contents (abridged): Chrysomelidae, by Samuel Beller and Melville H. Hatch. Silphidae, by Melville H. Hatch and William Rueter, Jr. Carabidae: Cicindelinae, by Melville H. Hatch. Carabidae: Agonini, by Barbara Gray and Melville H. Hatch. Sphaeritidae and Histeridae, by Rita Margaret McGrath and Melville H. Hatch. Buprestidae, by Frank M. Beer and Melville H. Hatch.

Note: A series of technical papers on the Coleoptera recorded in the state, presenting keys containing brief but adequate diagnosis of the forms that occur in the region, with an indication of the geographical distribution, the original literature, the bionomy, and the economic importance of each species. The series is not as yet complete.

HOLLAND, WILLIAM JACOB

The butterfly book. A popular and scientific manual, describing and depicting all the butterflies of the United States and Canada. New and thoroughly revised edition. Garden City, N.Y.: Doubleday, Doran & Company, Inc., 1931. 424 p. illus. (part col.) 26 cm. \$10.00.

1636

Contents (abridged): Life-history and anatomy of butterflies. Capture, preparation, and preservation of specimens. Classification of butterflies. Books about North American butterflies. Butterflies of North America north of Mexico: brush-footed butterflies, milkweed butterflies, glassy wings, heliconians, nymphs, satyrs, snout-butterflies, metal-marks, hairstreaks, coppers, blues, sulphurs, whiter, Parnassians, swallowtails, skippers. Index.

Note: A manual intended to enable the amateur butterfly collector to identify, name, and properly classify his collection, and to prepare him for more advanced research. The work is confined to the fauna of North America north of the Rio Grande of Texas, and, though essentially popular in character, it is based on the author's seventy years of collecting and upon the entire literature of lepidoptery. Illustrated with seventy-three color plates and numerous line drawings. The revised edition covers about 200 more species than the original edition, which was first published in 1898.

HORVÁTH, GÉZA, AND OTHERS, EDITORS

General catalogue of the Hemiptera. Géza Horváth, W. E. China, and H. M. Parshley, editors. Northampton, Mass.: Smith College, 1927-43. 23 cm. Paper, Fasc. I, \$3.50; fasc. II, \$0.50; fasc. III, \$1.50; fasc. IV, part I, \$1.00; part II, \$2.00; part III, \$5.00.

1636a

Contents: Introduction. Fascicle I: Membracidae, by W. D. Funkhouser. Fascicle II: Mesoveliidae, par Géza Horváth. Fascicle III: Pyrrhocoridae, by Roland F. Hussey, with bibliography by Elizabeth Sherman. Fascicle IV, Fulgoroidea: Part I, Tettigometridae, by Z. P. Metcalf. Part II, Cixiidae, by Z. P. Metcalf. Part III, Araeopidae (Delphacidae), by Z. P. Metcalf.

Note: Intended to fill the need for a comprehensive catalogue of the Hemiptera of the world which will include a large number of bibliographic references. The present catalogue was begun in 1927 under the auspices of the American Association for the Advancement of Science at Cincinnati, sponsored by an international commission of ten members, and is still in the process of publication. The purpose of the work is to include all the families of the Hemiptera with the enumeration of all the genera and of all the living species with an indication of their geographic distribution and their complete bibliography. Each family and subfamily is entrusted to the most competent specialist and is published in separate fascicles. The notes may be written in Latin, French, German, or English, depending on the nationality of the specialist; the general introduction by M. Horváth is in French. The International Rules of Zoological Nomenclature adopted by the International Congress of Zoology are used throughout. Each fascicle has a separate index. (Fascicle IV, parts IV-VII, by Z. P. Metcalf, paper, \$2.75, appeared in 1945.)

HUBBELL, THEODORE HUNTINGTON

A monographic revision of the genus *Ceuthophilus* (Orthoptera, Gryllacrididae, Rhaphidophorinae). Gainesville, Fla.: The University of Florida, 1936. 551 p. illus. 26 cm. (University of Florida publication. Biological science series. Vol. II, no. 1) Paper, \$4.00. 1636b

Contents: Introduction. The taxonomic position of the genus *Ceuthophilus*. *Ceuthophilus* Scudder. Section I, *Ceuthophilus* Scudder, s.s.: Utahensis series. Brevipes series. Maculatus series. Arizonaensis series. Lapidicola series. Section II, *Geotettix* new subgenus: Fusiformis series. Nodulosus series. Section III, *Hemideopssylla* Saussure and Pictet: Californianus series. Latipes series. Observations on life history, habits and relations to other organisms. Phylogeny and distribution. General conclusions. Literature cited. Index.

Note: A detailed systematic description of the genus *Ceuthophilus*, which comprises the majority of the North American species of the subfamily Rhaphidophorinae, a group of Orthoptera commonly known as cave-cricket and camel-cricket. The present work undertakes to revise Scudder's *The North American Ceuthophili*, Washington, 1894, although the seven genera recognized are in the main those of Brunner's and Scudder's earlier works, only *Phrixocnemis* being new. The primary concern is with Scudder's inadequate treatment of the characters found in the terminal abdominal structures of the male, and his resulting incorrect grouping of species. Description of holotype or allotype, including detailed measurements, coloration, variation, bionomics, distribution, and citations of the original literature are covered under each species treated. There is an additional bibliography of approximately 300 references, 38 plates of drawings, and an extensive index.

HUTCHINSON, GEORGE EVELYN

A revision of the Corixidae of India and adjacent regions. New Haven, Conn.: Connecticut Academy of Arts and Sciences, 1940. 135 p. illus. 24 cm. (Connecticut Academy of Arts and Sciences. Transactions. Vol. 33, p. 339-476) \$2.50. 1636c

Contents: Introduction. Nomenclature of family and genera. Walton's classification of the family. Taxonomic account. Ecological notes. Bibliography.

Note: This paper is based on the extensive collections of aquatic Hemiptera made during the course of the Yale North India Expedition in 1932, when the author had opportunity to collect not only in Kashmir, the Punjab, and in Indian Tibet, but also in southern India. In addition, he was able to study the collections of the Indian Museum and other material loaned to him for this investigation. There are 36 plates showing 428 figures, chiefly line drawings, and photographs of the habitats of some of the species.

JELLISON, WILLIAM LIVINGSTON, AND NEWELL E. GOOD

Index to the literature of Siphonaptera of North America. Washington, D.C.: Government Printing Office, 1942. 193 p. 23 cm. (United States. National Institute of Health. Bulletin no. 178) Paper, \$0.25. 1637a

Contents: Introduction. Synopsis of the families, subfamilies, and genera of North American Siphonaptera. The order Siphonaptera. The families and subfamilies of Siphonaptera. The genera, species, and subspecies of Siphonaptera. Guide to type localities. Bibliography. Index.

Note: This index lists the species of Siphonaptera described or reported for North America north of Mexico, including Greenland, up to July 1, 1939. The annotated bibliography of each species includes references to the regional description, changes in generic designation, synonymy, and the nine important references on distribution and host data. The references, which are listed again in the bibliography at the end of the text, total approximately 300.

KING, WILLARD VAN ORSDEL, AND OTHERS

The mosquitoes of the southeastern states, by W. V. King, G. H. Bradley, and T. E. McNeel. Washington, D.C.: Government Printing Office, 1944. 91 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 336) \$0.25. 1637b

Contents: Introduction. Genera and species found in the southeastern states. Literature on mosquitoes. General characteristics and habits of mosquitoes. Collection and preservation of material. Mosquito identification. Mosquito control. Notes on the genera and species. Synoptic tables for the identification of the mosquitoes of the Southeast. Literature cited. Index.

Note: This publication, slightly revised from the 1939 edition, deals with the mosquitoes recorded from the nine southeastern United States. It brings together information on mosquito species from these states that is widely scattered and provides a convenient means of identification. It contains notes on the habits of the species, their distribution, economic importance, and methods of control, together with descriptive keys for the identification of adults and larvae.

LENG, CHARLES WILLIAM, AND ANDREW J. MUTCHLER

Second and third supplements to Catalogue of the Coleoptera of America, north of Mexico. Mount Vernon, N.Y.: John D. Sherman, Jr., 1933. 112 p. 25 cm. Paper, \$4.00. 1638

Contents: Introduction. Second supplement, 1925-1930. Bibliography. Third supplement, 1931-32. Bibliography. Necrology. Catalogue of fossil North American Coleoptera: Second supplement, 1927-1932, by H. F. Wickham. Index.

Note: A continuation of the authors' *Catalogue of the Coleoptera of America, north of Mexico*, Mount Vernon, N.Y., 1920, to which a first supplement by the same authors appeared in 1927. In the present work are recorded the species, sub-species, and aberrations described during the period from January 1, 1925 to December 31, 1932, together with the bibliographic references which bear directly or indirectly upon the classification of Coleoptera. The bibliographies are listed in alphabetical order by author. A fourth supplement by R. E. Blackwelder is available under title *Fourth supplement (1933 to 1938 inclusive) to the Leng Catalogue of Coleoptera of America, north of Mexico*, Mount Vernon, N.Y.; John D. Sherman, Jr., 1939, 146 p., 25 cm., paper, \$6.00, which includes all new species described up to January, 1939, together with bibliographic references.

MCDUNNOUGH, JAMES HALLIDAY

Check list of the Lepidoptera of Canada and the United States of America. Los Angeles, Calif.: Southern California Academy of Sciences, 1938-39. 2 parts. 26 cm. (Southern California Academy of Sciences. Memoirs. Vol. 1, 1938; Vol. 2, no. 1, 1939) Paper, Part 1, \$4.00; Part 2, \$2.50. 1638a

Contents: Part 1, Macrolepidoptera. Part 2, Microlepidoptera.

Note: This check list of Lepidoptera is a revision of the *Check list of the Lepidoptera of boreal America*, by William Barnes and J. H. McDunnough, Decatur, Ill., 1917. It includes the names of 5,229 species of Macrolepidoptera and 4,647 species of Microlepidoptera and indexes of 98 and 59 pages respectively. Within each part the arrangement is by superfamilies, families, subfamilies, and genera. The species are numbered, the total being 9,876. The work is intended for students and collectors of butterflies.

MACY, RALPH WILLIAM, AND HAROLD H. SHEPARD

✓ **Butterflies; a handbook of the butterflies of the United States, complete for the region north of the Potomac and Ohio rivers and east of the Dakotas.** Minneapolis: The University of Minnesota Press, 1941. 247 p. illus. (part col.) 23 cm. \$3.50. 1638b

Note: This handbook keys and describes 189 species. The authors tell of ancient beliefs and curious facts about butterflies. Popular and scientific names, concise description of each species, life histories, manner of flight, records of early and late appearances, habitats, collection data, original references, and brief synonymies are included. New material on distribution and on recent publications. Simple, tested keys for accurate identification are based on easily recognized variations in color and form.

✓ **MARQUESAN INSECTS—I-III.** Honolulu, Hawaii: Bernice P. Bishop Museum, 1932-39. 3 v. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 98, 114, 142. Pacific Entomological Survey publications 1, 7, 8) Vol. I, \$2.00; Vol. II, \$2.00; Vol. III, ? 1639

Note: This series of taxonomic reports is based on material collected in 1929 and 1930. The committee administering the Survey chose the Marquesas Islands as the first region for intensive study because of the rapid changes known to be taking place in the flora and believed to be occurring in the fauna as well, and also because the biology of this isolated archipelago seemed likely to be of great interest in the study of geographical relations. The material obtained has been reported on in various publications. A note on the insect fauna of the Marquesas appeared in *Bulletin 94* of the Museum. A paper of more general scope was read before the International Congress of Entomology in Paris, in 1932. *Bulletins 139* and *159* from the Museum contain general reports discussing in detail the origin, environment, and regional relations of the known species. The three bulletins in this series, together with *Bulletin 113* on the insects of the Society Islands, include 103 papers in which the characters and taxonomic position of some 1,090 insects are discussed, 467 of them new species.

MATHESON, ROBERT

595.77
762.12 ✓ **Handbook of the mosquitoes of North America; their anatomy and biology; how they can be studied and how identified; how they carry disease and how they can be controlled.** Second edition, revised and amplified. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1944. 314 p. illus. 24 cm. \$4.00. 1639a

Contents: Part I, Mosquitoes, a comprehensive survey: Characteristics of mosquitoes. The biology of mosquitoes. Mosquitoes in relation to human welfare. The problem of mosquito reduction. How to study, collect, rear, and preserve mosquitoes. A systematic account of North American mosquitoes: The family Culicidae. The tribe Anophelini. The tribe Culicini. The tribe Megarhinini. References. Index.

Note: This second edition is a complete revision, with much new material; the first five chapters have been condensed though new data and illustrations have been included. A new chapter on the Chaoborinae has been added. In the systematic part, new keys to the genera and species have been prepared, with a number of new illustrations. The aim of the text is to give brief accounts of the biology, habits, and distribution of North American species north of Mexico. The revised bibliography lists 210 references and there are 33 plates of anatomical details.

MICHENER, CHARLES DUNCAN

566
AME **Comparative external morphology, phylogeny, and a classification of the bees (Hymenoptera).** New York: American Museum of Natural History, 1944. 169 p. illus. 27 cm. (American Museum of Natural History. Bulletin. Vol. 82, article 6) Paper, \$1.75. 1639b

Contents: Introduction. External morphology of *Anthophora edwardsii* Cresson. Comparative external morphology of the bees. Literature cited (morphology). Phylogeny of the bees. A classification of the bees. Selected references (systematics). Index of taxonomic names.

Note: This monograph is divided into four parts, the first of which includes a summary of the terminology of structures which is applicable to all bees and to many other groups of Hymenoptera. The second part is primarily a record of differences among numerous genera with certain suggestions as to how some of these differences may have come about. In the third part the characters described in previous sections are analyzed, with a discussion of the phylogenetic history of the bees. The classification, which is a by-product of this phylogeny, is presented in the final section. The bibliography, presented in two parts, contains 180 references to American and European sources.

MILLS, HARLOW BURGESS

A monograph of the Collembola of Iowa. Ames, Ia.: Collegiate Press, Inc., 1934. 143 p. illus. 23 cm. \$2.25. 1640

Contents: Collection and preservation. Morphology and terminology. Classification of Collembola. Order Collembola Lubbock, 1870. Suborder Arthropleona Börner, 1901. Suborder Symphypleona Börner, 1901. Selected bibliography. Index.

Note: This is the first inclusive work in the English language since 1903 on this group of insects. It brings the nomenclature of the group up to date and describes 1 genus, 32 species, and 3 varieties new to science.

MOULTON, DUDLEY

Thysanoptera of Fiji. Honolulu, Hawaii: Bernice P. Bishop Museum, 1944. 45 p. illus. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. XVII, no. 22, March 23, 1944) \$0.50. 1640a

Note: This report is founded principally upon collections made during the course of the Henry G. Lapham Expedition to Fiji sent out by the Bishop Museum in 1938. Some material collected later has also been employed. The report includes seven new genera (some erected to include peculiar giant thrips), one new subgenus, 31 new species, and three new varieties from Fiji, and a new species from Samoa. In addition to these new forms, 13 species and one variety previously described are recorded. This represents the first study of material from the high interior forests of Fiji and it is believed that only a fraction of the thrips to be found there are included.

NEEDHAM, JAMES GEORGE, AND OTHERS

✓ **The biology of mayflies, with a systematic account of North American species, by James G. Needham, Jay R. Traver and Yin-chi Hsu aided by specialists in certain subjects.** Ithaca, N.Y.: Comstock Publishing Company, Inc., 1935. 759 p. illus. 24 cm. \$7.50. 1640b

Contents: Part I, Mayflies in general: Introduction, the life of a mayfly, the structure of a mayfly nymph, internal anatomy, post-embryonic development, eggs and oviposition, the life cycle, taxonomic character of the adult, wings and legs, the body-wall of the thorax, the musculature of the thorax, nymphal structures and adaptations, mayfly phylogeny, casualties and enemies of mayflies, values and uses of mayflies, collecting, preserving and rearing mayflies, the classification of mayflies. Part II, North American mayflies: A systematic account of North American species in both adult and nymphal stages. Index.

Note: The names, descriptions, and known distribution of all species of the Ephemeroptera of North America, with a clear

delineation of the genera, have been brought together in this reference text. Keys and identification tables are given for each family, subfamily, and genus, and there are numerous illustrations. The volume is intended to be of use to collectors, teachers, taxonomists, anatomists, and entomologists in general.

OSBORN, HERBERT

Cicadellidae of Hawaii. Honolulu, Hawaii: Bernice P. Bishop Museum, 1935. 62 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 134) \$1.00. 1641

Contents (abridged): Introduction. Systematic arrangement. Bythoscopinae. Cicadellinae. Jassinae. Typhlocybinae. Index.

Note: This report is based on material provided by the Entomological Division of the Experiment Station of the Hawaiian Sugar Planters' Association, a series of specimens numbering nearly 3000, together with data on food plants, localities, and altitude. The author also had access to type and paratype material from the Museum. The biological problem presented by the cicadellid fauna of Hawaii is of interest because of affinities or derivation from fauna of the Asiatic or American region. It is remarkable in the proportion of species limited to the islands, and some of the species present quite striking local limitations as well.

PARK, ORLANDO

A study in neotropical Pselaphidae. Evanston, Ill.: Northwestern University, 1942. 403 p. illus. 26 cm. (Northwestern University studies in the biological sciences and medicine. No. 1) \$7.50. 1641a

Contents: General considerations and the collecting of Pselaphidae. Preparation of Pselaphidae for study. Taxonomic and morphological considerations. Key to the tribes of neotropical Pselaphidae. Subfamily Pselaphinae: Division I, Brachyscelia; tribes 1-9. Division II, Macrosclia; tribes 10-16. Subfamily Clavigerinae; tribe 17. The undescribed species of Motschulsky. Zoogeographic and statistical considerations. Abstract. Bibliography. General index. Index to plates.

Note: This systematic description and key to species attempts to coordinate for the first time and to add to the information on the pselaphid beetles which inhabit the American tropics. The work, which is a summary of data preparatory to monographic study, necessarily omits many genera insufficiently known and many type specimens as yet unexamined by the author, from whose personal collection all of the types of the new species here described are derived. Twenty-one plates of drawings by the author illustrate pselaphid anatomy and taxonomy. The present paper covers most of the accumulated information on the Pselaphidae which has been obtained during the 33 years between the generic analysis of this family given in Raffray's *Genera insectorum*, Bruxelles, 1908, and 1941.

REES, DON MERRILL

The mosquitoes of Utah. Salt Lake City, Utah: The University of Utah, 1943. 99 p. illus. 25 cm. (Bulletin of the University of Utah. Vol. 33, no. 7, March 4, 1943. Biological series. Vol. VII, no. 4) Paper, \$1.50. 1641b

Contents: Introduction. List of Utah mosquitoes. Key to genera. Key to Utah species of Aedes. Utah mosquitoes—distinguishing characters, distribution. Key to Utah species of Anopheles. Key to Utah species of Culex. Key to Utah species of Theobaldia. Biological discussion. Basis for biological work. Seasonal breeding of common species. Types of breeding habits. Origin of mosquito producing waters. Effect of atmospheric conditions on mosquitoes. Mosquito migration and dispersal. Distribution of mosquitoes by human agencies. Biological factors affecting mosquito reduction. Correlation of preceding data. References cited.

Note: This monograph includes for each species treated a brief description of the adult females, male genitalia, and larvae, together with the life histories, state distribution, relation to other species, biological importance, and related details such as seasonal prevalence, feeding habits, flight range, and time of activity. There are 52 drawings and a number of maps and photographs.

ROSS, HERBERT HOLDSWORTH

A generic classification of the nearctic sawflies (Hymenoptera, Symphyta). Urbana, Ill.: University of Illinois Press, 1937. 173 p. illus. 26 cm. (Illinois biological monographs. Vol. xv, no. 2) Paper, \$2.00. 1642

Contents: Introduction: Methods. Materials. Morphology: Head and appendages. Thorax and appendages. Abdomen and appendages. Phylogeny: The superfamilies of sawflies. Family groupings. Hypothesis of genealogy. Larval characters. Biology. Summary of phylogeny. Taxonomy: Superfamily Tenthredinoidea. Superfamily Megalodontoidea. Superfamily Siricoidea. Superfamily Cephoidea. Bibliography. Plates. Index.

Note: Classification of sawflies on the basis of the comparative morphology of the body and its appendages rather than on only those characters which may be seen without dissection. The taxonomic portion of the study is based on an examination of about 50,000 sawflies, including 90 per cent of the types of nearctic species.

RUSSELL, LOUISE MAY

A classification of the scale insect genus Asterolecanium. Washington, D.C.: Government Printing Office, 1941. 322 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 424) \$0.45. 1642a

Contents: Introduction. Economic importance. Geographical distribution. Host associations. Relationships. Generic synonymy. Generic description. Characters used in classification and their terminology. Species groups. Key to adult females. Key to larvae. Descriptions. Species unknown to the author. Literature cited. Illustrations. Index.

Note: This publication is a revisionary study of the scale insects of the genus Asterolecanium, which are of economic importance because they are enemies or potential enemies of certain plants, notably the bamboos, palms, and oaks. It provides descriptions and illustrations to permit identification of the included species and a classification of these species based primarily on a critical study of their morphology. Eighty-three new species have been recognized and are described.

RUSSELL, PAUL FARR, AND OTHERS

Keys to the anopheline mosquitoes of the world; with notes on their identification, distribution, biology, and relation to malaria. Prepared for the Preventive Medicine Division, Office of the Surgeon General, U.S. Army. Philadelphia: The American Entomological Society, The Academy of Natural Sciences, 1943. 152 p. illus. 23 cm. Paper, U.S., \$2.00; foreign countries, \$2.10. 1643

Contents: Introduction. Mosquito identification. Anopheles of Canada, United States and northern Mexico. Anophelines of Central America and the Caribbean region. Anophelines of South America. Anopheles of Europe, North Africa, and Near East. Anopheles of South and Central Africa. Anopheles of Asia, except the Philippines. Anopheles of the Philippines. Anophelines of Australian region. Important vectors of malaria. References. Index to specific and subspecific names.

Note: Undertaken to provide the United States Medical Department with information leading to the control of disease-bearing mosquitoes throughout the world wherever military personnel are stationed, this publication presents a key to the identification of various species of anopheline mosquitoes by geographical distribution. Description, distribution, biology, feeding habits, activity, and relation to malaria are given for most species. There are 102 references in the selected bibliography.

SANDHOUSE, GRACE ADELBERT

The North American bees of the genus Osmia (Hymenoptera: Apoidea). Washington, D.C.: The Entomological Society of Washington,

1939. 167 p. illus. 26 cm. (Entomological Society of Washington. Memoirs. No. 1) \$3.00. 1643a

Note: A descriptive catalogue of the genus, whose species are chiefly palearctic and nearctic and which exhibit as great a diversity in type of nests as any other genus of bees. Of approximately 280 names which have been proposed for species of *Osmia* in the nearctic region, about 120 are listed as synonyms in the present work and 30 are transferred to other genera, leaving 130 names in the genus. The collection of *Osmia* in the United States National Museum has served as a basis for this revisionary study, being supplemented by material from other institutions and private collections. Under each species following the original reference are cited only those references which contain information additional to locality records. The distribution given is only for material actually seen by the author. There are 278 figures and a general index.

SCHOOF, HERBERT FREDERICK

The genus *Conotrachelus* Dejean (Coleoptera, Curculionidae) in the north central United States. Urbana, Ill.: University of Illinois Press, 1942. 170 p. illus. 26 cm. (Illinois biological monographs. Vol. xix, no. 3) Paper, \$1.50.

1643b

Contents (abridged): Introduction. Review of literature. Materials and methods: The removal, study, and preservation of the male genitalia. Measurements. Studies of collections and types. Organization of distributional data. The morphological characters of taxonomic importance: The body regions and their appendages. Color and vestiture. Characters for sex determination. The male genitalia. Nomenclature. Classification: Keys to groups and species. Addendum: *Conotrachelus carolinensis* n. sp. Summary. Glossary. Literature cited. Plates.

Note: Keys to, and descriptions of, 28 species of *Conotrachelus* in the area studied, including five new species, with an evaluation of the taxonomic importance of various morphological structures. The description of a sixth new species, *carolinensis*, not found in the area studied, is presented as an addendum.

SMITH, CLYDE FUHRMAN

The Aphidiinae of North America (Braconidae: Hymenoptera). Columbus, O.: The Ohio State University, 1944. 154 p. illus. 23 cm. (Ohio State University. Contributions in zoology and entomology. No. 6) \$3.50. 1644

Contents: Preface. Introduction: Methods. General biology of the Aphidiinae. Taxonomic characters of the Aphidiinae. The subfamily Aphidiinae. Host index. Bibliography. Plates. Index to Aphidiinae.

Note: This treatise describes the Aphidiinae subfamily (family Braconidae, superfamily Ichneumonoidea), one of the primary parasites of the aphid. The species of Aphidiinae, of which 77 are here described, play an important economic role in reducing the aphid populations on fruit and other crops.

SNODGRASS, ROBERT EVANS

Principles of insect morphology. New York: McGraw-Hill Book Company, Inc., 1935. 667 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences, A. F. Shull, consulting editor) \$6.00. 1644a

Contents: Introduction. General organization and development. The body wall and its derivatives. Body regions, sclerites and segmentation. The segmental appendages of arthropods. The head. The head appendages. The thorax. The thoracic legs. The wings. The abdomen. The organs of digestion. The alimentary canal. The organs of distribution, conservation and elimination. The respiratory system. The nervous system. The sense organs. The internal organs of reproduction. The organs of copulation and oviposition. References. Index.

Note: A comprehensive text, primarily for college courses in the subject. The author has attempted to give in each chapter a coherent morphological view of the structure or organs under discussion and has not hesitated to use generalizations to this end. The list of references, although it is limited mainly to works cited in the text, runs to about 800 entries.

SOCIETY ISLANDS INSECTS. Honolulu, Hawaii: Bernice P. Bishop Museum, 1935. 156 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 113. Pacific Entomological Survey publication 6) \$1.00. 1645

Note: This bulletin contains 31 papers by various authors on the insects of the Society Islands and Tahiti. Information concerning the expedition and its results, part of which is here reported, may be found in the note on *Bulletin* 98.

SPOONER, CHARLES STOCKMAN

The phylogeny of the Hemiptera based on a study of the head capsule, with 24 plates. Contribution from the Entomological Laboratories of the University of Illinois no. 198. Urbana, Ill.: The University of Illinois Press, 1938. 102 p. illus. 26 cm. (Illinois biological monographs. Vol. xvi, no. 3) Paper, \$1.00. 1645a

Contents: Introduction. Acknowledgments. Materials and methods. The generalized hemipterous head. Modifications of the parts of the head in Homoptera. Phylogeny of the Homoptera. The generalized heteropterous head. Modifications of the parts of the head in Heteroptera. Phylogeny of the Heteroptera. Summary. Bibliography. Plates. Index.

Note: Because the head of the Hemiptera insects is highly modified and has a variable structure, and superficially similar parts had frequently been misinterpreted, the present study was undertaken, with the hope both of indicating some of these misinterpretations and of gaining some indication of the phylogeny of the group. Studies were made of representatives of all the North American families in which material was available, including both nymph and adult stages.

STONE, ALAN

The fruitflies of the genus *Anastrepha*. Washington, D.C.: Government Printing Office, 1942. 112 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 439) \$0.40. 1645b

Contents: Introduction. Economic importance. Food-plant list. Geographical distribution. The specific characters and their terminology. Methods. The illustrations. Species incorrectly placed in the genus. The genus *Anastrepha* Schiner. Key to species. Descriptions of species. Literature cited. Index to species.

Note: This publication gives detailed descriptions of 126 species of *Anastrepha*, of which six, including *Anastrepha ludens*, the Mexican fruitfly, are of major economic importance. The 23 plates contain 91 photographs of the wings of different species enlarged 10 diameters.

TEALE, EDWIN WAY

Grassroot jungles, a book of insects. Illustrated with one hundred and thirty photographs by the author. New York: Dodd, Mead & Company, 1937. 233 p. illus. 25 cm. \$4.00. 1645c

Contents: Exploring at home. Insect ABC's. Winged bullets—the dragonflies. The mystery of the monarch. A garden dinosaur—the praying mantis. Living pastures—the aphides. The robber fly. Polyphemus the giant. Two legs too many—the spiders. The strange life of the bumblebee. Insect Lilliput. A six-legged Rip Van Winkle. Beauty and the beast. The old man of the garden. Wisdom of the wasps. Ant lore. The first fiddler. Flying rainbows. The homeless ladybug. Night singers. How to photograph insects. Summer's end. Bibliography.

Note: Not a systematic book, but a collection of interesting essays about insects and insect life. The author's style is readable and his treatment is aimed at the nature-loving layman. The bibliography lists about 20 popular books. A special feature is the reproductions of photographs, most of them showing insects considerably enlarged from their natural size.

TUTHILL, LEONARD DALE

Descriptions and records of some Fijian Psyllidae (Homoptera). Honolulu, Hawaii: Bernice

P. Bishop Museum, 1944. 8 p. illus. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. xvii, no. 18, December 1, 1943) \$0.25.

1646

Note: This paper is based on a small group of Psyllidae collected in the Fiji Islands in 1938. Of the eleven species represented, seven are new to science and three of the remaining four have been known from Fiji previously. Three subfamilies are represented. Holotypes and allotypes are in the Bishop Museum.

USINGER, ROBERT LESLIE

The genus *Nysius* and its allies in the Hawaiian Islands (Hemiptera, Lygaeidae, Orsillini). Honolulu, Hawaii: Bernice P. Bishop Museum, 1942. 167 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 173) \$2.00. 1646a

Contents (abridged): History. Material, methods, explanation of terms. Taxonomy. Phylogeny. Distribution, geographical, zonal. Host relationships. Life history and developmental stages. Natural enemies. Economic importance. Bionomics: Characteristics of the environment, of the bugs; evolution. Bibliography. Systematic index.

Note: The Hawaiian species of the tribe Orsillini have been studied from three different points of view: (1) as the least known though commonest insects from sea level to the tops of the mountains on introduced and native plants; (2) as an array of primitive and modern forms comprising half of the known orsilline fauna of the world, and (3) as the first case of tremendous proliferation of species in insular areas which presents a possibility of experimental analysis. An attempt has been made to elucidate the general subject along these three fronts, stressing the taxonomic, phylogenetic, biological, and philosophical sides of the problem.

VAN ZWALUWENBURG, REYER HERMAN

Check list of the Elateridae of Oceania. Honolulu, Hawaii: Bernice P. Bishop Museum, 1932. 28 p. illus. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. ix, no. 23. Pacific Entomological Survey publication 3) \$0.50. 1646b

Note: This check list is based upon information collected under the auspices of the Survey and compiled by Amy Suehiro of the Museum staff regarding the insects recorded from the area bounded by Hawaii on the north, by the Bonin, Bismarck, and Trobriand islands on the west, by New Caledonia and the Tuamotus on the south, and by Easter Island and the Galapagos on the east. Records from the Kermadec Islands and from Chatham Island are included, but New Zealand is not represented. A few new locality records have been obtained from collections in the Museum.

WENZEL, RUPERT LEON

On the classification of the histerid beetles. Chicago: Chicago Natural History Museum, 1944. 104 p. illus. 24 cm. (Chicago Natural History Museum. Publication 545. Zoological series. Vol. 28, no. 2) Paper, \$1.00. 1647

Note: A systematic classification of the coleopterous family Histeridae which aims to correct certain generic assignments and subfamilial and tribal definitions of earlier writers. Types, allotypes, paratypes, description, measurements, and related data are given for each species presented, many of which are new and here described for the first time. There are nine plates of anatomical drawings.

WHEELER, WILLIAM MORTON

Check list of the ants of Oceania. Honolulu, Hawaii: Bernice P. Bishop Museum, 1935-36. 56 p. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. xi, no. 11, 1935) \$0.50. 1647a

Note: For the purposes of this check list, Oceania covers the groups of small central Pacific islands and in addition the Bismarck Archipelago, the Solomon and Santa Cruz Islands, New Caledonia, Lord Howe and Norfolk Islands and New Zealand, and in the eastern Pacific the Galapagos Archipelago, Cocos Island, and the small islands off the coast of Mexico and southern California. All the subfamilies of the Formicidae are represented in Oceania with the exception of the Dorylinae and Leptanillinae. The whole fauna comprises, so far as known, 560 forms (339 species, 108 subspecies, and 113 varieties). The list gives the complete known geographical range for each form.

WHEELER, WILLIAM MORTON

Colony-founding among ants; with an account of some primitive Australian species. Cambridge, Mass.: Harvard University Press, 1933. 179 p. illus. 20 cm. \$2.00. 1647b

Note: An unexpected and very primitive method of colony-founding behavior observed by the author among the famous bull-dog ants, while he was accompanying the Harvard Zoological Expedition in Australia leads him to undertake a general technical review of all the known methods of colony propagation among the ants and other social insects. The work also contains taxonomic data and natural history notes on a number of little-known species of bull-dog ants and certain other primitive Australian genera. Bibliography and index.

WHEELER, WILLIAM MORTON

Mosaics and other anomalies among ants. Cambridge, Mass.: Harvard University Press, 1937. 95 p. illus. 24 cm. \$2.00. 1647c

Contents: Distribution, habits, and normal castes of *Acromyrmex*. The anomalies of *Acromyrmex octospinosus*. General considerations. Taxonomic notes on *Acromyrmex octospinosus* Reich. A revision of the known non-mosaic female and worker anomalies of ants. Bibliography.

Note: This monograph, which was the author's last published work, deals with a colony of fungus-growing ants collected by Dr. N. A. Weber which contains 164 anomalous individuals, 53 of which are of unusual interest both because they are unlike any previously observed among ants or other social insects and because they provide a basis of decision between two theories of caste determination which have long divided students of ants. A number of observations on the fungus-growing habits of this colony and of other members of the Attine tribe are included, and a revision of the known non-mosaic ant anomalies is also appended. One hundred thirty-six articles and monographs are listed in the bibliography.

WHEELER, WILLIAM MORTON

Revised list of Hawaiian ants. Honolulu, Hawaii: Bernice P. Bishop Museum, 1934. 21 p. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. x, no. 21) \$0.50. 1647d

Note: The material on which this paper is based consists of the collections in the Museum, the Sugar Planters' Experiment Station, and the Federal Quarantine Station in Honolulu, together with specimens obtained by the author during a visit to the islands in 1930. This revised list comprises 35 species, showing an accession of 12 items since the publication of Culick's list in 1913. It is a meager ant fauna for an area as large as Hawaii, possessing a tropical climate, but is undoubtedly more nearly complete than the ant list of any other group of islands in the Pacific.

ZIMMERMAN, ELWOOD CURTIS

Review of the genus *Orochlesis* (Coleoptera, Curculionidae). Honolulu, Hawaii: Bernice P. Bishop Museum, 1936. 19 p. illus. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. xii, no. 1) \$0.50. 1647e

Note: This review was undertaken because no comprehensive study had been made of the genus as a whole. The study is based mainly on collections in the Museum, where most of the types of new species are stored. Two new species were described from the Koebele collection. In this list there are 16 species, six of them described as new. The genus is now known from Japan,

Formosa, the Philippines, Malay Peninsula (Penang Island), Celebes, Moluccas, islands off the coast of New Guinea, north-eastern Australia, Fiji, Samoa, and the Society Islands. Numerous species will undoubtedly be found elsewhere when more collecting is done.

Vertebrates

ADAMS, LEVERETT ALLEN

An introduction to the vertebrates. Second edition. New York: John Wiley & Sons, Inc., 1938. 479 p. illus. 23 cm. \$3.50. 1648

Contents: Part I, Introduction. Classification. Part II, Integument. Skeletal system. Muscular system. Digestive system. Circulatory system. Respiratory system. Nervous system. Sense organs. Urogenital system. Endocrine glands. Part III, Fishes. Amphibians. Reptiles. Birds. Mammals. Bibliography. Glossary. Index.

Note: A college textbook offering a comparative study of the vertebrates, providing, first, an outline of the characteristics on which the modern system of classification of chordates is based; second, a comparative analysis of anatomical systems and specialized structures; and third, a view of each of the five classes with particular reference to representatives used in the laboratory. In this edition the section on comparative anatomy has been practically rewritten.

GRINNELL, JOSEPH, AND JEAN M. LINSDALE

Vertebrate animals of Point Lobos reserve, 1934-35. Washington, D.C.: Carnegie Institution of Washington, 1936. 159 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 481) Paper, \$2.25; cloth, \$2.75. 1649

Contents (abridged): Introduction. General features of the area: topography—recent history of human use—present treatment by Division of Parks. Environmental relations of the vertebrates: climatic—weather—habitat divisions—succession—relations to culture. Zonal and faunal position of the Point Lobos reserve. Accounts of species: time in the field—amphibians and reptiles—birds—mammals. Literature cited. Protection and preservation of animal life in the reserve. Summary.

Note: This study was undertaken to define and evaluate the part taken by animal life in state parks and particularly in Point Lobos reserve. It concerns the presence there of 176 kinds of vertebrate animals—10 amphibians and reptiles, 147 birds, and 19 mammals. For each kind is described the frequency of occurrence and the relative abundance, the habitat occupied, the more appreciable relationships with the physical environment, the nature of its biotic relationships, and the annual cycle of its activity in the reserve.

NEWMAN, HORATIO HACKETT

The phylum Chordata; biology of vertebrates and their kin. A revision of Vertebrate zoology. New York: The Macmillan Company, 1939. 477 p. illus. 22 cm. \$3.75. 1650

Contents: Characteristics, content, and classification of the phylum Chordata. Principles and factors of vertebrate evolution. Primitive true chordates (Protochordata) Class I: Cephalochordata. Class II, Urochordata. The Hemichordata and the phylogeny of the chordates. The most primitive vertebrates: Monorhina (Agnatha). Introduction to the class Pisces (gnathostome fishes). Chondrichthyes (shark-like fishes). The anatomy of the dogfish (an example of a generalized vertebrate). Bony fishes (Osteichthyes). Teleost fishes (order Teleostei). The class Amphibia (their origin and early career). Living Amphibia. Anatomy of a salamander (an example of a generalized tetrapod). Class Reptilia (introduction). The fossil pedigree of the reptiles. Modern reptilian orders. Class Aves (birds). Birds of today. Embryonic development of the bird. Class Mammalia (general and historical). Monotremes and marsupials. Orders of placental mammals. The development of mammals. Index.

Note: A textbook intended for introductory college courses in comparative anatomy or vertebrate zoology in which the laboratory and lecture parts of the course are essentially independent though supplementary. The book presents the subject-matter of the lecture part of such a course together with considerable additional material for supplementary reading, and is a revision

and enlargement of the author's earlier work, *Vertebrate zoology*, New York, 1920. Brief descriptions of the salient anatomical and physiologic characteristics of the various classes, orders, sub-orders, and families are presented, with detailed descriptions and drawings of numerous type specimens.

PRATT, HENRY SHERRING

A manual of land and fresh water vertebrate animals of the United States (exclusive of birds). Second edition. With 184 illustrations and a glossary. Philadelphia: The Blakiston Company, 1935. 416 p. illus. 23 cm. \$6.00. 1651

Contents (abridged): The vertebrates. Class 1, Fishes. Class 2, Amphibians. Class 3, Reptiles. Class 5, Mammals. Bibliography. List of authors. Glossary. Index.

Note: A manual for students of zoology, students of the geographical distribution of animals, and nature students, containing descriptions of the land and fresh-water vertebrate animals (exclusive of birds) of the United States, by means of which their names and affinities can be determined. The region covered is the continental United States and southern Canada. Many photographs and line drawings illustrate the most important diagnostic features of the various groups. In the use of scientific names the system adopted by the International Commission of Nomenclature has been followed. A glossary of technical terms and a zone map of North America are also provided. The second edition contains numerous revisions of nomenclature and increases the representation of certain species, especially from the Pacific Coast region.

WALTER, HERBERT EUGENE

Biology of the vertebrates; a comparative study of man and his animal allies. Revised edition. New York: The Macmillan Company, 1939. 882 p. illus. 22 cm. \$4.00. 1653

Contents: Introduction. Kinds of vertebrates. Distribution of animals in space. Distribution of animals in time. Man in the making. Units of structure. Division of labor in tissues. Development of the individual. Biological discords. Jack of all trades—the integument. Intake apparatus. Internal transportation. The release of energy. Outgo apparatus. Preservation of species. Involuntary regulation. The skeleton. Production of motion and locomotion. The nervous system, sense organs. Bibliography.

Note: A textbook for undergraduate college courses. In this edition eighty of the illustrations are new, and there are many minor changes in the text.

Fishes

BARNHART, PERCY SPENCER

Marine fishes of southern California. Berkeley, Calif.: University of California Press, 1936. 209 p. illus. 26 cm. \$4.00. 1654

Contents: Introduction. Note on the description of fishes. Families of fishes described. Figures of fishes described. Glossary. Bibliography. Index to the common names of the fishes. Index to the scientific names of the fishes.

Note: From many papers and books, descriptions have been gathered together in one volume, making it a convenient means of identification of the fishes of this region. Three hundred seventy species, all those reported from southern California waters from Point Conception on the north to the Mexican border on the south, have been included. The book is intended for students and laymen.

BEEBE, CHARLES WILLIAM, AND JOHN TEE-VAN

Bermuda Oceanographic Expeditions, 1929-31. New York: New York Zoological Society, 1931-33. 171 p. illus. 23 cm. (Zoologica: scientific contributions of the New York Zoological Society. Vol. XIII, nos. 1-8) Paper, \$2.40. 1654a

Contents: Parts 1-2, Bermuda Oceanographic Expeditions, 1929-1930: Introduction. List of nets and data. Part 3, Bermuda Oceanographic Expeditions, 1931: Individual nets and data. Part 4, Nineteen new species and four post-larval deep-sea fish. Part 5, New Bermuda fish, including six new species and 43 species hitherto unrecorded from Bermuda. Part 6, Ontological notes on *Remora remora*. Part 7, Nomenclatural notes on the shore fishes of Bermuda. Part 8, Deep-sea isospondylous fishes, two new genera and four new species. Index.

Note: Eight short papers summarizing the results of collecting fish in the open ocean about five miles south of Bermuda, representing a total haul of 976 nets through an area of roughly 50 square miles. Parts 2 and 3 are tabulations of original data giving type of net used, depth, time, and duration of haul, direction, wind, and condition of sea. Parts 4 and 5 describe certain new species taken in the collections. All papers except 5 and 7 were written by the senior author alone.

BEEBE, CHARLES WILLIAM, AND JOHN TEE-VAN

Field book of the shore fishes of Bermuda, published under the auspices of the New York Zoological Society. 343 illustrations. New York: G. P. Putnam's Sons, 1933. 337 p. illus. (part col.). 17 cm. \$3.50. 1655

Contents (abridged): How to find your unknown fish. List of species. Lancelets. Sharks and rays. Sturgeons. Herring-like fishes. Eels. Lizardfish. Minnows. Gars and half-beaks. Flyingfish. Flounders. Squirrelfish. Pipefish and seahorses. Trumpetfish. Silversides. Mulletts. Barracudas. Mackerels. Tapiocafish. Swordfish. Dolphins. Man-of-war-fish. Jacks, bonitos. Bluefish. Cubby yew. Cardinalfish. Rockfish. Big-eyes, pempherids. Triple-tails. Snappers. Grunts. Bogas. Shads. Doctorfish. Puffers. Frogfish. Fish introduced by man. Keep to the genera, and species. Bibliography. Index.

Note: The work is intended for tourists, fishermen, and amateur naturalists. It lists and describes three hundred and thirty-five species of shore fishes. Under each species are given the popular and scientific names, field characters, color and size, diagnosis, and distribution. The specimens on which it was based were collected from the Nonsuch Island, Castle Harbor, and the reefs off Gurnet Rock during the years 1929, 1930, 1931, and 1932.

BOARDMAN, EDWARD THORPE

Field guide to lower aquarium animals. Bloomfield Hills, Mich.: Cranbrook Institute of Science, 1939. 186 p. illus. 23 cm. (Cranbrook Institute of Science. Bulletin no. 16) Paper, \$1.00; cloth, \$1.50. 1655a

Contents: Introduction. Where water animals live. Underwater life. Collecting equipment. Protozoa. Sponges. Hydraz and jellyfish. Flatworms. Roundworms. Rotifers. Moss animals. Segmented worms. Molluscs. Arthropods. Bibliography. Glossary. Index.

Note: Offered as an easy reference and guide for amateur naturalists who wish to know what lower animals can be kept in home aquaria, and for fishermen desiring a simple reference to the many creatures, especially insects, that feed on or are fed upon by fishes. Although the forms selected and illustrated are common to southern Michigan, most of them can be found anywhere east of the Rocky Mountains at latitude 40°-45° N. Names of animals have been popularized and technical terms used sparingly. Ninety-one works are cited for further study. Of a similar nature is the author's companion volume, *Guide to higher aquarium animals*, Bloomfield Hills, Mich.: Cranbrook Institute of Science, 1944, 107 p., \$0.50, in which vertebrate animals are figured and described.

BREDER, CHARLES MARCUS, JR.

A contribution to the life histories of Atlantic Ocean flying fishes. New Haven, Conn.: Bingham Oceanographic Foundation, 1938. 126 p. illus. 23 cm. (Peabody Museum of Natural History, Yale University. Bulletin of the Bingham Oceanographic Collection. Vol. 6, article 5) Paper, \$1.90. 1655b

Contents: Introduction. *Oxyporhamphus*. *Fodiator*. *Parexocoetus*. *Exocoetus*. *Cypselurus*. *Prognethys*. *Hirundichthys*. *Danich-*

thys. Discussion: Taxonomy. Phylogeny. Ontogeny and habit. Distribution. Bibliography.

Note: This study emphasizes descriptions of the young forms of the family Exocoetidae, together with a consideration of the ontogenetic changes involved and their biological bearing. Detailed data are given on the distribution of the Exocoetidae in the Caribbean Sea and Gulf Stream. The bibliography lists 179 references to pertinent literature.

DANIEL, JOHN FRANKLIN

The elasmobranch fishes. Third edition, revised. Berkeley, Calif.: University of California Press, 1934. 332 p. illus. (part col.) 26 cm. \$5.00. 1656

Contents: Introduction. External form. Integument. Endoskeleton. Musculature. Digestive tract. Respiratory tract. Circulatory system. Nervous system. Special senses. Urogenital system.

Note: The elasmobranch fishes are unsurpassed as material on which to study the fundamental plan of the vertebrate body. In addition to his own work, the author has collected and unified the work done by many workers on the various types. The combined studies are presented as a guide for undergraduate students of college grade and as a book of reference on the entire subject. A bibliography is added to each chapter.

EDDY, SAMUEL, AND THADDEUS SURBER

Northern fishes, with special reference to the upper Mississippi valley. Minneapolis: The University of Minnesota Press, 1943. 252 p. illus. (part col.) 23 cm. \$4.00. 1657

Contents: A fisherman's luck. Fish production and its management. Lake dynamics and lake improvement. Stream improvement. Improving the quality and conditions of fish populations. The structure of fishes. Classification and origin of fishes. Artificial key to families of common fishes. The cyclostomes. Family Petromyzonidae. The bony fishes. Family Polyodontidae. Family Acipenseridae. Family Lepisosteidae. Family Amiidae. Family Hiodontidae. Family Clupeidae. Family Osmeridae. Family Coregonidae. Family Salmonidae. Family Catostomidae. Family Cyprinidae. Family Ameiuridae. Family Umbridae. Family Esocidae. Family Anguillidae. Family Cyprinodontidae. Family Percopsidae. Family Aphredoderidae. Family Serranidae. Family Percidae. Family Centrarchidae. Family Atherinidae. Family Sciaenidae. Family Cottidae. Family Gasterosteidae. Family Gadidae. Bibliography. Index.

Note: This authoritative study of more than 150 fresh-water fishes characteristic of the upper Mississippi valley is complete for Minnesota but equally useful in Wisconsin, Michigan, and northern Iowa and generally descriptive of common species in the north central United States and adjacent Canada. All native and exotic species in the region are keyed and described in detail—their environment, their food, and their habits.

EIGENMANN, CARL H., AND WILLIAM RAY ALLEN

Fishes of western South America. I. The intercordilleran and Amazonian lowlands of Peru. II. The high pampas of Peru, Bolivia, and northern Chile. With a revision of the Peruvian Gymnotidae and of the genus *Orestias*. Lexington, Ky.: The University of Kentucky, 1942. 494 p. illus. 32 cm. (Celebrating the seventy-fifth anniversary of the University of Kentucky. Published under a grant from the Margaret Voorhies Haggin Trust established in memory of her husband James Ben Ali Haggin) \$5.00. 1657a

Contents: Introduction. Narrative of the expeditions. History of ichthyological exploration in Peru. The inland fisheries. Methods of fishing. South American fish-lore. Distribution of the fishes: Geological basis. Geographic regions. Faunal lists of principal river systems. Distribution tables. Discussion. Ichthyological gazetteer. Annotated list of the species: A review of the literature and lore of the carinduru. A review of the literature and lore

of the piranhas. A revision of the Peruvian Gymnotidae. An account of the paiche, Arapaima. Revision of the genus *Orestias*. Mimicry. Bibliography. Plates. Index.

Note: This work partly reports results of the Irwin Expedition of Indiana University in collaboration with the University of Illinois, 1918-1919, dealing with the fishes of western South America, and partly the results of William Ray Allen's expedition in 1920 as traveling fellow of Indiana University on the eastern slopes of the Andes to the Amazon.

FOWLER, HENRY WEED

The fishes of the George Vanderbilt South Pacific Expedition, 1937. Philadelphia: The Academy of Natural Sciences of Philadelphia, 1938. 349 p. illus. 27 cm. (The Academy of Natural Sciences of Philadelphia monographs. No. 2, forming part III of the Zoological results of the George Vanderbilt South Pacific Expedition, 1937) Paper, \$3.50. 1658

Contents: Introduction. Itinerary: Balboa, Canal Zone. Pearl Islands, Panama, Malpelo Island, Colombia. Galapagos Archipelago. Marquesas Islands. Tuamotus. Society Islands. Line Islands. Hawaiian Islands. Regional discussion of species. Summary. Index.

Note: A report on the collection of specimens obtained from the Vanderbilt expedition in the tropical eastern and southern Pacific seas. About 10,000 enumerated specimens representing 210 genera and 434 species are described. The work presents a systematic annotated classification arranged by locality, including detailed anatomical descriptions and measurements. There are 12 plates of line drawings and an extensive index.

FOWLER, HENRY WEED

The fishes of Oceania—supplement 2. Honolulu, Hawaii: Bernice P. Bishop Museum, 1929-34. 83 p. 23 cm. (Bernice P. Bishop Museum. Memoirs. Vol. 11, no. 6, 1934) \$2.00. 1658a

Note: The author's original monograph was published in 1928 as Volume 10 of the *Memoirs*. In this work he reported the results of an examination of the fishes stored in the Bishop Museum, some 14,000 specimens including the large Hawaiian collections. He studied, in addition, collections in the Museum of Comparative Zoology at Harvard University and in the National Museum, as well as several rare or unusual species in the Academy of Natural Sciences of Philadelphia. In 1931 a supplement to this work was published as Number 5 of Volume 11 of the *Memoirs*, and in it the author reported on additional materials including a small collection of accessions in Bishop Museum, other specimens, and records. Supplement 2 gives chiefly distributional references that had appeared since the publication of the original monograph. A catalogue from the Australian Museum giving more than a thousand determinations of the fishes from islands in Oceania furnished important data, and a large number of species which had come to light since the appearance of the first supplement were also recorded.

FOWLER, HENRY WEED

The marine fishes of West Africa, based on the collection of The American Museum Congo Expedition, 1909-1915. New York: American Museum of Natural History, 1936. 2 v. illus. 24 cm. (American Museum of Natural History. Bulletin. Vol. LXX, parts 1-2) Paper, \$12.00. 1658b

Contents (abridged): Part I, Branchiostomidae to Polynemidae: Introduction. Explanation of external characters. Bibliography. Descriptive account of classes, families, genera, and species. Part II: Scombridae to Aceratiidae. Appendix. Bibliography to appendix. Addenda. Index.

Note: A comprehensive, descriptive account of the fishlike vertebrates known from the coast of western tropical Africa, including also the outlying islands of the Madeiras, Canaries, and Cape Verde groups, the Azores, Ascension Island, and St. Helena. The major part of the work is devoted to the descriptions, in which the generally accepted technical name is given first, followed by that of the original describer. The synonymy consists of the original reference and only such others as are embraced

in the region under discussion. The range and remarks on the materials are also given, but where no materials are available, the descriptions are quoted from other authors. Five hundred sixty-seven outline drawings by the author accompany the descriptions. There is a detailed index of 120 pages and a bibliography listing 170 references to the world literature of the subject.

GREGORY, WILLIAM KING

Fish skulls: a study of the evolution of natural mechanisms. Philadelphia: The American Philosophical Society, 1933. 407 p. illus. 30 cm. (American Philosophical Society. Transactions. New Series, vol. 23, article II) \$3.00. 1658c

Contents (abridged): The beginnings of the fish skull. Classification and nomenclature of skull parts. Evolution of particular skull types. Isospondyli (primitive teleosts). Ostariophysi. Heteromi. Apodes. Mesichthyes (intermediate teleosts). Acanthopterygii (spiny-finned teleosts). Tentative phylogeny of the principal skull types. The fish skull as a natural mechanism. Discussion: The fish skull as a document of evolution. Summary: The problem of differential growth and evolution in fish skulls. Bibliography. Index.

Note: In the author's opinion, analysis has outrun synthesis in the study of ichthyology, since even the great monographs have been concerned almost exclusively with the routine discrimination of families, genera, species, and subspecies, and with the construction of artificial keys. It is his hope that the unnecessary separation of taxonomy from both phylogeny and the study of nature's mechanisms may be completely abolished, and in this monograph he has given a review of the field from the point of view of relationships, with particular emphasis on the problems of evolution. The paper is profusely illustrated. The specimens studied and portrayed are for the most part in the American Museum of Natural History in New York, but some were put at the author's disposal in other museums.

HERRE, ALBERT WILLIAM CHRISTIAN THEODORE

The fishes of the Crane Pacific expedition. Chicago: Chicago Natural History Museum, 1936. 473 p. illus. 24 cm. (Chicago Natural History Museum. Publication 353. Zoological series. Vol. XXI) Paper, \$3.50. 1658d

Contents: Introduction. New fishes. List of species by localities. Fishes collected from Cocos Island to the Solomon Islands, inclusive. Fishes from Sepik River, New Guinea. Index.

Note: An illustrated descriptive catalogue of the specimens collected by the expedition during 1928-1929. Five hundred eighty-five species of fish are listed, as follows: Caicos Passage, West Indies, 1; Gatun Lake, Panama, 13; Pacific Ocean, 541; Sepik River, New Guinea, 30. In the Pacific, species were collected at each of the following islands or groups of islands: Cocos, Galapagos, Marquesas, Tuamotu, Tahiti, Moorea, Boro Boro, Fiji, New Hebrides, and Solomon Islands. Many forms not previously described were collected and listed but not fully described in the present report. No attempt has been made to give the complete synonymy of the fishes listed, but enough has been given to indicate their position. Fifty drawings are included.

HILDEBRAND, SAMUEL FREDERICK

A new catalogue of the fresh-water fishes of Panama. Chicago: Chicago Natural History Museum, 1938. 145 p. illus. 24 cm. (Chicago Natural History Museum. Publication 425. Zoological series. Vol. XXII, no. 4) Paper, \$1.50. 1658e

Contents: Introduction. Notes on the origin and distribution of Panama fishes. Introduction of fishes. New and abandoned localities. Acknowledgments. New species described. Catalogue of species. References.

Note: A paper embodying the results of a study based mainly on specimens and data collected by the author during 1935-37 and supplemented by information gained from the examination of small collections made by others. Only those species which live more or less constantly in fresh water are included. Wherever recently proposed changes in nomenclature of families and genera have not been followed the reasons are stated. A total of 127 species are described. There is a bibliography of 38 papers and articles.

HILDEBRAND, SAMUEL FREDERICK

A review of the American anchovies (family Engraulidae). New Haven, Conn.: Bingham Oceanographic Laboratory, 1943. 165 p. illus. 23 cm. (Peabody Museum of Natural History, Yale University. Bulletin of the Bingham Oceanographic Collection. Vol. 8, article 2) Paper, \$2.50. 1658f

Contents: Abstract. Introduction: Economic importance. Distribution of species: general comments, table of distribution by geographical regions. New species and subspecies described. Explanation of enumerations, proportions and synonymy. Acknowledgments. Family Engraulidae: Genus Engraulis. Genus Anchovia. Genus Anchoa. Genus Anchoviella. Genus Pterengraulis. Genus Lycengraulis. Genus Cetengraulis. Bibliography.

Note: Descriptions and keys for 78 species and subspecies, of which 16 species and 2 subspecies are new. Illustrations are included for 72 species. As the treatment of material is taxonomic only, no attempt has been made to cite all the references to any one species. The literature cited includes 105 books and papers.

HUBBS, CARL LEAVITT, AND KARL F. LAGLER

Guide to the fishes of the Great Lakes and tributary waters. With illustrations mostly from original photographs by Frank N. Blanchard. Bloomfield Hills, Mich.: Cranbrook Institute of Science, 1941. 100 p. illus. 23 cm. (Cranbrook Institute of Science. Bulletin no. 18) Paper, \$1.00. 1658g

Contents: Introduction. Methods of counting and measuring. Keys to the families. Keys and distributional synopses: Petromyzonidae. Polyodontidae. Acipenseridae. Lepisosteidae. Amiidae. Hiodontidae. Clupeidae. Osmeridae. Coregonidae. Thymallidae. Salmonidae. Catostomidae. Cyprinidae. Ameiuridae. Umbridae. Esocidae. Anguillidae. Cyprinodontidae. Percopsidae. Aphredoderidae. Serranidae. Percidae. Centrarchidae. Atherinidae. Sciaenidae. Cottidae. Gasterosteidae. Gadidae. List of references. Index.

Note: One hundred thirty-two line drawings and photographs, in addition to detailed descriptive keys, provide a basis for learning salient characters of fishes and also for training the reader in the methods currently used for their classification. The aim of the work is to present a guide to the identification, range, and ecology of the fishes of the Great Lakes basin for both amateur and professional zoologists.

HUBBS, CARL LEAVITT, AND REEVE M. BAILEY

A revision of the black basses (Micropterus and Huro) with descriptions of four new forms. Ann Arbor, Mich.: University of Michigan Press, 1940. 52 p. illus. 25 cm. (University of Michigan. Museum of Zoology. Miscellaneous publications. No. 48) Paper, \$0.75. 1659

Contents: Introduction. Key to the forms of Micropterus and Huro. Genus Micropterus Lacépède. Genus Huro Cuvier. Conclusions of general systematic interest. Literature cited.

Note: This revision of the black basses is based on a critical examination of the extensive material deposited in nine museums in the United States. In the description of each new form, the measurements and counts of the holotype are given. The bibliography lists 54 works published between 1815 and 1939.

LONGLEY, WILLIAM HARDING, AND SAMUEL F. HILDEBRAND

Systematic catalogue of the fishes of Tortugas, Florida; with observations on color, habits, and local distribution. Edited and completed by Samuel F. Hildebrand. Washington, D.C.: Carnegie Institution of Washington, 1941. 331 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 535. Papers from Tortu-

gas Laboratory. Vol. xxxiv) Paper, \$2.50; cloth, \$3.50. 1660

Contents (abridged): The Tortugas islands. New genera and species. Bibliography of publications by William H. Longley based on his studies at Tortugas. Systematic catalogue. Index.

Note: A classification of the various kinds of fishes studied at Tortugas over a period of twenty-five years. Measurements, habitat, food, and in some cases references to literature are included. There are 34 pages of photographs.

NATIONAL GEOGRAPHIC SOCIETY

The book of fishes. Revised and enlarged edition, presenting the better known species of food and game fishes of the coastal and inland waters of the United States. Edited by John Oliver La Gorce. With 443 color portraits, 102 biographies, and 162 photographs. Washington, D.C.: National Geographic Society, 1939. 366 p. illus. (part col.) 26 cm. \$3.50. 1662

Contents: Fishes and fisheries of our eastern seaboard, by John Oliver La Gorce. Our heritage of the fresh waters, by Charles Haskins Townsend. Some curious inhabitants of the Gulf Stream, by John T. Nichols. Devilfishing in the Gulf Stream, by John Oliver La Gorce. Certain citizens of the warm seas, by Louis L. Mowbray. Treasures of the Pacific, by Leonard P. Schultz. Fishing in Pacific Coast streams, by Leonard P. Schultz. Sea creatures of our Atlantic shores, by Roy Waldo Miner. The lordly tarpon, by Van Campen Heilner. Market fish have many names, by Russell Maloney. "Compleat Angler" fishes for fossils, by Imogene Powell. Index.

Note: This volume is based on articles which have appeared from time to time in the *National geographic magazine*, the page format of which is repeated in the present work. A portion of the text of the separate articles is included to furnish narration and description. The various species described are arranged in a logical order, according to subject matter and areas in which the various species are found, but not in the systematic order of classification used by ichthyologists. There are 105 pages of full-color plates showing 231 species of fish and other forms of marine life, and 162 black-and-white photographs. The scope covers both salt- and fresh-water fishes of North American inland and coastal waters.

NICHOLS, JOHN TREADWELL

The fresh-water fishes of China. With 143 figures in the text, 10 colored plates, and 1 map. Ruth Tyler, editor. New York: The American Museum of Natural History, 1943. 322 p. illus. (part col.) 27 cm. (Central Asiatic expeditions. Natural history of Central Asia. Vol. ix) \$10.00. 1663

Contents (abridged): Introduction. Systematic account of the fresh-water fishes. Bibliography. Index.

Note: Description of the various known genera and species of the fresh-water fishes of China proper. The information is based upon the collection in the American Museum of Natural History. No attempt is made to cover marine species or brackish-water species with marine affinities.

NICHOLS, JOHN TREADWELL

Representative North American fresh-water fishes. Illustrated by Andrew R. Janson. New York: The Macmillan Company, 1942. 128 p. illus. (part col.) 10 cm. \$1.25. 1663a

Note: This pocket guide contains illustrations in black-and-white and in color of 60 representative North American fresh-water fishes, each accompanied by a page of descriptive text written mainly for the angler or amateur naturalist rather than the student of ichthyology. Such questions as the names of a fish's fins, the difference between pike and muskallunge, nesting habits of the stickleback, migration, identifying characters, and adaptability are discussed briefly. Important facts about the place of certain fish in evolutionary development, their ability to see and hear, and similar data appear in the notes. There is a brief index of subjects.

PEARSON, JOHN CLEARY

The life history of the striped bass, or rockfish, *Roccus saxatilis* (Walbaum). Washington, D.C.: Government Printing Office, 1938. 26 p. illus. 27 p. (United States. Bureau of Fisheries. Bulletin no. 28) Paper, \$0.10. 1663b

Contents: Introduction. Distribution. Abundance. Spawning grounds. Spawning season. Size and age at maturity. Eggs and young. Growth. Food habits. Movements. Fishery. Summary. Bibliography.

Note: The purpose of this bulletin is to review scattered information on the life history of the striped bass and to present data collected by the author during the course of a study of the spawning habits and migrations of the fish in Chesapeake Bay during 1930-31 and in the Roanoke river during May, 1937.

PIETSCHMANN, VICTOR

Hawaiian shore fishes. Honolulu, Hawaii: Bernice P. Bishop Museum, 1938. 55 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 156) \$2.00. 1663c

Contents: Introduction. Descriptions of species. Literature cited. Index.

Note: This study is based on material collected in 1927-28 in the waters off many of the Hawaiian islands including uninhabited coral islands and atolls. The citation of many new localities for species found hitherto only on some, or one, of the islands shows that the fish fauna of these islands is uniform. The material collected consisted of adult specimens, young stages, and larval forms. The young stages are included in the present study, but the larval forms will be treated in another paper.

SCHRENKEISEN, RAYMOND MARTIN

Field book of fresh-water fishes of North America north of Mexico. Edited by J. T. Nichols and F. R. LaMonte. Color plate by Arthur Jansson. New York: G. P. Putnam's Sons, 1938. 312 p. illus. (part col.) 17 cm. \$3.50. 1664

Contents: Borers. Lampreys. Sting rays. Sturgeons. Paddlefishes. Gar pikes. Bowfins. Tarpons. Mooneyes. Herrings. Gizzard shads. Anchovies. Salmon and trouts. Whitefishes. Graylings. Smelts. Eels. Characins. Suckers. Carps and minnows. Catfishes. Alaska blackfish. Pikes. Mud minnows. Tooth-carps, killifishes, and top minnows. Cave fishes. Needlefishes. Codfishes. Trout perches. Pirate perches. Soles. Sticklebacks. Silversides. Mulletts. Perches. Darters. Sunfishes and black basses. Pigmy sunfishes. White basses. Croakers. Sculpins. Surf-fishes. Gobies. Glossary of technical terms. Bibliography. Index.

Note: In this handbook for amateur naturalists and anglers scientific name, common names, description, habits, distribution, and related forms are given for each fish mentioned. Also, there are reproductions of line drawings of many of the species. A short glossary and a brief bibliography are included.

SCHROEDER, WILLIAM CHARLES

Migrations and other phases in the life history of the cod off southern New England. Washington, D.C.: Government Printing Office, 1930. 136 p. illus. 28 cm. (United States. Bureau of Fisheries. Document no. 1081) \$0.45. 1664a

Contents: Introduction. Historical: Cod migrations in European waters. Review of cod tagging off the New England coast. Definitions of terms used. Methods. Tabulation of the fish tagged. Significance of a recapture record. Results: Migrations of cod between Nantucket Shoals and North Carolina. Migration of cod to the north and east of Nantucket Shoals. Cod which gave no evidence of migrating. Possible causes for the migrations made by southern New England cod. Size of the cod population on Nantucket Shoals. Origin of Nantucket Shoals cod. Age and rate of growth of cod, particularly those on Nantucket Shoals. Résumé of conclusions. Tabulation of recaptures. Bibliography.

Note: The investigations reported in this document were undertaken to study the cod's life history not only as a matter

of biological interest, but also in order that if a decided decline in the abundance of the cod should ever occur the fishing industry would be able to adjust itself with as full a knowledge as possible of the fish's habits, especially of its migrations, duration of life, rate of growth, and size at different ages.

SHELDEN, FREDERICK FEY

Osteology, myology, and probable evolution of the nematognath pelvic girdle. New York: New York Academy of Sciences, 1937. 96 p. illus. 23 cm. (New York Academy of Sciences. Annals. Vol. xxxvii, p. 1-96) Paper, \$1.00. 1664c

Contents: Introduction. Historical review of the literature. Materials and methods. Osteology. Myology. Correlation of form and function. Evolution. Summary. Questions raised during the investigation. Bibliography. Index.

Note: The purpose of the investigation reported in this paper was the solution of three problems: What are the morphological characteristics of the bones and muscles in the pelvic region of the nematognath fishes or catfish? What is the most probable evolution of the pelvis within this group? Can the variety of uses to which these fishes put their pelvic fins be explained upon the basis of anatomical variations? Twelve species of nematognaths, representing eight families, were investigated in detail.

Reptiles and Amphibia

BABCOCK, HAROLD LESTER

Field guide to New England turtles. With nine plates. Boston, Mass.: Boston Society of Natural History, 1938. 56 p. illus. (part col.) 20 cm. (New England Museum of Natural History. Natural history guides. No. 2) Paper, \$1.00. 1664d

Contents: Introduction. Key for identification of New England turtles. *Sternotherus odoratus*. *Kinosternon subrubrum subrubrum*. *Chelydra serpentina*. *Clemmys guttata*. *Clemmys insculpta*. *Clemmys muhlenbergii*. *Emys blandingii*. *Terrapene carolina carolina*. *Malaclemys centrata concentrica*. *Graptemys geographica*. *Chrysemys picta picta*. *Pseudemys rubriventris bangsi*. *Chelonia mydas*. *Eretmochelys imbricata*. *Caretta caretta*. *Caretta kempii*. *Dermochelys coriacea*. *Amyda spinifera*. Bibliography.

Note: This handbook describes the 18 species of turtles found in the six northeastern United States and their adjacent waters. Internal and skeletal characters have not been taken up, emphasis being laid chiefly on external distinctions which would be of aid in the field. The publication includes a colored picture of each of the species and a diagram showing actual size of New England turtles' eggs.

BARBOUR, THOMAS, AND A. F. CARR, JR.

Antillean terrapins. Cambridge, Mass., 1940. 35 p. illus. (part col.) 31 cm. (Harvard College. Museum of Comparative Zoology. Memoirs. Vol. LIV, no. 5) \$8.00. 1665

Note: This paper presents a study of a large collection of terrapins from the various islands of the West Indies. Most of the material was collected by Dr. Barbour; some specimens and photographs of others were loaned for the study. The authors disclaim any notion that they have said "the last word" concerning the systematic status of the various West Indian terrapins. In considering controversial matters they state that material from too many areas is lacking for them to be able to reach decisions. Nevertheless they believe that inasmuch as they have been able to see more material than had ever been gathered together before, their conclusions are not improbably essentially correct as far as they go. The article is well illustrated, with line drawings in the text, and nine plates, mostly in color, accompanying it.

BENEDICT, FRANCIS GANO

The physiology of large reptiles, with special reference to the heat production of snakes, tor-

toises, lizards and alligators. Washington, D.C.: Carnegie Institution of Washington, 1932. 539 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 425) Paper, \$4.00; cloth, \$5.00. 1666

Contents (abridged): Physiology of large snakes: Respiration rate. Body temperature. Water-vapor output. Insensible perspiration. Body measurements. Gaseous metabolism and energy transformations while fasting and during digestion. Gaseous metabolism and energy transformations of large alligators and large lizards. Physiology of large tortoises. General considerations on metabolism of large cold-blooded animals with that of warm-blooded animals. Character of katabolism. Water metabolism. Direct calorimetry. Comparison of standard metabolism of various species of cold-blooded animals. Rate of metabolic reaction to changes in environmental or body temperature. Surface-area law. Comparison of metabolism of cold-blooded animals with that of warm-blooded animals. General conclusions regarding comparisons between cold-blooded and warm-blooded animals. Possible factors explaining metabolism differences. Author and subject indexes.

Note: A study of the physiology of the large poikilotherms with emphasis on the gaseous metabolism, digestion, and heat production of large snakes such as boa constrictors, pythons, and rattlesnakes, including a comparison of snakes with other cold-blooded animals. Tortoises, lizards, and alligators are also studied from the aspect of their metabolism.

BISHOP, SHERMAN CHAUNCEY

Handbook of salamanders; the salamanders of the United States, of Canada, and of Lower California. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1943. 555 p. illus. (part col.) 24 cm. (Handbooks of American natural history, edited by A. H. Wright. Vol. III) \$5.00. 1666a

Contents: Part I, Introduction: Relationships, general habits, where to look for salamanders, equipment for collecting, how to preserve salamanders, additions to the checklist, on the use of the keys, the maps and their use. Part II, Accounts of species: Key to families, family Proteidae, family Amphiumidae, family Cryptobranchidae, family Salamandridae, family Ambystomidae, family Plethodontidae, family Sirenidae. Bibliography. Index.

Note: In this guide to the study of salamanders, a general discussion of the group is followed by accounts of each of the species found in the United States, Canada, and Lower California. These accounts, each of which includes a plate, contain descriptions, life histories, and notes on distribution. Among the 200 illustrations in this book are numerous maps along with the keys to the species and subspecies, designed to aid the student or collector.

BLANCHARD, FRANK NELSON

The ring-neck snakes, genus *Diadophis*. Chicago: The Academy, 1942. 144 p. illus. 24 cm. (Chicago Academy of Sciences. Bulletin. Vol. 7, no. 1) Paper, \$1.25. 1666b

Contents: Foreword, by H. K. Gloyd. Description of the genus *Diadophis*. Key to the species and subspecies. Abbreviations used with reference to museum specimens. The *Amabilis* group. The Mexican ring-snake, *Diadophis dugesii*. The *Regalis* group. The *Punctatus* group. General summary. Literature cited in the text. Index.

Note: A descriptive monograph giving structural and anatomical details, habitat and habits, range, variation and affinities, and related data for all species or type specimens examined by the author. The bibliography lists 147 papers and monographs published between 1842 and 1942.

BRECKENRIDGE, WALTER JOHN

Reptiles and amphibians of Minnesota. Minneapolis: University of Minnesota Press, 1944. 202 p. illus. 23 cm. \$2.50. 1666c

Contents: Introduction: History of Minnesota herpetology. Tales about reptiles and amphibians. The distribution of amphibians and reptiles in Minnesota. Field methods. Care of reptiles and amphibians in captivity. Venomous snake bites and their treatment. Preservation of specimens. Classification. Use of keys. Keys for use with Minnesota amphibians and reptiles. Hypo-

thetical list. Amphibians and reptiles of Minnesota: Amphibians: Salamanders. Toads and frogs: Toads. Tree frogs. Frogs. Reptiles: Lizards. Snakes. Turtles. Glossary. Bibliography. Index.

Note: An illustrated manual designed primarily for teachers and amateur naturalists. Typical information for each species: popular and scientific names, description, range, habits, habitat, food, breeding habits, and selected references to literature. Maps show distribution and range of the various species.

CAHN, ALVIN ROBERT

The turtles of Illinois; with 31 plates, 20 maps, and 15 text-figures. Urbana, Ill.: University of Illinois Press, 1937. 218 p. illus. 26 cm. (Illinois biological monographs. Vol. XVI, nos. 1-2) Paper, \$3.00. 1667

Contents: Illinois topography and hydrography. Historical review. Key to the families of Illinois turtles: Chelydridae. Kinosternidae. Testudinidae. Trionychidae. Family Chelydridae: Genus *Macrochelys*. Genus *Chelydra*. Family Kinosternidae: Genus *Sternotherus*. Genus *Kinosternon*. Family Testudinidae: Genus *Clemmys*. Genus *Emys*. Genus *Terrapene*. Genus *Graptemys*. Genus *Chrysemys*. Genus *Pseudemys*. Family Trionychidae: Genus *Amyda*. Hypothetical list. Bibliography. Glossary.

Note: Detailed descriptions of the adult and young, eggs, habits, economic importance, food habits, sex differentiation, and parasites. The identification keys and photographs are designed to be intelligible to readers who are not professional herpetologists.

CARR, ARCHIE FAIRLY, JR.

A contribution to the herpetology of Florida. Gainesville, Fla.: The University of Florida, 1940. 118 p. 25 cm. (University of Florida publication. Biological science series. Vol. III, No. 1) Paper, \$1.35 plus \$0.15 postage. 1668

Contents: Introduction. Derivation of the fauna. Habitat distribution. Keys. Annotated list. Bibliography. Index.

Note: A study of the reptiles and amphibians of Florida based upon six years of field work throughout the state, the collecting of some 14,000 specimens with detailed ecological data, and the examination of 25,000 additional specimens in collections of various institutions. The location in these collections of certain specimens is indicated in the text. Each species is described, with reference to Florida range, habitat, abundance, and habits. A seven-page bibliography lists other literature on the subject.

CONANT, ROGER

The reptiles of Ohio. Notre Dame, Ind.: The University of Notre Dame, 1938. 200 p. illus. 23 cm. \$2.00. 1668a

Contents (abridged): Introduction. Collections examined. Systematic list of the reptiles of Ohio. Doubtful records. Physiography and geography of Ohio. Key to the reptiles. Discussion of species. Glossary. Bibliography. First aid in case of snake bite. Suggestions for collecting. Index.

Note: A systematic description of the species of snakes, lizards, turtles, and other reptiles found in the state of Ohio, written for the amateur and the professional zoologist and illustrated with 26 plates of photographs. A bibliography of 113 references, a short glossary of technical terms, and certain hints on field collecting are included.

CUNNINGHAM, BERT

Axial bifurcation in serpents; an historical survey of serpent monsters having part of the axial skeleton duplicated. Durham, N.C.: Duke University Press, 1937. 117 p. illus. 23 cm. (Duke University publications) \$2.50. 1669

Contents: Foreword, by Raymond L. Ditmars. Introduction. Types of axial duplication. Description of specimens according to type: indeterminate specimens, determinate specimens (cephalia dichotomy, anterior dichotomy, posterior dichotomy, amphidichotomy). General discussion: completeness of the study, rarity of axial duplication in serpents, geographical distribution of specimens, causes of duplicate monsters. Bibliography. Index.

Note: This book presents a compilation of all available data

on two-headed, two-tailed, and Siamese twin snakes. It contains not only the names and descriptions of the snakes taken from the sources, but also any published figures which accompanied the original description. The 134 illustrations include photographs of the external appearance and X-ray photographs of the bony structures of specimens previously described without figures. A considerable number of the 200 specimens described are here described and figured for the first time. The snakes are grouped according to the kind and degree of duplication found in the skull and vertebral column, and are then discussed in chronological order. The data available on geographical distribution have been collected in one chapter; and another chapter is given over to a discussion of probable causal factors.

DITMARS, RAYMOND LEE

A field book of North American snakes. New York: Doubleday, Doran and Company, Inc., 1939. 305 p. illus. (part col.) 21 cm. \$3.50.

1669a

Contents: Part I, The snakes of North America: A reptile survey of North America. Habits of North American snakes. How to identify snakes. Part II, The snakes of northeastern North America: Key to the snakes of northeastern North America. The northeastern nonpoisonous snakes. The northeastern poisonous snakes. Part III, The snakes of southeastern North America: Key to the snakes of southeastern North America. The southeastern nonpoisonous snakes. The southeastern poisonous snakes. Part IV, The snakes of western North America: Key to the snakes of western North America. The mildly poisonous rear-fanged snakes. The poisonous snakes of western North America. Part V: Treatment of snake bites. Classified list of North American snakes. Bibliography. Index.

Note: An introduction to the field study of North American snakes, mainly those of the United States, with emphasis on how to distinguish between harmful and harmless reptiles. Description, size, form, pattern, scalation, coloring, varieties, range, nomenclature, and habits are given for each species treated. The work provides an introduction to the larger and more formal books about North American reptiles and is intended for the layman rather than the specialist. Forty-eight plates of photographs, a colored frontispiece, and a short bibliography are included.

DITMARS, RAYMOND LEE

The reptiles of North America; a review of the crocodilians, lizards, snakes, turtles and tortoises inhabiting the United States and northern Mexico. Eight plates in color and more than four hundred photographs from life. Garden City, N.Y.: Doubleday, Doran & Company, Inc., 1936. 476 p. illus. (part col.) 26 cm. \$6.75.

1669b

Contents (abridged): Part I, The crocodilians. Part II, The lizards: Outline of the lizards and classification. The geckos. The American chameleons. The iguanas. The chuckawallas. The spotted lizards. The swifts. The horned lizards. The plated lizards. The beaded lizards. Part III, The snakes: The worm snakes and dwarf boas. The striped snakes. The water snakes. The small swamp snakes and brown snakes. The racers. The flat-nosed snakes. The king snakes. The sharp-nosed snakes. The hog-nosed snakes. The rear-fanged snakes. The elapine poisonous snakes. The marine snakes. The crotaline snakes. The moccasins. The rattlesnakes. Part IV, The turtles and tortoises: Classification. The sea turtles. The snapping turtles. The musk and mud turtles. The large terrapins. The smaller terrapins. The box turtles. The tortoise. The soft-shelled turtles. Bibliography. Index.

Note: While this work is scientifically accurate throughout, the emphasis has been upon simplifying the identification of the North American reptiles, thus assisting the beginner in herpetology and the general reader seeking scattered points of information about reptile life. The descriptions avoid complicated references to structure, since the author has depended upon the numerous excellent color and black-and-white photographs to cover most descriptive details. Synonymy is excluded, and although genera and species names of approved scientific standing are given, a systematic classification is omitted. The notes on habits, particularly those given for the snakes, are of considerable interest and represent a summary of the author's long experience with reptiles. The photographs contribute largely to the value of the work. Nineteen titles are listed in the bibliography. The present volume represents a revision of the author's *The reptile book*, New York, 1930.

DITMARS, RAYMOND LEE

Snakes of the world. With illustrations from life. New York: The Macmillan Company, 1931. 207 p. illus. 27 cm. \$2.39.

1669c

Contents: The serpent's world. The scope of the clan. Distribution of snakes. General habits. General classification. The giant serpents. The New World harmless snakes. The Old World harmless snakes. The rear-fanged snakes. Poisonous snakes of North America. Poisonous snakes of Central and South America. Poisonous snakes of Europe and Asia. Poisonous snakes of Africa. Poisonous snakes of Australia. Index.

Note: The arrangement of the poisonous snakes of the world in zoogeographical chapters gives this account particular significance for prospectors, exploring scientists, and sportsmen. The emphasis is upon developing a quick means of distinguishing the poisonous snakes through coloration, scalation, habits, and other characteristics. The author has also included numerous other details and anecdotes from his long experience in collecting and handling snakes which make interesting reading for the amateur naturalist and layman. No attempt is made at systematic classification, but scientific names of families, subfamilies, genera, and species are given. An important feature of the work is the excellent collection of 150 photographs of snakes arranged in order of non-venomous, mildly poisonous, and dangerously poisonous varieties.

FITCH, HENRY SHELDON

A biogeographical study of the ordinoides artenkreis of garter snakes (genus *Thamnophis*). Berkeley, Calif.: University of California Press, 1940. 149 p. illus. 27 cm. (University of California publications in zoology. Vol. 44, no. 1, p. 1-150) Paper, \$1.50.

1669d

Contents: Introduction. Acknowledgments. Materials and plan of presentation. Use of the trinomial. Characters used in classification. *Thamnophis ordinoides vagrans*. *Thamnophis ordinoides biscutatus*. *Thamnophis ordinoides elegans*. *Thamnophis ordinoides hueyi*. The Elegans group. *Thamnophis ordinoides hydrophila*. *Thamnophis ordinoides couchii*. *Thamnophis ordinoides gigas*. *Thamnophis hammondi*. *Thamnophis digueti*. The Hydrophila group. *Thamnophis ordinoides atratus*. *Thamnophis ordinoides ordinoides*. The Ordinoides group. Behavior in captivity, and defense reactions. Breeding habits. Comparison of *Thamnophis ordinoides* with *Thamnophis sirtalis*. Economic relations of subspecies of *Thamnophis*. Discussion. Summary. Literature cited. Plates.

Note: This report is a contribution from the University of California Museum of Vertebrate Zoology. Its purpose is to bring down to date the classification of the complex western garter snake group *Thamnophis ordinoides* and to demonstrate the adaptive nature of subspecific or racial differences, with data based on observation of living individuals in their natural habitats as well as on preserved specimens, rather than to present an exhaustive account of the natural history of *Thamnophis ordinoides*.

GLOYD, HOWARD KAY

The rattlesnakes, genera *Sistrurus* and *Crotalus*; a study in zoogeography and evolution. Chicago, Ill.: The Chicago Academy of Sciences, 1940. 266 p. illus. 24 cm. (The Chicago Academy of Sciences. Special publication no. 4) Paper, \$2.50.

1669e

Contents: Introduction. Historical. Materials and procedure. Acknowledgments. A key to the species and subspecies of rattlesnakes. Genus *Sistrurus*. Genus *Crotalus*. General summary: The rattle. Size and form. Scutellation. Coloration. Specializations. Center of origin and dispersal. Bibliography. Index. Plates.

Note: This comprehensive study of the two rattlesnake genera had the following objectives: to review and revise the systematics of the rattlesnakes; to define and describe the species and subspecies; to bring together information concerning the distribution and variation of each form; to indicate the probable genetic relationships of the species and subspecies of the genus *Sistrurus* and a portion of the genus *Crotalus*; and to point out the most conspicuous evolutionary tendencies among the rattlesnakes and the probable center of origin of the group as a whole. The work is illustrated with 31 plates containing photographs and drawings and with 22 maps showing geographical distribution of species.

LOVERIDGE, ARTHUR

African reptiles and amphibians in Field Museum of Natural History. Chicago: Chicago Natural History Museum, 1936. 112 p. 24 cm. (Chicago Natural History Museum. Publication 360. Zoological series. Vol. xxii, no. 1) Paper, \$0.75. 1669f

Contents: Introduction. Summary of taxonomic changes. List of localities. List of species. Tortoises. Snakes. Lizards. Chameleons. Toads and frogs.

Note: A descriptive catalogue of species giving taxonomic data on the specimens of the African collections in the Museum up to December 31, 1931, at which time there were 941 reptiles and 1,241 amphibians.

LOVERIDGE, ARTHUR

Australian reptiles in the Museum of Comparative Zoology. Cambridge, Mass., 1934. 143 p. illus. 24 cm. (Harvard College. Museum of Comparative Zoology. Bulletin. Vol. lxxvii, no. 6) \$1.00. 1670

Note: The collection on which this report is based consists of 2,091 specimens, representing 267 species or races, comprising 1 of crocodilians, 8 of chelonians, 73 of snakes and 185 of lizards. More than half of the reptiles were taken in the field by members of the Harvard Expedition of 1931-1932. Other specimens had been obtained on earlier expeditions, while still others have been presented to the Museum by individuals and other museums. The statistical results of the study are stated under each species so that they may be available to Australian herpetologists. The name by which each species is now known is followed by the original citation and type locality, and the registration number in the departmental catalogues is given, followed by the locality.

NICHOLS, RAY JANNEY

Taxonomic studies on the mouth parts of larval Anura. Urbana, Ill.: University of Illinois Press, 1937. 73 p. illus. 26 cm. (Illinois biological monographs. Vol. xv, no. 4) Paper, \$1.00. 1670a

Contents: Introduction. Historical review. Materials and methods. Collections. Apparatus and methods of study. Analysis and discussion of results: *Bufo fowleri*. *Pseudacris nigrita triseriata*. *Rana pipiens*. General considerations involving all species studied. Summary and conclusions. Charts. Bibliography.

Note: The author justifies the use of relative measurements as taxonomic characters and shows how "graphic keys" may be constructed for ready identification of tadpoles without the necessity of calculating the ratios of rows of teeth in each case.

PERKINS, C. B.

A key to the snakes of the United States. San Diego, Calif.: Zoological Society of San Diego, 1940. 63 p. illus. 25 cm. (Zoological Society of San Diego. Bulletin no. 16) Paper, Gratis. 1670b

Contents: A list of the snakes of the United States. Use of key. Generic key. Key to each genus (alphabetically arranged). Drawings showing scale nomenclature. Glossary. Index.

Note: A compilation of previously published keys which provides in convenient form a single key covering all of the snakes in the United States. Correct taxonomic arrangement has been abandoned for the sake of convenience. Names of authors and publication data accompany those keys to several genera which were entirely written by others. The publication is intended for the beginning student of herpetology but is not suitable as a guide for the amateur naturalist.

POPE, CLIFFORD HILLHOUSE

Amphibians and reptiles of the Chicago area. Chicago, Ill.: Chicago Natural History Museum, 1944. 275 p. illus. (part col.) 21 cm. Paper, \$1.75. 1670c

Contents: Introduction. Identification. Amphibians: Salamanders. Frogs. Reptiles: Lizards. Snakes. Turtles. Index.

Note: This manual describes ten species of salamander, 11 species of frog, three species of lizard, 18 species of snake, and ten species of turtle found in the 19 counties in Illinois, Indiana, Wisconsin, and Michigan which comprise the Chicago area. The book is intended for general readers and amateur naturalists. Technical terms have been avoided where possible. Some of the illustrations are in color.

POPE, CLIFFORD HILLHOUSE

The reptiles of China: turtles, crocodilians, snakes, lizards. With 78 illustrations in the text, including a map, and 27 plates at end. New York: The American Museum of Natural History, 1935. 604 p. illus. 28 cm. (Central Asiatic expeditions. Natural history of Central Asia. Vol. x) \$10.00. 1671

Contents (abridged): General introduction. Systematic account by species and sub-species. Résumé of the natural history of Chinese snakes. Annotated check list of Chinese lizards. List of localities. Bibliography. Index.

Note: This work brings together a vast amount of information concerning the habits, classification, and distribution of reptiles in China and adjacent countries. The known forms of Chinese turtles, crocodilians, and snakes are taken up one by one and treated with equal emphasis on description, distribution, ecology, and synonymy. Keys to all families, genera, and species are included. The bibliography is extensive.

POPE, CLIFFORD HILLHOUSE

Snakes alive, and how they live. Illustrated with photographs and including an illustrated key for the identification of the snakes of the United States. New York: The Viking Press, 1937. 238 p. illus. 22 cm. \$2.50. 1672

Contents: A lover of snakes. Usefulness. Size. Age and growth. Senses and intelligence. Feeding. More about feeding. Reproduction. Locomotion. Defense. Enemies. Where snakes live. Hibernation. Popular beliefs. Snakes as medicine. Snake hunting. Snakes as pets. Venoms. Snake-bite and its treatment. Classification. Appendix: How to identify the snakes of the United States. Index.

Note: The author uses his wide knowledge of reptiles to point out the usefulness, intelligence, and good qualities of many snakes, the technique of handling them, and even their possibilities as pets for the children in the home. Venomous species are also described, and the appendix contains a key to the identification of all specimens of snakes found within the United States. The book is for the lay reader and amateur naturalist.

POPE, CLIFFORD HILLHOUSE

Turtles of the United States and Canada. Illustrated with 99 photographs. New York: A. A. Knopf, 1939. 343 p. illus. 22 cm. \$3.75. 1673

Contents (abridged): Turtle beginnings and ways. Identification of American turtles. The musk and mud turtles. The snapping turtles. Spotted, wood, Pacific and Muhlenberg's turtles. Blanding's turtle and the box turtles. Diamond-back terrapins. Map turtles. Painted turtles. Pseudemys turtles. Chicken turtles. The desert, Berlandier's, and gopher tortoises. The sea-turtles. The soft-shelled turtles. Bibliography. Lists of turtles with common and scientific names. Index.

Note: Written for the general reader. Turtles in general are discussed, and then the various species found in the United States and Canada are described, with notes on their characteristics, habitats, habits, etc. Directions are given for the care of baby turtles kept as pets.

SCHMIDT, KARL PATTERSON, AND D. DWIGHT DAVIS

Field book of snakes of the United States and Canada. With four colored plates and 103 drawings by Albert A. Engenbacher and 82 photo-

graphs from life. New York: G. P. Putnam's Sons, 1941. 365 p. illus. (part col.) 18 cm. \$3.50. 1673a

Contents: Introduction: The place of snakes in nature. Folklore of snakes. History of the study of snakes in the United States. Definition and classification. External characters and coloration. The poison apparatus and treatment of snake bite. Habits and behavior. Collection, preservation, and the study of snakes. Systematic account of the snakes of the United States and Canada: Key to the genera of the snakes of the United States and Canada. The blind snakes, family Leptotyphlopidae. The boas, family Boidae. The harmless snakes, family Colubridae. The rear-fanged snakes, family Boigidae. The coral snakes, family Elapidae. The sea vipers, family Hydrophidae. The pit vipers, family Crotalidae. References. Index.

Note: This is a useful pocket-size guide for amateur and professional naturalists who require a general knowledge of snakes for the successful pursuit of their particular specialty. The book, which can be easily carried along with the other equipment in a light field pack, gives ready reference to the identification, coloring, pattern, habits, behavior, poisonous or non-poisonous character, and other required information. Emphasis is placed on life history and ecology, while taxonomy and systematics are restricted to what is necessary for quick identification of typical specimens.

SCHMIDT, KARL PATTERSON, AND WALTER L. NECKER

The lizards of the Marquesas Islands. Honolulu, Hawaii: Bernice P. Bishop Museum, 1933. 11 p. illus. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. x, no. 2. Pacific Entomological Survey publication 5) \$0.50. 1673b

Note: This list records and gives the distribution of 223 specimens of lizards collected by the Survey and sent to the Museum for identification and study. The highlight of the collection lies in its record of the presence in the Marquesas of the gecko *Hemiphyllodactylus leucostictus*, hitherto known only from Hawaii. Since records of lizards in the Marquesas appear to have been wanting, this list fills a conspicuous gap in our knowledge of the Polynesian lizard fauna, a knowledge which, if sufficiently promoted, might furnish a clue to the beginnings of species formation by isolation. A key to the species is included in the article, and figures are inserted to illustrate the technical characters employed.

SMITH, HOBART MUIR

The Mexican and Central American lizards of the genus *Sceloporus*. Chicago: Chicago Natural History Museum, 1939. 398 p. illus. 24 cm. (Chicago Natural History Museum. Publication 445. Zoological series. Vol. 26) Paper, \$3.50. 1673c

Contents: Introduction. Geographical trends in variation. Biotic provinces of Mexico. Regional lists. Method of treatment. Definition of the genus. Arrangement of the species in groups. Key to the groups of *Sceloporus*. Systematic list. Bibliography. Index.

Note: A summary of the results of the author's studies based on a collection of 17,500 specimens of lizards of the iguanid genus *Sceloporus* which form one of the largest and most recent groups among the reptiles of the New World. Authors who have dealt with the genus as a whole have disagreed to a surprising extent in their arrangement and evaluation of the species. The present work attempts to reconcile some of these differences based on a more detailed study of a larger variety of species than hitherto possible. Original references, distribution, diagnosis, description, variation, relationships to other species, habits and habitat, and locality records are given for species or subspecies listed. There are 31 plates of photographs and a bibliography of approximately 300 articles and monographs.

STEJNEGER, LEONHARD HESS, AND THOMAS BARBOUR

A check list of North American amphibians and reptiles by Leonhard Stejneger and Thomas

Barbour. Fifth edition. Cambridge, Mass.: The Cosmos Press, Inc., 1943. 260 p. 24 cm. (Harvard College. Museum of Comparative Zoology. Bulletin. Vol. xciii. no. 1, July) \$2.50. 1674

Note: This fifth edition of the Check list was published because of the marked increase in herpetological activity which followed the appearance of the fourth edition in 1939. As the authors remark, such an increase seems apparently to be activated in some degree by the appearance of each edition of this list, and the number of additions and rectifications which followed the fourth edition was so great as to necessitate making the list practically *de novo*. The arrangement of material employed in previous editions has been retained.

STUART, LAURENCE COOPER

Studies of neotropical Colubrinae: viii, A revision of the genus *Dryadophis* Stuart, 1939. Ann Arbor, Mich.: University of Michigan Press, 1941. 106 p. illus. (part col.) 24 cm. (University of Michigan. Museum of Zoology. Miscellaneous publications. No. 49) Paper, \$1.15. 1675

Contents: Introduction. Materials and methods. *Dryadophis* Stuart, 1939. Key to the identification of the adults of *Dryadophis*. The *bifossatus* group. Position uncertain. The *pleei* group. The *boddaerti* group. The *melanolomus* group. Origin and affinities of the species groups. Literature cited.

Note: The eighth in a series of studies of snakes of the group Colubrina common to tropical and South America and adjacent islands. Parts i-vii have been published in *Occasional papers of the Museum of Zoology of the University of Michigan*, 1932-1940. It is the purpose of the present paper to present the author's completed investigations on the genus *Dryadophis*. Such phases as pattern and scutellation evolution and the laws of variation are presented before the material upon which the principles are based is described. This has been done to facilitate description, and the remarks on the origin and affinities of each group concludes the discussion of each group of forms. The revision is based upon an examination of approximately 650 specimens. There are 51 works listed in the bibliography covering the period 1825-1939.

WRIGHT, ALBERT HAZEN

Life-histories of the frogs of Okefinokee swamp, Georgia; North American Salientia (Anura) no. 2. New York: The Macmillan Company, 1931. 497 p. illus. 27 cm. \$5.00. 1678

Contents (abridged): The Okefinokee region. Plant habitats. A catalogue of the species of the Salientia of the Okefinokee region. Hypothetical species. General discussion of the Okefinokee Salientia, etc.

Note: The complete life histories of twenty species of frogs found in the southeastern part of the United States are given textually and pictorially, 387 photographs from life being included. Each life history, of twenty pages approximately, treats the following topics: scientific name, common names, range, general appearance, measurements, habitat, first appearance, general habits, voice, mating (coloration from live male and female, structural differences, duration, amplexation), ovulation (habitat, period, temperature, and humidity), egg-laying process, eggs (attachment, mass, description, dangers), hatching period, tadpoles (coloration from life, general appearance, mouth parts, measurements, general remarks), larval period, transformation (period, size), growth, food, autumnal disappearance, affinities, bibliography. A general account with keys, tables, and general summaries precedes the individual life histories.

WRIGHT, ANNA (ALLEN), AND ALBERT HAZEN
WRIGHT

Handbook of frogs and toads; the frogs and toads of the United States and Canada. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1942. 286 p. illus. 22 cm. (Handbooks of American natural history. Vol. 1) \$3.00. 1679

Contents: General account. Accounts of species: Bell toads. Spade-foots. Toads. Cricket-frogs. Chorus frogs. Tree frogs. Robber frogs. True frogs. Narrow-mouthed toads. Bibliography. Index.

Note: This edition has been revised to include species and subspecies recognized since the first edition appeared in 1933. Of the 98 accounts, 30 old accounts have additions; nine are new accounts without plates; six are new accounts with new plates; two are plates rearranged with additions to plates and accounts. New keys have been made for 26 forms, and the bibliography has been enlarged by the addition of recent information.

This book was written to supply teacher, student, and naturalist with descriptions of the frogs and toads of North America. In it, each account of species occupies two pages and, with few exceptions, is accompanied by a panel of pictures. Its discussions include names, common and scientific; range; habitat; size; general appearance; structure; voice; breeding (development from the egg stage through the transformation of the tadpole); and notes of two sorts—excerpts from the authors' journals and quotations from 50 authorities. The 13-page introductory account gives general biological information on the subject, and serves as a key to the use of the book. A bibliography provides a section on important works, a check list, and pertinent state and province references. There are 88 halftone plates, each covering half of a page, which comprise 440 photographs and 30 drawings of living frogs and toads, every species being represented in several different postures.

Birds

AMERICAN ORNITHOLOGISTS' UNION

Fifty years' progress of American ornithology, 1883-1933. Revised edition. Lancaster, Pa.: American Ornithologists' Union, 1933. 249 p. illus. 24 cm. Paper, \$1.00. 1679a

Contents: Introduction. A brief history of the American Ornithologists' Union, by T. S. Palmer. American ornithological literature, 1883-1933, by Witmer Stone. Fifty years of bird migration, by William Rowan. Bird banding, by Frederick C. Lincoln. The theory of territorialism and its development, by Margaret Morse Nice. Advances in life history work, by Herbert Friedmann. Economic ornithology, by W. L. McAtee. Collections of birds in the United States and Canada: study collections, by James L. Peters. Exhibition collections, by Frank M. Chapman. History and progress of bird photography in America, by Alfred O. Gross. Fifty years of progress in American bird-art, by George Miksch Sutton. Fifty years of bird protection, by T. Gilbert Pearson. Ornithological education in America, by Arthur A. Allen. Fossil birds, by Alexander Wetmore. Appendix: Meetings and membership of the Union. Chronology of the American Ornithologists' Union.

Note: This collection of papers does not pretend to cover the entire field of study and activity in ornithology in America. Rather, emphasis is placed on the progress in the science as it is shown by collections, literature, and illustrations, and the information available for educational work in the fields of migration, bird banding, life histories, territorialism, economic ornithology, and paleontology.

BALDWIN, SAMUEL PRENTISS, AND OTHERS

Measurements of birds by S. Prentiss Baldwin, Harry C. Oberholser, and Leonard G. Worley. Illustrations by James Manson Valentine. Cleveland, O., 1931. 165 p. illus. 23 cm. (Scientific publications of the Cleveland Museum of Natural History. Vol. 2, 1931) Paper, \$1.20; cloth, \$1.85. 1680

Contents: Introduction. Measurements: Total length. Bill. Head. Neck. Body. Wing. Tail. Leg. Foot. Bibliography. Index.

Note: A discussion of methods of taking measurements of birds, designed to help in the standardization of such measurements and of the manner of obtaining them. In some cases when there are two or more methods of taking the same measurement the authors indicate their preference. A bibliography refers to all publications found by the authors which explain manner or method of taking measurements. Illustrations are employed to show techniques.

CRAIGHEAD, FRANK, AND JOHN CRAIGHEAD

Hawks in the hand; adventures in photography and falconry. With illustrations. Boston: Houghton Mifflin Company, 1939. 290 p. illus. 21 cm. \$3.50. 1682

Contents: How it all began. We become falconers—Ulysses and Comet. Over the cliff on a rope—the duck hawk. Our national bird in the hand—the bald eagle. King of the night—the great horned owl. A battle of wits—the northern raven. High flyers—the buteos. 'Windy'—the barn owl. The terror of the woodland—the Cooper's and sharp-shinned hawks. Smallest and brightest—the sparrow hawk. 'Bubo'—the screech owl. Off to Canada—the pigeon hawk. 'Handsome'—the osprey. Tufty and the runt—the long- and short-eared owls. 'Cactus'—the burrowing owl. Photographer's dream—the prairie falcon and the golden eagle. Notes on bird photography.

Note: A popularly written book on falconry and hawks as they are found in nature. The book is of more interest to amateur ornithologists and laymen interested in birds than it is to persons interested in falconry as a sport.

HERRICK, FRANCIS HOBART

Wild birds at home. New York: D. Appleton-Century Company, Incorporated, 1935. 345 p. illus. 22 cm. \$4.00. 1683

Contents: A method of study. Sketches for intimate biographies. The cuckoo. Communal life in the gull. Birds' nests. Nest-building in the robin. The barn swallow's building behavior. Building the vireo's pensile nest. The oriole, master weaver. Development and care of the young. Life and instinct. Tent and camera, the tools of bird photography. Index.

Note: A popular study of birds which is chiefly concerned with those activities which center in the homes or nests of certain species of the more common birds of the United States. Individual behavior and development at different types of nests are emphasized, with notes on the period of mating, nest-building, and care of the young. The work is based upon the method of study devised by the author which makes use of a specially constructed observation tower and tent-blind, together with telephoto camera lenses. There are 137 photographs, mostly by the author.

HICKEY, JOSEPH J.

A guide to bird watching. With illustrations by Francis Lee Jaques and bird tracks by Charles A. Urner. New York: Oxford University Press, 1943. 262 p. illus. 22 cm. \$3.50. 1683b

Contents: How to begin bird study. The lure of migration watching. Adventures in bird counting. Explorations in bird distribution. The romance of bird banding. The art of bird watching. Appendixes: An introduction to bird tracks. Some results of breeding-bird censuses. Outline for a life-history study. An annotated list of bird books. Bird clubs in Canada and the United States. Index.

Note: A well-written book for the amateur ornithologist and bird lover. The author has included what he believes is of interest to the average reader of this type. He has not attempted to summarize the bird literature on this subject, nor has he devoted much space to the subject of bird behavior.

KENDEIGH, SAMUEL CHARLES

Territorial and mating behavior of the house wren. Urbana, Ill.: University of Illinois Press, 1941. 120 p. illus. 26 cm. (Illinois biological monographs. Vol. xviii, no. 3) Paper, \$1.50. 1685

Contents: Introduction. Spring arrival of birds: Integration of the breeding population. Return to former territories. Homing tendency in nesting birds. Establishment and defense of territories: Song. Nest-sites. Chasing and fighting. Evolution of territorial defense. Destructive tendencies. The female's role. Characteristics of the territory: Variability in territorial boundaries. Changes in territories between breeding periods. Size of territories. Reproductive vigor: Physiological readiness. Non-breeder. Multiple nesting. Mating behavior: Nest inspection and coun-

ship. Coition. Female discriminations. Sex recognition. Remating for second breeding period. Remating in subsequent seasons. Termination of nesting. History of individual territories. History of individual birds. Summary. Literature cited.

Note: Case-history studies of 142 male and 147 female birds during a nineteen-year period, from 1921 to 1939, at the Baldwin Bird Research Laboratory, near Cleveland, Ohio.

MENDALL, HOWARD LEWIS

The home-life and economic status of the double-crested cormorant *Phalacrocorax auritus auritus* (Lesson). Orono, Me.: The University Press, 1936. 159 p. illus. 22 cm. (University of Maine studies. Second series, no. 38) Paper, \$1.00. 1686

Contents: Introduction. History of the double-crested cormorant in New England. Distribution. Migration. Courtship. Nests. Eggs. Care of the young. Development of young double-crested cormorants. Activities of the young. Nocturnal behavior. Miscellaneous activities of adults. Economic status of the double-crested cormorant. Ecology. Summary. Literature cited. Explanation of plates. Plates. Index.

Note: This study attempts to portray the detailed behavior of the double-crested cormorant during the breeding season, together with closely related activities in the life-cycle of the bird, such as distribution and migration. The account is the result of three summers' observations made on the Maine coast, chiefly in the cormorant colony on Marblehead Island in West Penobscot Bay. The field work was supplemented by a search of available literature and by correspondence with ornithologists.

PETERS, JAMES LEE

Check-list of birds of the world. Cambridge: Harvard University Press, 1931-40. 4 v. 23 cm. \$4.00 each volume. 1687

Contents (abridged): Volume i. Subclass Archaeornithes. Order Archaeopterygiformes. Subclass Neornithes. Superorder Odontognathae. Superorder Palaeognathae. Superorder Neognathae. Order Ciconiiformes. Order Anseriformes. Order Falconiformes. New name proposed in Volume i. Index. Volume ii. Order Galliformes. Order Gruiformes. Order Diatrymiformes. Order Charadriiformes. Index. Volume iii. Order Columbiformes. Order Psittaciformes. Index. Volume iv. Order Cuculiformes, plantain-eaters, cuckoos. Order Strigiformes, owls. Order Caprimulgiformes, oil-birds, goatsuckers. Order Apodiformes, swifts, hummingbirds. Index.

Note: A checklist covering 569 genera and 5106 forms of birds of the world. It is designed to supplement Richard Bowdler Sharpe's *Handlist of the genera and species of birds*, London, 1899, and to cover advances in ornithological knowledge since the publication of that work. The order of families and higher groups used is essentially the same as that proposed by Wetmore in the *Proceedings of the United States National Museum*, 76, Art. 24, 1930, p. 1-8. The inclusion of a species or subspecies does not necessarily mean that the author is in a position to vouch for it, but rather that he is depending upon the consensus of the best available opinion. The work is designed primarily for systematic ornithologists.

STRONG, REUBEN MYRON

A bibliography of birds; with special reference to anatomy, behavior, biochemistry, embryology, pathology, physiology, genetics, ecology, aviculture, economic ornithology, poultry culture, evolution, and related subjects. Chicago: Chicago Natural History Museum, 1939. 2 v. 24 cm. (Chicago Natural History Museum. Publications 442 and 457. Zoological series. Vol. 25, parts 1 and 2) Paper, \$11.00 the set. 1687a

Contents (abridged): Rules and symbols employed. List of abbreviations for periodicals cited. List of periodicals not cited but relating to birds. Author catalogue: Part 1, A to J; part 2, K to Z.

Note: This bibliography contains approximately 20,000 titles of books, articles, and monographs published throughout the world from earliest times to about 1926, with several additional references for later years up to 1938. The titles are those relating

especially to the field outside taxonomy and distribution, although a few especially important works in those fields have been listed and bibliographies included. Paleontology is covered except for titles preceding the publication of Lambrecht's *Catalogue*, Berlin, 1921. In general, existing bibliographies are used so far as possible, so that titles in certain fields previously covered in other bibliographies are not included. The selection of titles was determined largely by their probable value to investigators, so that uncritical literature was in general avoided. The library where each publication was verified is indicated in the entry, but there are no contents or other annotations. Titles are listed chronologically by author. A third volume is in preparation and will contain a subject index and list of bibliographies.

WETMORE, ALEXANDER

A systematic classification for the birds of the world. Washington, D.C.: The Smithsonian Institution, 1940. 11 p. 24 cm. (Smithsonian miscellaneous collections. Vol. 99, no. 7. Publication no. 3592) \$0.10. 1688

Note: A revision of Wetmore's earlier work of the same title, 1934, Vol. 89, no. 13 of the *Smithsonian miscellaneous collections*, which is out of print. The present paper contains relatively few changes and constitutes an arrangement of the class Aves into the subclasses Archaeornithes and Neornithes, the latter broken down into superorders, orders, suborders, superfamilies, and families. Genera and species are naturally omitted in this outline form. Common names are given as well as Linnean classifications. Minor changes in accepted family limits are made in the Psittacidae and there are some changes in nomenclature.

Birds of Various Regions

AIKEN, CHARLES EDWARD HOWARD

Birds of the Southwest. Colorado Springs, Colo.: Colorado College, 1937. 72 p. illus. 23 cm. (Colorado College publication. General series no. 212. Studies series no. 23) Paper, \$0.75. 1688a

Contents: Biography. The itinerary of Aiken's journey. Some notes on birds, etc., noticed on my trip to Arizona. Journal of second trip to the Gila River, A.T. from Black River, 1876. An official report. Four short notes on birds. Fragments of a diary. List of birds observed.

Note: A collection of the notes and diaries of the author's field trip, as a young naturalist, from Colorado to Arizona Territory in 1876. Many fauna which have since disappeared from their former haunts are here accurately and minutely described, and there are observations on other natural phenomena as well. A frontispiece and map are the only illustrations.

ALLEN, ARTHUR AUGUSTUS

American bird biographies, containing the complete life-histories of familiar birds written in autobiographical form. With ten color plates and ten wash drawings by George Miksch Sutton and 190 photographs of the birds in nature by the author. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1934. 238 p. illus. (part col.) 25 cm. \$3.50. 1688b

Contents: The screech-owl's story. The chickadee. Jenny Wren's diary. The tanager's story. The house sparrow. The sea-gull's story. The oriole's story. A strange mother—the cowbird. The peregrine's story. The canvassback. The bluebird's story. The kingfisher's story. The green heron's story. Ruby-throat. A mother grouse. The flicker's story. The killdeer. The American redstart. Cock robin's story. Mother goldfinch tells her story. Questions on the life histories of North American birds.

Note: Not a juvenile book, although the chapter titles may give that impression, but rather intended for the nature-lover who is ready to progress beyond the naming or cataloguing stage of his bird study, and for teachers and parents. It presents the life stories of birds from the viewpoint of the birds themselves, and includes all of the pertinent scientific facts of their habits,

distribution, migration, nesting, and other significant details, but omits the conventional listing of plumages and characteristics. In the writing the author has avoided assigning to the birds any greater degree of intelligence than conservative ornithologists allow.

ALLEN, ARTHUR AUGUSTUS

The golden plover and other birds. With seven color plates by George Miksch Sutton and 240 photographs of birds in nature by the author. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1939. 324 p. illus. (part col.) 25 cm. (American bird biographies. Second series) \$3.00. 1688c

Contents: The golden plover. Willow ptarmigan—the Eskimo chicken. The tree sparrow. The Cornell cardinal. The veery and some of his family. The starling. The red-eyed vireo and his kin. The indigo bunting. The song sparrow. The white-breasted nuthatch. Jim Crow. The crested flycatcher's story. The friendly chipmunk. Downy woodpecker. The prairie horned lark. The meadowlark. The bank swallow. Bull bat—the nighthawk. Mother marsh hawk tells her story. Cedar waxwing—the cheery bird. Hell-diver—the pied-billed grebe. Florida gallinule—the water chicken. The Virginia rail and the sora. The redwing. The double-crested cormorant. The sandhill crane. Wild geese. Questions on the life histories of North American birds.

Note: A continuation, similar in scope and treatment, to the author's *American bird biographies*, Ithaca, N.Y., 1934, described above.

AUDUBON, JOHN JAMES

The birds of America; with a foreword and descriptive captions by William Vogt. New York: The Macmillan Company, 1937. xxvi p. illus. (col.) 31 cm. \$4.95. 1689

Note: The 435 plates in this volume were originally published by Audubon in London during the years 1827-1838, in the so-called "Elephant folio" edition, from which the reduced 9" x 12" colored lithographic reproductions contained in the present work were made by means of direct color photography. The plates are accompanied by new descriptive captions by the present editor, giving modern names, both vernacular and scientific, together with the ranges based on the *Check-list of the American Ornithologists' Union*, the habitat, and conspicuous diagnostic characteristics for easy identification. Breeding or nesting habits and food are also briefly noted. In a separate section a transcript of Audubon's original captions for each plate is given, together with a note on the history of the original plates. There is an index of common names used in the present text and on the original plates.

BALL, STANLEY CRITTENDEN

Jungle fowls from Pacific islands. Honolulu, Hawaii: Bernice P. Bishop Museum, 1933. 121 p. illus. (part col.) 25 cm. (Bernice P. Bishop Museum. Bulletin 108) \$2.00. 1689a

Contents: Historical mention of Pacific fowl. Collections of the Whitney South Sea Expedition. Descriptions: wild male jungle fowl; males from the Pacific; adult wild female; hens from the Pacific. Color: determination by physical properties; macroscopic analysis; microscopic; high magnification. Conclusions. Literature cited. Plate legends.

Note: The jungle fowls in the Whitney collection, on which this study is based, came from six archipelagos in the South Pacific and comprise 92 skins. Because these fowls, which are doubtless descended chiefly from fowls brought to the islands by the ancestors of the existing Polynesians, constitute important collateral evidence that the ancestors entered the Pacific from the west rather than from the east, this study is intended not only for ornithologists but also for zoologists, especially geneticists, and for anthropologists as well. A detailed account of the historical data is included.

BANGS, OUTRAM, AND JOSSELYN VAN TYNE

Birds of the Kelley-Roosevelts Expedition to French Indo-China. Chicago: Chicago Natural History Museum, 1931. 86 p. illus. (part col.)

24 cm. (Chicago Natural History Museum. Publication 290. Zoological series. Vol. xviii, no. 3) Paper, \$0.75. 1689b

Note: The collection of birds here reported upon was made in 1929 by the Indo-China division of the William V. Kelley-Roosevelts Expedition of Field Museum. The present report deals only with collections made in Tonkin and Laos, which number more than three thousand specimens comprising 387 species. The color nomenclature used in the taxonomic descriptions is that of Ridgway's *Color standards and color nomenclature*, Washington, D.C., 1912. A map, gazetteer, itinerary, and two color plates are included.

BENNETT, LOGAN JOHNSON

The blue-winged teal, its ecology and management. Ames, Ia.: Collegiate Press, Inc., 1938. 144 p. illus. (part col.) 23 cm. \$1.50. 1689c

Contents: Characteristics of the bird. Breeding range. Fall migration. Wintering grounds. Spring migration. Courtship and mating. Nesting. Rearing of young. Nest destruction and juvenile mortality. Nesting cover. Rearing cover. Food habits. Nesting populations. Parasites and diseases. Agriculture and drainage. Breeding, refuge, and shooting areas. Estimating the yearly production. Future of the blue-winged teal.

Note: A report of five years of study during 1932 through 1937 when the author literally lived with this game bird from its breeding range on the prairies of Canada and the United States to its wintering quarters in the tropics of Latin America. Many of the illustrations are photographs by the author. There is a bibliography.

BOND, JAMES

Check-list of birds of the West Indies. Philadelphia: The Academy of Natural Sciences, 1940. 184 p. illus. 23 cm. Paper, \$2.00. 1689d

Contents: Colymbiformes. Procellariiformes. Pelicaniformes. Ciconiiformes. Anseriformes. Falconiformes. Galliformes. Gruiformes. Charadriiformes. Columbiformes. Psittaciformes. Cuculiformes. Strigiformes. Caprimulgiformes. Apodiformes. Trogoniformes. Coraciiformes. Piciformes. Passeriformes. Subfossil birds. Birds known from hearsay. Introduced species. Index.

Note: A supplement to the author's earlier work, *Birds of the West Indies, an account with full descriptions of all the birds known to occur or to have occurred in the West Indian islands*, Philadelphia, 1936 (see Index). The present volume indicates in addition to the ranges the apparent status of every form known from the region which embraces the Greater Antilles, the Virgin Islands, the Cayman and Swan Islands, the Lesser Antilles south to Grenada, and the Bahama Islands. There is a 7 x 9 inch map in color showing the voyages taken and the islands visited by the author.

CAUM, EDWARD LEONARD

The exotic birds of Hawaii. Honolulu, Hawaii: Bernice P. Bishop Museum, 1933. 55 p. 23 cm. (Bernice P. Bishop Museum. Occasional papers. Vol. x, no. 9) \$0.50. 1689e

Note: Since the species endemic and indigenous to Hawaii have been treated thoroughly in other publications, this article considers only birds not native to this island. Its special purpose is to supply information which may be useful in the event that a systematic program of bird introduction into Hawaii is undertaken. The list includes all the species of which any record has been found to show that the bird was at one time present in the wild state or was released with the idea that it might propagate and establish its species. A description of each species, brief but adequate for identification, is included, and notes on the success or failure of attempts at establishment.

CHAPIN, JAMES PAUL

The birds of the Belgian Congo. New York: The American Museum of Natural History, 1932-39. 2 v. illus. (part col.) 24 cm. (American Museum of Natural History. Bulletin. Vol. LXV, 1932, and LXXV, 1939) Paper, \$13.00 set. 1689f

Contents (abridged): Part I: General survey of the country and its bird life: Topography and geology. Climate. Faunal relations and subdivisions. Bird distribution in the Congo and its ecological aspects. Typical cases of geographic variation. Breeding seasons of birds. Bird migrations. Evolution and relations of the Ethiopian fauna. Systematic list of species and races, with notes on distribution, habits, and food: Struthioniformes. Colymbiformes. Procellariiformes. Pelecaniformes. Ciconiiformes. Phoenicopteriformes. Anseriformes. Falconiformes. Galliformes. Turniciformes. Index. Part II: Ralliformes. Gruiformes. Charadriiformes. Lariformes. Columbiformes. Cuculiformes. Psittaciformes. Coraciiformes. Strigiformes. Caprimulgiformes. Coliiformes. Trogoniformes. Piciformes. Index.

Note: A systematic description of the birds found in the Belgian Congo and Mandated Territories, covering an area of approximately 932,000 square miles. Preceding the list proper is a detailed study of the general conditions of the country and its avifauna. Distribution, description, habits, habitat, original literature citation, and related data are given for each species covered. There are numerous black-and-white line drawings showing anatomical details, and many maps and photographs of birds and flora. Subsequent volumes are planned to cover the Passeriformes and other orders not included in the present volumes.

CRUICKSHANK, ALLAN D.

Birds around New York City; where and when to find them. With the cooperation of the Department of Ornithology of the American Museum of Natural History and the Linnaean Society of New York, with photographs by the author. New York: The American Museum of Natural History, 1942. 489 p. illus. 20 cm. (American Museum of Natural History. Handbook series. No. 13) \$1.75. 1689g

Contents (abridged): Introduction. Area included. Our major ecological blocks: Open ocean. Ocean. Beaches and sand dunes. Coastal bayberry, high-tide bush and poison ivy thickets. Salt or brackish marshes. Sheltered salt water. Fresh water. Disturbance communities. Plains and dry fields. Mixed deciduous growth. Great pine and oak barrens. Seasonal variation: Permanent residents. Summer residents. Summer visitants. Winter visitants. Transient visitants. Extinct or extirpated species. Introduced species. The ornithological year. Annotated list of birds found around New York. Index.

Note: The most striking feature of this work is the collection of 35 excellent bird photographs by the author, although the work is not merely a picture-book but covers the distribution habits, habitat, and general description of the surprisingly large number of bird species found in New York State south of Rockland and Westchester counties, including all of Long Island, and about one-third of New Jersey. The style and format are intended to appeal to the amateur bird-lover.

DICKEY, FLORENCE VAN VECHTEN (MURPHY)

Familiar birds of the Pacific Southwest, with size and color key. Illustrated with 102 full color reproductions from photographs chiefly by Donald R. Dickey. Stanford University, Calif.: Stanford University Press, 1935. 241 p. illus. (part col.) 17 cm. \$3.75. 1689h

Note: An illustrated key for amateur bird lovers, providing a simple and easy method of becoming familiar with the more common birds of the region indicated. No scientific terms have been used in either key or descriptive text, the author believing that they might be a detriment for the beginner since they do not facilitate identification. The scientific names are, however, given in an appendix and follow the nomenclature of the American Ornithologists' Union's *Check-list of North American birds*, Lancaster, Pa., 1931, o.p.

DU MONT, PHILIP ATKINSON

A revised list of the birds of Iowa. Iowa City, Ia.: The University of Iowa, 1933. 171 p. illus. 23 cm. (University of Iowa studies in natural history. Vol. xv, no. 5) Paper, \$1.00. 1689i

Contents: Introduction: Historical. Physical features. Faunal areas. Change in breeding species. Scope of the work. Collections. Field work. The birds of Iowa. Hypothetical list. Appendix. Bibliography. Index.

Note: The purpose of this paper is to present a complete list of the birds that have been found in Iowa, giving the status or relative abundance and distribution of each species. Three hundred and sixty-four species are included. The previous list, compiled by Rudolph M. Anderson and published in 1907, included 354 species. The illustration is a map of Iowa.

FORBUSH, EDWARD HOWE

Natural history of the birds of eastern and central North America. Revised and abridged with the addition of more than one hundred species by John Richard May. Illustrated in color by Louis Agassiz Fuertes, Allan Brooks and Roger Tory Peterson. Boston: Houghton Mifflin Company, 1939. 554 p. illus. (part col.) 29 cm. \$3.75. 1690

Contents (abridged): The classification of birds. Order Gaviiformes: loons. Order Colymbiformes: grebes. Order Procellariiformes: tube-nosed swimmers. Order Pelecaniformes: totipalmate swimmers. Order Ciconiiformes: herons, ibises, and allies. Order Anseriformes: swans, geese, and ducks. Order Falconiformes: diurnal birds of prey. Order Galliformes: gallinaceous birds. Order Gruiformes: cranes, rails, and allies. Order Charadriiformes: shore birds, gulls, auks, and allies. Order Columbiformes: pigeonlike birds. Order Psittaciformes: parrots and paroquets. Order Cuculiformes: cuckoo-like birds. Order Strigiformes: owls. Order Caprimulgiformes: goatsuckers and allies. Order Micropodiformes: swifts and hummingbirds. Order Coraciiformes: kingfishers and allies. Order Piciformes: woodpeckers and allies. Order Passeriformes: perching birds. Appendix. Indexes.

Note: This work is based on Forbush's *Birds of Massachusetts and other New England states*, Boston, 1925-29. Although it is a one-volume abridgment of the original three-volume work, its scope has been broadened to include the birds of North America east of the ninety-fifth meridian of west longitude, necessitating the inclusion of new descriptive material, new illustrations, and changes in the original arrangement of the text. The birds are grouped according to the nineteen orders of the superorder Neognathae which are native to North America, and are listed by common name under each order. Identification, physical characteristics, voice, breeding habits, and range are given for each bird described, together with one or more paragraphs of relevant information on its general habits, appearance in flight, unusual features, and other nature notes. There are 97 colored plates of drawings.

FRIEDMANN, HERBERT, AND ARTHUR LOVERIDGE

Notes on the ornithology of tropical East Africa. Cambridge, Mass.: The Cosmos Press, Inc., 1937. 413 p. 24 cm. (Harvard College Museum of Comparative Zoology. Bulletin. Vol. LXXXI, no. 1, April) \$3.00. 1691

Note: The collection of birds on which this report is mainly based consists of about 4,000 skins of some 800 species and subspecies, collected by Arthur Loveridge when residing in East Africa from 1915 to 1923. The bulk of the collection is owned by the Museum of Comparative Zoology. The majority of the specimens came from the northern half of Tanganyika Territory, but some came from Bukoba, British Ruanda, Uganda and Kenya Colony, also from the vicinity of Lumbo, Mozambique. A geographical list of the localities is included for the convenience of investigators using this paper. The authors remark that this report is not a faunal study but rather an attempt to put into usable form and to place on record a great many facts, observations, reflections, and opinions about a large number of kinds of birds found in tropical East Africa. In some respects it may be looked upon as a supplement to the work done in Kenya Colony and Uganda by van Someren, as it extends the limits far to the south of the latter's localities. In the present study the previously known ranges of 104 species and subspecies are extended appreciably; ten forms new to science (described elsewhere) have been found, while 31 of the birds are new to the avifauna of Tanganyika Territory and one of them is recorded for the first time from the Ethiopian region.

GABRIELSON, IRA NOEL, AND STANLEY G. JEWETT

Birds of Oregon. Corvallis, Ore.: Oregon State College, 1940. 650 p. illus. (part col.) 23 cm. (Oregon State monographs. Studies in zoology. No. 2) \$5.00. 1691a

Contents: Foreword. Preface. Check-list of the birds of Oregon. Something about birds as a group. Topography and life zones of Oregon. Federal bird refuges in Oregon. History of Oregon ornithology. List of birds originally described from Oregon. Annotated list of the birds of Oregon. Hypothetical list. Bibliography. Index.

Note: An extensive work compiled by the authors over a period of 40 years. The central core of the book is its annotated list describing the Oregon species of 18 orders of birds together with distributional, historical, and other notes about each species. It is illustrated with photographs and a colored folding map of the "Life zones of Oregon," by Vernon Bailey. The bibliography covers 30 pages.

GRISCOM, LUDLOW, AND JAMES C. GREENWAY, JR.

Birds of Lower Amazonia. Cambridge, Mass.: The Cosmos Press, Inc., 1941. 261 p. 24 cm. (Harvard College. Museum of Comparative Zoology. Bulletin. Vol. LXXXVIII, no. 3, June) \$2.25. 1692

Contents: Introduction. Principal collections. Geographical notes. Ecological and distributional notes. Migrants or winter visitants. Systematic list. Bibliography.

Note: The identification of a collection of birds from Amazon River valley, acquired by the Museum of Comparative Zoology and totalling 4023 skins, furnished the incentive for writing this paper. The collection proved to contain a few novelties, many rarities, and numerous range extensions. The large Klages collection at the Carnegie Museum in Pittsburgh was also studied, and specimens and supplementary information from this source are included in this report. The area covered is defined as the lowest quarter of the main Amazon and its tributary rivers to the degree to which they have been ascended by ornithological collectors. It represents a mere fraction of the drainage system of the main Amazon. The authors call attention to the occurrence of two distinct faunas in Lower Amazonia, the principal one being the Guiana-Amazonian fauna, while a totally different fauna is encountered in the higher "campos" of central Brazil or the more arid coast of Ceará and Maranhão. This, they explain, is due to the presence of natural savannahs in the sea of primeval rain forests, for ecological factors are of primary importance in the distribution of birds.

GRISCOM, LUDLOW

The ornithology of the Caribbean coast of extreme eastern Panama. Cambridge, Mass., 1932. 70 p. 24 cm. (Harvard College. Museum of Comparative Zoology. Bulletin. Vol. LXXII, no. 9) \$0.50. 1693

Note: This monograph presents a study of the avifauna of this region, based on a collection of 1,396 skins obtained from sea level to 1,500 feet. The skins are referable to 284 species. The author remarks that although this does not comprise a complete list for the tropical zone, it is a thoroughly representative one, sufficient to give an idea of the avifauna and its geographical affinities. So far as he was able to discover, this collection is the first to have been made of authentically labeled bird skins from this region.

GRISCOM, LUDLOW

The ornithology of the Republic of Panama. Cambridge, Mass., 1935. 124 p. 24 cm. (Harvard College. Museum of Comparative Zoology. Bulletin. Vol. LXXXVIII, no. 3) \$0.75. 1694

Contents: History of Panama ornithology. Principal faunal papers dealing with Panama birds. General physiography and climate. Life-zones of Panama and their bird-life. Distributional check list of Panama birds. Orders and families.

Note: In 1924 the author compiled a check list of all the birds recorded from Panama, and made plans for the exploration of various neglected parts of the country, work which continued through the next eight years. In this paper he gives a summary of the results of this exploration as well as of his general studies on this subject. The list of Panama birds has been increased during the past two decades by about 23 percent. In the distributional check list, 1038 species and subspecies appear, one of the most concentrated avifaunas in the world.

HAUSMAN, LEON AUGUSTUS

The illustrated encyclopedia of American birds. Illustrated by Jacob Bates Abbott. New York: Halcyon House, 1944. 541 p. illus. 21 cm. \$1.98. 1694a

Note: This guide and reference work for the amateur naturalist lists 1,422 species and subspecies of birds found in North America, based on the American Ornithologists' Union's *Check-list of North American birds*, 1931, o.p. The birds are listed in one alphabetic order by vernacular name only, although the scientific name is given as part of the descriptive note, which also includes a brief account of male and female characters, length, distribution, and general remarks. The AOU number is indicated for each species covered, but there are no references to the original literature or describer's name. A 36-page classified list of North American birds is reproduced from the American Ornithologists' Union's *Check-list* referred to above, and there is a bibliography of 80 general works. The illustrations are reduced pen-and-ink sketches in black-and-white.

HELLMAYR, CARL EDUARD

The birds of Chile. Chicago: Chicago Natural History Museum, 1932. 472 p. 24 cm. (Chicago Natural History Museum. Publication 308. Zoological series. Vol. XIX) Paper, \$2.50. 1694b

Contents: Introduction. Historical sketch of Chilean ornithology. Expedition of Field Museum. General physiography of Chile. Climatic conditions, rainfall, and distribution of forests. The life zones of Chile. Geographical variation in Chilean birds. Bird migration in Chile. Distributional list of the birds of Chile. Ornithological bibliography of Chile. Index.

Note: A comprehensive compilation of all the available information on Chilean ornithology, hitherto scattered through numerous books and serials. The main body of the work is a systematic account and description of species purporting to include every species recorded from the area between 18° and 48° S. lat., extending from the summit of the Andes to the seacoast, regardless of whether or not it is represented in the Chicago Natural History Museum. The purely oceanic birds such as petrels and albatrosses have been omitted except for a very few species. References to original descriptions and extralimital papers not included in the bibliography given at the end of the list are quoted at length in the descriptive notes. The sequence of species follows that of James's *New list of Chilean birds*, London, 1892, and the color terms conform to Ridgway's *Color standards and color nomenclature*, Washington, 1912.

HELLMAYR, CARL EDUARD, AND CHARLES BARNEY CORY

Catalogue of birds of the Americas and the adjacent islands in Field Museum of Natural History, including all species and subspecies known to occur in North America, Mexico, Central America, South America, the West Indies, and islands of the Caribbean Sea, the Galapagos Archipelago and other islands which may be included on account of their faunal affinities. [Initiated by Charles B. Cory. Continued by Charles E. Hellmayr, with the assistance of Boardman Conover] Chicago: Chicago Natural History Museum (formerly Field Museum of Natural History), 1918-42. 11 v. illus. (part col.) 23 cm. (Chicago Natural History Museum. Zoological series. Vol. XIII, parts I-XI. *Its Publi-*

cations 197, 203, 223, 234, 242, 266, 330, 347, 365, 381, 430, and 514) Paper, \$45.00 per set plus shipping charges. 1695

Contents: Part I, number 1: Rheidae. Tinamidae. Gracidae. Tetraonidae. Phasianidae. Numididae. Meleagrididae. Opisthocomidae. Gruidae. Aramidae. Psophiidae. Rallidae. Heliornithidae. Eurypygidae. Cariamidae. Columbidae. Part II, number 1: Strigiformes. Psittaciformes. Coraciiformes. Part II, number 2: Trogones. Coccoyges. Scansores. Piciformes. Part III: Pteroptochidae. Conopophagidae. Formicariidae. Part IV: Fumariidae. Dendrocolaptidae. Part V: Tyrannidae. Part VI: Oxyruncidae. Pipridae. Cotingidae. Rupicolidae. Phytotomidae. Part VII: Corvidae. Paridae. Sittidae. Certhiidae. Chamaeidae. Cincilidae. Troglodytidae. Prunellidae. Mimidae. Turdidae. Zeledoniidae. Sylviidae. Part VIII: Alaudidae. Hirundinidae. Motacillidae. Bombycillidae. Ptilonotidae. Dulidae. Vireonidae. Vireonidae. Cyclarhidae. Laniidae. Sturnidae. Coerebidae. Compsothlypidae. Part IX: Tersinidae. Thraupidae. Part X: Icteridae. Part XI: Ploceidae. Catamblyrhynchidae. Fringillidae.

Note: This detailed descriptive catalogue was projected and partly produced by Charles B. Cory, but upon his death in 1921 the work was revised and continued by Charles E. Hellmayr. In the synonymies of this work the references are largely confined to the original descriptions (with type localities), the *Catalogue of birds of the British Museum, Ridgway's Birds of North and Middle America*, Washington, D.C., 1901-41 (see Index), monographs of families and genera, works containing colored plates of the various species, and important papers in relation to geographical distribution. A slight departure from the orthodox method is that of always giving the reference to the accepted original description first, so that the type locality, which follows it in parentheses, may be noted at a glance. Diagnostic descriptions are given of all species and subspecies not included in the standard works, Ridgway's catalogue mentioned above, and the British Museum catalogue. There are separate indexes in each volume and four colored plates. Each volume may be purchased separately, as follows: part I, no. 1, \$5.00; part II, no. 1, \$3.00; part II, no. 2, and parts III-IX, \$4.00 each, except part VI, \$2.00; part X, \$2.00; part XI, \$5.00. Two additional papers to complete Part I are scheduled for publication. These are not included in the prices quoted above.

HOCHBAUM, HANS ALBERT

The canvasback on a prairie marsh; drawings by the author. Washington, D.C.: The American Wildlife Institute, 1944. 201 p. illus. 22 cm. \$3.00. 1695a

Contents: The Delta marsh. Spring flight. Courtship. The nesting season. Nesting of other species. The brood season. The postbreeding season. Autumn and the shooting season. A discussion for management. Epilogue. Appendices: Nomenclature used in the text. Literature cited.

Note: Mainly a description of the life habits of twelve important species of ducks inhabiting the Delta (Manitoba) marsh in Canada, based largely on the observations of the author. The book is of interest to naturalists, sportsmen, and persons interested in the conservation of wildlife.

KORTRIGHT, FRANCIS H.

The ducks, geese and swans of North America, a vade mecum for the naturalist and the sportsman. Second edition. Illustrations by T. M. Shortt. Washington, D.C.: The American Wildlife Institute, 1943. 476 p. illus. (part col.) 22 cm. Buckram, U.S., \$4.50; foreign countries, \$5.00. 1695b

Contents: Introduction. Family tree of the ducks, geese and swans. The family, Anatidae. Duck topography. Glossary. Scientific nomenclature. Moults and plumages. Identification of a specimen in hand. Sex and age determination. Mating and nesting habits. Feeding habits. Longevity records. Speed of flight. Hybridism. Botulism. Lead poisoning. Migration routes and flyways. Banding waterfowl. Conservation. Loons, grebes, gallinules and coots. Map of North America. Descriptions, identifications and life stories of the ducks, geese and swans. Weights and measurements of wildfowl. Acknowledgments. Bibliography. Index.

Note: This comprehensive book is intended for sportsmen with scientific leanings. The author has endeavored to give information which will be adequate for year-round use, pointing out that

most books published to date identify waterfowl mainly by their spring plumages. The information given about each bird includes scientific name, common names, descriptions of adults of both sexes and the young, field marks, weights and measurements, and life stories mainly selected from works of naturalists and other writers.

MAY, JOHN BICHARD

The hawks of North America; their field identification and feeding habits. Illustrated by Allan Brooks and Roger Tory Peterson. New York: The National Audubon Society, 1935. 140 p. illus. (part col.) 25 cm. \$1.25. 1695c

Contents: Turkey vulture. Black vulture. California condor. White-tailed kite. Swallow-tailed kite. Mississippi kite. American goshawks. Sharp-shinned hawk. Cooper's hawk. Red-tailed hawk. Red-shouldered hawk. Broad-winged hawk. Swainson's hawk. Zone-tailed hawk. Sennett's white-tailed hawk. Short-tailed hawk. American rough-legged hawk. Ferruginous rough-leg. Harris's hawk. Mexican goshawk. Mexican black hawk. American golden eagle. Gray sea eagle. Bald eagles. Steller's sea eagle. Marsh hawk. American osprey. Audubon's caracara. Guadalupe caracara. Gyrfalcons. Prairie falcon. Peregrines. Aplomado falcon. Pigeon hawk. Merlin. Kestrel. American sparrow hawk. Appendixes: State laws relating to hawks. Reference bibliography.

Note: For the purposes of this illustrated handbook and guide for the amateur, a "hawk" is any member of the order of birds known as the *Falconiformes* or diurnal birds of prey. Thus the work includes the falcons, the butes, the kites, the eagles, the vultures, and the true hawks or accipiters. There are 41 full-page plates in color and a number of small-scale distribution maps. The bibliography lists 122 books and articles, mainly American, published between 1840 and 1935.

MAYR, ERNST

The birds of Timor and Sumba. New York: American Museum of Natural History, 1944. 65 p. illus. 27 cm. (American Museum of Natural History. Bulletin. Vol. 83, article 2) Paper, \$0.65. 1695d

Contents: Introduction. The birds of Timor. The birds of Sumba. Taxonomic notes on the birds of Timor and Sumba. Altitudinal variation on Timor. Notes on the zoogeography of Timor and Sumba. Bibliography.

Note: A systematic description of the species found in these two islands of the Malay Archipelago which hitherto have been little known by ornithologists. It is based on a collection of 1,354 bird skins from Timor and 608 from Sumba. Notes on the colonization of the islands by birds and the regional zoogeography as related to the origin of the avifauna are also included. Twenty-four papers and monographs on the subject are listed.

MAYR, ERNST

List of New Guinea birds: a systematic and faunal list of the birds of New Guinea and adjacent islands. New York: The American Museum of Natural History, 1941. 260 p. illus. 23 cm. \$2.00. 1696

Note: This is a comprehensive and carefully prepared list of 303 genera, 649 species, 1501 forms, giving their respective geographic ranges. No descriptions whatsoever are given of the birds themselves.

MURPHY, ROBERT CUSHMAN

Oceanic birds of South America; a study of species of the related coasts and seas, including the American quadrant of Antarctica, based upon the Brewster-Sanford collection in the American Museum of Natural History. Illustrated from paintings by Francis L. Jaques, photographs, maps, and other drawings. New York: American Museum of Natural History, 1936. 2 v. illus. (part col.) 27 cm. \$10.50. 1696a

Contents (abridged): Part I, The physical environment: The field-worker. Narrative of the Brewster-Sanford Expedition. Other field work concerned with the production of this report. The geographic background. The continent. Meteorology. The hydrology in relation to oceanic birds: The nutritional basis of marine life. The zones of surface water. Ocean currents. An ornithological circumnavigation of South America. The Caribbean coast. The Atlantic coast, Trinidad to the shoulder of Brazil. The Atlantic equatorial islands. Recife de Pernambuco to the Rio de la Plata. The Atlantic sub-tropical islands. Southern coasts, Gulf of La Plata to the Strait of Magellan. The Atlantic sub-Antarctic islands. The Scotia area. Eastern Fuegia to central Chile. The Pacific sub-tropical islands. The desert coast—Cochimbo to Point Pariñas. The Galápagos archipelago. Northern Peru to Panama. Islands of the tropical Pacific bight. Part II, The oceanic birds: Scope and method of treatment. Forms described as new in this book. Order Sphenisciformes: The penguins, family Spheniscidae. Order Procellariiformes: The albatrosses, family Diomedidae. The petrels, family Procellariidae. Order Pelecaniformes: The pelicans, family Pelecanidae. The boobies, family Sulidae. The cormorants, family Phalacrocoracidae. The man-o'-war birds, family Fregatidae. Order Anseriformes: The geese and ducks, family Anatidae. Order Charadriiformes: The oyster-catchers, family Haematopodidae. The phalaropes, family Phalaropidae. The sheath-bills, family Chionidae. The skuas and jaegers, family Stercorariidae. The gulls and terns, family Laridae. The skimmers, family Rynchopidae.

Note: This important work is the outgrowth of the first systematic field investigation devoted to sea birds in South America, the Brewster-Sanford Expedition of the American Museum of Natural History. There are 66 text illustrations; 76 plates and colored illustrations are the work of Francis L. Jaques. Over 10,000 references are given in the bibliography.

NAUMBURG, ELSIE MARGARET (BINGER)

The birds of Matto Grosso, Brazil; a report on the birds secured by The Roosevelt-Rondon Expedition, with field notes by George K. Cherrie. New York: American Museum of Natural History, 1930. 432 p. illus. (part col.) 25 cm. (American Museum of Natural History. Bulletin. Vol. LX) Paper, \$5.00. 1696b

Contents: Narrative of the expedition. The state of Matto Grosso. Interrelations of Campo and Amazonian faunas. Pelzel's localities within Matto Grosso limits. Distributional analysis of bird life and endemic species and subspecies of Matto Grosso. A list of the endemic species and subspecies of Matto Grosso. List of families. List of distinctively North American birds wintering in Brazil. Birds common to North and South America and breeding in Brazil. List of birds in the Roosevelt collection from Paraguay only. Localities of the Roosevelt expedition. Itinerary of the expedition. Ornithological bibliography of Matto Grosso. Distributional list of species and subspecies. Addenda. Index.

Note: A comprehensive, annotated catalogue based primarily on the collections secured during the expeditions headed by Colonels Roosevelt and Rondon between 1913 and 1916. Original description, type locality, list of specimens, ranges, genera, and comparative measurements are given for each species dealt with, and there are many photographs and color drawings of type specimens. A total of about 1,000 species are described.

PETERSON, ROGER TORY

A field guide to the birds, giving field marks of all species found in eastern North America. Text and illustrations in color and in black and white. Boston: Houghton Mifflin Company, 1934. 167 p. illus. (part col.) 19 cm. \$2.75. 1697

Contents (abridged): Loons. Grebes. Shearwaters. Fulmars. Storm petrels. Tropic-birds. Pelicans. Gannets. Cormorants. Darters. Man-o'-war birds. Herons. Wood ibises. Flamingoes. Swans. Geese. Ducks. Vultures. Kites. Hawks. Eagles. Harriers. Ospreys. Falcons. Grouse. Partridges. Pheasants. Turkeys. Cranes. Limpkins. Rails. Oyster-catchers. Plovers. Woodcocks. Avocets. Phalaropes. Jaegers. Gulls. Terns. Skimmers. Auks. Pigeons. Cuckoos. Owls. Goatsuckers. Swifts. Hummingbirds. Woodpeckers. Flycatchers. Larks. Swallows. Crows. Titmice. Nuthatches. Creepers. Wrens. Thrashers. Thrushes. Kinglets. Wagtails. Shrikes. Starlings. Vireos. Honey creepers. Wood warblers. Weaver finches. Meadow larks, blackbirds, and orioles. Tanagers. Home-reference suggestions. Index.

Note: This handbook is intended to supplement the standard

ornithological works and to serve as a guide, by means of which live birds may be readily identified by impressions, patterns, distinctive marks, and other features rather than by anatomical differences and measurements. There are 52 plates of drawings, some of which are in color, as well as text illustrations, which show prominent features of differentiation and identification for each of the species described.

PETTINGILL, OLIN SEWALL, JR.

The American woodcock, *Philohela minor* (Gmelin). With ten plates. Boston, Mass.: Boston Society of Natural History, 1936. 228 p. illus. (part col.) 30 cm. (Boston Society of Natural History. Memoirs. Vol. 9, no. 2) \$4.75. 1697a

Contents: Introduction: Methods of study. Acknowledgments. Explanations. The bird: Early history. Systematic position. Synonymy. Vernacular names. Description. Plumages. Pterylosis. Osteological notes. Range. Distribution and abundance. Food and feeding habits. Flight and voice. Miscellaneous activities. The life history: Spring migration. Breeding territory. Courtship. Mating. Nests. Eggs. Incubation. Embryological notes. Hatching. Young. Parent birds. Summer activities. Fall migration. The struggle for existence: The woodcock versus the environment. The present environment versus the woodcock. Summary. Bibliography.

Note: This monograph on the American woodcock was compiled by the author over a period of eight years from published records and from original studies in the field and in the laboratory. Its publication had two aims: "first, to make an already well-known avian personality more vivid, second, to give those persons in any way connected with the welfare of our present-day wild life a better understanding of a unique creature which may be used to full advantage in preserving it for future centuries."

PHILLIPS, JOHN CHARLES, AND FREDERICK C. LINCOLN

American waterfowl; their present situation and the outlook for their future. With illustrations by Allan Brooks and A. L. Ripley. Boston: Houghton Mifflin Company, 1930. 312 p. illus. 25 cm. \$4.50. 1697b

Contents: Part I, Our waterfowl and their habitats: The North American breeding areas. The North American wintering grounds. Migration. Part II, Adverse factors: Drainage and irrigation. Shooting as an adverse factor. Poisons, diseases, and parasites. Natural enemies. Oil pollution. Part III, Conservation: Conservation of waterfowl in general. Waterfowl food-plants. Part IV, Sport and sportsmen: Methods of taking ducks, with some remarks on the ethics of the various practices. Appendix: North American game waterfowl, their common names and ranges, with some notes on their present status and their body weights. Index.

Note: The main purpose of this book is to impress the sportsman with his responsibility towards the conservation of waterfowl in view of a decreasing game supply. The work is of importance, however, to all students of animal ecology and conservation in general, and to amateur naturalists as well. The ducks, geese, and swans of North America are discussed as a group, with emphasis upon the factors affecting their welfare in the light of national rather than sectional problems, and upon all of the various agencies operating against them.

RIDGWAY, ROBERT

The birds of North and Middle America; a descriptive catalogue of the higher groups, genera, species, and subspecies of birds known to occur in North America, from the arctic lands to the Isthmus of Panama, the West Indies and other islands of the Caribbean Sea, and the Galapagos Archipelago. Washington, D.C.: Government Printing Office, 1901-41. 9 v. illus. 24 cm. (Smithsonian Institution. United States National Museum. Bulletin no. 50, parts I-IX) Parts 1-8, o.p.; Part 9, \$0.40. 1698

Contents: Part I: Family Fringillidae: the finches. Part II: Family Tanagridae: the tanagers. Family Icteridae: the troupials. Family Cerebidae: the honeycreepers. Family Mniotiltidae: the wood warblers. Part III: Family Motacillidae: the wagtails and pipits. Family Hirundinidae: the swallows. Family Ampelidae: the waxwings. Family Ptilonotidae: the silky flycatchers. Family Dulidae: the palm chats. Family Vireonidae: the vireos. Family Laniidae: the shrikes. Family Corvidae: the crows and jays. Family Paridae: the titmice. Family Sittidae: the nuthatches. Family Certhiidae: the creepers. Family Troglodytidae: the wrens. Family Cinclidae: the dippers. Family Chamaeidae: the wren-tits. Family Sylviidae: the warblers. Part IV: Family Turdidae: the thrushes. Family Zeledoniidae: the wren-thrushes. Family Mimidae: the mockingbirds. Family Sturnidae: the starlings. Family Ploceidae: the weaver birds. Family Alaudidae: the larks. Family Oxyruncidae: the sharp-bills. Family Tyrannidae: the tyrant flycatchers. Family Pipridae: the manakins. Family Cotingidae: the chatterers. Part V: Family Pteroptochidae: the tapaculos. Family Formicariidae: the antbirds. Family Furnariidae: the ovenbirds. Family Dendrocolaptidae: the wood-hewers. Family Trochilidae: the humming birds. Family Micropodidae: the swifts. Family Trogonidae: the trogons. Part VI: Family Picidae: the woodpeckers. Family Capitonidae: the bar-bets. Family Ramphastidae: the toucans. Family Bucconidae: the puff birds. Family Galbulidae: the jacamars. Family Alcedinidae: the kingfishers. Family Todidae: the todies. Family Momotidae: the motmots. Family Caprimulgidae: the goatsuckers. Family Nyctibiidae: the potoos. Family Tytonidae: the barn owls. Family Bubonidae: the eared owls. Part VII: The Coccoyiformes: cuckoo-like birds. The Psittaciformes: parrot-like birds. The Columbiformes: pigeon-like birds. Part VIII: The Charadriiformes: plover-like birds. Part IX: Family Gruidae: the cranes. Family Rallidae: the rails, coots, and gallinules. Family Helimithidae: the sub-grebes. Family Eurypygidae: the sun-bitterns.

Note: In the nine volumes of this exhaustive work thus far published there have been treated in detail, with full descriptions and synonymies, besides the families mentioned above and the higher groups to which they belong, 667 genera and 2,578 species and subspecies, besides 220 extralimital genera and 626 extralimital species and subspecies whose principal characters are given in the keys and whose principal synonymy is given in footnotes. Upon the author's death in 1929 the work was continued in Part IX and Part X (in preparation) by Herbert Friedmann. The work is illustrated with line drawings showing anatomical details, and there are separate indexes in each volume.

ROBERTS, THOMAS SADLER

The birds of Minnesota. Illustrated with ninety-two color plates by Allan Brooks, George Miksch Sutton, Walter Alois Weber, Francis Lee Jaques, Walter John Breckenridge, including one plate by the late Louis Agassiz Fuertes. Second edition, revised. Minneapolis: The University of Minnesota Press, 1936. 2 v. illus. (col.) 28 cm. \$15.00. 1698a

Contents (abridged): Volume I. Review of ornithology in Minnesota: Acknowledgments. Introduction: The geography of Minnesota. Boundaries. Topography. Lakes and streams. Vegetational regions. Climate. A synopsis of bird-life of Minnesota: Minnesota as a home for birds. The winter bird-life of Minnesota. Some changes in the bird-life of Minnesota in recent years. The migration of Minnesota birds. A brief nature calendar. Table of dates of arrival and departure of 100 species of birds. Conservation of birds in Minnesota: Minnesota laws relating to non-game birds. Birds in relation to man. Mortality among birds. Bird songs and calls. Bird banding, by Frederick C. Lincoln. General comments and explanation. A systematic account of the birds of Minnesota. Appendix. Volume II: Systematic account continued. Keys and descriptions for the identification of Minnesota birds. Bibliography. Index to bibliography. Appendix. General index.

Note: This handsomely illustrated and authoritative work presents an annotated systematic account of every species of bird life found in Minnesota. The classification and nomenclature followed are those of the fourth edition of the *Checklist of the American Ornithologists Union*, Washington, D.C., 1931, o.p. The second edition presents extensive changes in the sequence and names of both major and minor groups in order to bring the work abreast of new developments between 1932 and 1936. The work treats of 329 species of birds, and 32 additional subspecies distributed in 17 major groups or orders, and 54 families, 21 of which belong to a single order, the Passeriformes. Each entry is extensively detailed yet sufficiently free from technical terminology to interest the amateur bird-lover.

There are 612 black-and-white illustrations and an annotated bibliography of about 900 works on Minnesota ornithology.

SWARTH, HARRY SCHELWALD

The avifauna of the Galapagos Islands. San Francisco: California Academy of Sciences, 1931. 299 p. illus. 25 cm. (California Academy of Sciences. Occasional papers. Vol. xviii) Paper, \$3.00. 1699

Contents: Introduction: Scope of this report. Historical. Features of the Galapagos avifauna. Check-list of Galapagos birds. Accounts of the species. Literature cited. Index.

Note: This monograph considers every bird species with a valid claim to inclusion in the Galapagos list, together with the four resident land birds of Cocos Island, Costa Rica. Manner of treatment is as follows: (1) the accepted name of the species; (2) a synonymy, not intended to be complete, but giving citations to such publications as contain first-hand facts; (3) data regarding type specimens, including all forms previously described for this region; (4) habitat; (5) number of specimens collected. There are a number of statistical charts and tables and several maps. The list of references covers about 140 titles from 1837 to 1930.

TODD, WALTER EDMOND CLYDE

Birds of western Pennsylvania. With twenty-two plates in color illustrating 118 species from the original drawings by George Miksch Sutton. Pittsburgh, Pa.: University of Pittsburgh Press, 1940. 710 p. illus. (part col.) 29 cm. \$5.00. 1699a

Contents (abridged): Part I: Introduction. Part II, Discussion of birds by family and species: Gaviidae. Colymbidae. Hydrobatidae. Pelecanidae. Phalacrocoracidae. Ciconiidae. Anatidae. Cathartidae. Accipitridae. Falconidae. Tetraonidae. Percidae. Meleagrididae. Gruidae. Rallidae. Charadriidae. Scolopacidae. Recurvirostridae. Phalaropodidae. Stercorariidae. Laridae. Alcedidae. Columbidae. Psittacidae. Cuculidae. Tytonidae. Strigidae. Caprimulgidae. Micropodidae. Trochilidae. Alcedinidae. Picidae. Tyrannidae. Alaudidae. Hirundinidae. Corvidae. Paridae. Sittidae. Certhiidae. Troglodytidae. Mimidae. Turdidae. Sylviidae. Motacillidae. Bombycillidae. Laniidae. Vireonidae. Compothylpidae. Icteridae. Thraupidae. Fringillidae. Gazetter. Bibliography. Index of bird names.

Note: This illustrated catalogue containing colorful accounts of more than 300 species and subspecies is intended to serve the threefold purpose of encouraging a widespread interest in nature in general and in birds in particular, of extending the knowledge of the distribution of birds in eastern North America, and of providing descriptive accounts of the birds occurring in western Pennsylvania. The area covered ranges from the Maryland-West Virginia line to the New York line, and comprises about 24,500 square miles. Description, range, migration, behavior, habits, habitat, and related data are given for each species or variety treated, including references to the original literature. The work is intended as much for the student and layman as for the professional ornithologist, and while remaining scrupulously accurate it embodies some of the author's personal philosophy and humor. The color illustrations are very well reproduced in aquatone and add much to the book's value as a reference source. The extensive bibliography of approximately 1,200 references comprises all titles found up to 1940 dealing with the birds of western Pennsylvania except articles in sportsmen's journals.

WETMORE, ALEXANDER, AND BRADSHAW H. SWALES

The birds of Haiti and the Dominican Republic. Washington, D.C.: The Smithsonian Institution, 1931. 483 p. illus. 25 cm. (Smithsonian Institution. United States National Museum. Bulletin no. 155) \$1.00. 1700

Contents: Introduction. Physiography. Historical account of ornithological investigations. Discussion of the avifauna. Recommendations regarding further studies. Acknowledgments. Method of treatment. Annotated list: Colymbiformes. Procellariiformes. Pelecaniformes. Ciconiiformes. Anseriformes. Falconiformes. Galliformes. Gruiformes. Charadriiformes. Columbiformes. Psittaciformes. Cuculiformes. Strigiformes. Caprimulgiformes. Micro-

podiformes. Trogoniformes. Coraciiformes. Piciformes. Passeriformes. Bibliography. Index.

Note: An annotated systematic description of the avifauna of the region. With each of the forms treated there is given the current scientific name, with the authority, followed by the usual English name and the names current locally in Hispaniola in Spanish, French, and Creole, where these are known. A brief synonymy is given for each species described, together with a brief statement as to its characteristics and occurrence. There are 26 plates, of which nine are reproductions of drawings.

ZIMMER, JOHN TODD

Birds of the Marshall Field Peruvian expedition, 1922-1923. Chicago: Chicago Natural History Museum, 1930. 250 p. illus. 24 cm. (Chicago Natural History Museum. Publication 282. Zoological series. Vol. xvii, no. 7) Paper, \$1.50.

1700a

Note: A report and descriptive catalogue of Peruvian birds secured during the course of the expedition's work, with comparative notes on allied species or subspecies from other parts of Peru or from adjoining countries. Eight new forms are described. The work is based on a study of the 1,497 specimens collected by the author at altitudes varying from 1,100 feet to 12,700 feet. In the descriptions, capitalization of the names of colors indicates direct comparison with Robert Ridgway's *Color standards and color nomenclature*, Washington, D.C., 1912. There are indexes of genera and species.

Mammals

ALLEN, GLOVER MORRILL

Bats. Cambridge, Mass.: Harvard University Press, 1939. 368 p. illus. 23 cm. \$4.00.

1701

Contents: Bats in folklore. Bats, gods, and men. Some strange uses for bats. Bats as pets. Bats as food. Where bats hide. What bats live by. Bat flowers. Wings in the dark. Color in bats. Bats' teeth and their meaning. An ancient lineage. The geographical distribution of bats. Social habits of bats. Breeding habits and young of bats. Migrations of bats. Hibernation of bats. The enemies of bats. The parasites of bats. Bats in relation to disease. The caves of Yporanga. Bibliography. Index.

Note: A detailed but non-technical account of the life, habits, distribution, and general characteristics of the only mammal which has the power of flight. The author points out that although bats have been known from earliest times to most of us they are still a strange and mysterious animal about which the average person knows very little. Because of the great diversity of bat species and the lack of sufficient common names, the author employs the Latin or scientific names in most instances. The literature and investigations of the field are summarized within each chapter. There are reproductions of many original photographs of bats, and the bibliography contains about 250 references.

BENEDICT, FRANCIS GANO

The physiology of the elephant. Washington, D.C.: Carnegie Institution of Washington, 1936. 302 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 474) Paper, \$2.25; cloth, \$3.00.

1702

Contents (abridged): Elephants studied. Chronology of the research. Techniques employed. Discussion of results: Age and length of life. Habits. Temperament. Breeding habits. Hearing. Physical appearance. Physical characteristics. Respiration rate. Ventilation of lungs. Heart rate. Body temperature. Food. Rate of food passage through intestines. Nitrogen balance. Gaseous metabolism. Salient facts regarding the physiology of the elephant. Bibliographies. Index.

Note: A report of observations made regarding ages, heights, body girths, body weights, muscular activity, temperament, and habits of sleep of a female Indian elephant. Careful measurements were obtained of the respiration rate, volume of ventilation of the lungs, heart rate, and body temperature (feces and urine temperatures). The unique feature of the investigation was a study of the respiratory exchange (oxygen consumption, respiratory quotient, methane production, and water vapor output) in a specially constructed respiration chamber.

BINGHAM, HAROLD CLYDE

Gorillas in a native habitat. Report of the joint expedition of 1929-30 of Yale University and Carnegie Institution of Washington for psychobiological study of mountain gorillas (*Gorilla beringei*) in Parc National Albert, Belgian Congo, Africa. Washington, D.C.: Carnegie Institution of Washington, 1932. 66 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 426) Paper, \$2.00; cloth, \$3.00.

1703

Contents (abridged): Historical and preparatory developments. Procedure in the field. Results: Feeding behavior. Types of nests and sleeping behavior. Social behavior. Physical characteristics of a male gorilla. Summary and interpretation of results: Environment of gorillas. Terrestrial aspects. Arboreal activities. Comparison with chimpanzees. Social organization. Insight. Responses indicating receptivity. Conclusion. List of references.

Note: A report of observations on the mode of life of gorillas in their native habitat in the Parc National Albert, Belgian Congo, with numerous photographs taken in the gorilla forest.

BOLE, BENJAMIN PATTERSON, JR.

The quadrat method of studying small mammal populations. Cleveland, O.: Cleveland Museum of Natural History, 1939. 62 p. illus. 23 cm. (Cleveland Museum of Natural History. Scientific publications. Vol. v, no. 4) Paper, \$0.50.

1703a

Contents: Introduction. Quadrat work of investigators from Cleveland Museum. Field methods. Composition of the yields of different sizes and types of quadrats. Discussion. Populations (annotated list with preliminary discussion). List of references.

Note: Quadrats, which are used as a means of determining the abundance of animals in ecological studies, consist of squares of land of known area over which traps are set, the number varying according to the needs of the terrain; from the yield obtained per quadrat the number of animals per acre, per square mile, or any other larger area may be computed statistically. The present paper is an account of the results obtained by the Cleveland Museum over a period of years.

CASTLE, WILLIAM ERNEST, AND PAUL B. SAWIN

Contributions to the genetics of the domestic rabbit. Washington, D.C.: Carnegie Institution of Washington, 1932. 50 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 427) Paper, \$1.00; cloth, \$1.50.

1704

Contents: English and Dutch spotting and the genetics of the Hotot rabbit, by W. E. Castle. Albino allelomorphs of the rabbit with special reference to blue-eyed chinchilla and its variations, by Paul B. Sawin.

Note: These two papers offer proof based on original laboratory research that (1) the Hotot and the synthetic English-Dutch race of rabbits are of like genetic constitution, and (2) there exists at least three different chinchilla allelomorphs, making a total of six allelomorphs in the albino series of the rabbit. There are short bibliographies following each paper and 12 plates of photographs and drawings.

GORDON, KENNETH LLEWELLYN

The natural history and behavior of the western chipmunk and the mantled ground squirrel. Corvallis, Ore.: Oregon State College Press, 1943. 104 p. illus. 27 cm. (Oregon State College. Oregon State monographs. Studies in zoology. No. 5) Paper, \$0.75.

1704a

Contents: Introduction. Taxonomy. Description. Distribution. Biology. Ecology. Behavior. The little known. Bibliography.

Note: A brief but comprehensive monograph of the habitat, range, movements, food, water, reproduction, community organ-

ization, economic relations, sensory and reactive behavior, and related characteristics of the western chipmunk and mantled ground squirrel, based primarily on the genus and subgenus concerned rather than on species. Ninety-one references are listed in the selected bibliography. Tables of experimental data based on original behavior studies are also included.

GREENMAN, MILTON JAY, AND F. LOUISE DUHRING

Breeding and care of the albino rat for research purposes. Second edition, April, 1931. Philadelphia: The Wistar Institute of Anatomy and Biology, 1931. 121 p. illus. 25 cm. \$3.00.

1704b

Contents: Introduction: The white rat as a research animal. Colony building and equipment. Cages. Special experimental strain of albino rats. Food and feeding. Behavior. Breeding. Parasites. Diseases. Standards, reference tables. Transportation of living rats. Identification of individuals.

Note: In the first edition of this book the authors attempted to put into convenient form for the use of albino rat breeders, technicians, and others charged with the care of albino rats information which they had gained from their long experience in breeding albino rats in the Wistar Institute. New information which they had recorded regarding the natural history of this animal was also included. In this edition the results of recent experience in the preparation of foods, the control of food supply, deficiency diseases, improvement in buildings, cages, and other equipment have been added. The authors have also prepared a series of growth records to show how little, under uniform conditions, a large colony varies from established standards, yet how important it is to make weighings periodically of the entire colony in order to detect any decided drift in either direction. Methods followed for the improvement of the albino rat for research purposes are also indicated.

GRIFFITH, JOHN QUINTIN, JR., AND EDMOND J. FARRIS, EDITORS

The rat in laboratory investigation, by a staff of thirty contributors. 178 illustrations. Philadelphia: J. B. Lippincott Company, 1942. 488 p. illus. (part col.) 23 cm. \$7.50.

1705

Contents: Breeding of the rat, by Edmond J. Farris. General methods: handling, injection, restraint, etc., by John Q. Griffith, Jr. and W. A. Jeffers. Gross anatomy, by Eunice C. Greene. Experimental methods and rat embryos, by J. S. Nicholas. Dietary requirements, by Richard H. McCoy. Teeth, by Isaac Schour and Maury Massler. Digestive system, by Thomas E. Machella and J. Q. Griffith, Jr. Metabolism, by C. Jelleff Carr and John C. Grantz. Central nervous system, by W. A. Jeffers, J. Q. Griffith, Jr., and E. Roberts. Techniques for investigation of psychological phenomena in the rat, by George L. Kreezer. Circulatory system, by J. Q. Griffith, Jr., W. A. Jeffers, and E. Roberts. Use of the rat in the biologic assay of hormones, by Dwight J. Angle. Dosage of drugs for rats, by Harold G. O. Wolck and Donald R. Mathieson. Hematology—methods and standards, by Adolph J. Creskoff et al. Radiologic considerations, by E. P. Fendergrass et al. Surgery, by Dwight J. Angle et al. Histologic methods adapted for rat tissues, by W. H. F. Addison. Osseous system, by R. M. Strong. Eye of the albino rat, by W. E. Fry. Protozoan parasites, by D. H. Wenrich. Metazoan parasites, by Herbert L. Ratcliffe. Spontaneous diseases of laboratory rats, by Herbert L. Ratcliffe. Index.

Note: This book is primarily a book of techniques and procedures which have been proved satisfactory in the Wistar Institute of Anatomy and Biology and in other institutions. It has been prepared for all workers employing the rat in laboratory investigation. Although intended principally for original investigators, the methods and techniques will be of interest also to students, rat breeders, and technicians. As the editors point out, while the techniques have particular reference to the rat, they are applicable to laboratory work in general.

HOOTON, EARNEST ALBERT

Man's poor relations. Garden City, N.Y.: Doubleday, Doran & Company, Inc., 1942. 412 p. illus. 24 cm. \$5.00.

1706

Contents (abridged): Introduction: An anthropologist looks at the primates and then looks back at himself. Part I, Ape aristocrats: The extravert chimpanzee. The gorilla individualist. The reactionary orang-utan. The acrobatic gibbon. Part II, Totalitarian monkeys of the Old World: Baboon over-lords and underlings. Domineering macaques. Part III, New World democrats and proletarians: The communistic howler. The over-specialized spider monkey. Cebus, the monkey mechanic. Other New World monkeys. Part IV, Backward primates of the Old World: The retarded tarsier. The ghosts of Linnaeus. Part V, Man and his primate peers and inferiors: Sex and society, antics and semantics. Blood and relationship. Brains and behavior. Bones and body build. Extinct ancestors and collaterals. Evolutionary prospects. Bibliography. Index.

Note: A simplified and readable presentation for the intelligent layman and non-specialist of the results of researchers in primatology. The descriptions of the selected species are based on accurate research by leading authorities whose works the author has synthesized. A bibliography is provided for students and there are 73 illustrations.

KEELER, CLYDE EDGAR

The laboratory mouse; its origin, heredity, and culture. Cambridge, Mass.: Harvard University Press, 1931. 81 p. illus. 23 cm. \$1.50.

1706a

Contents: Introduction. Geographical distribution of the house mouse. Antiquity of the fancy mouse. Unit-characters (gene mutations) of the house mouse. Normal inheritance. Abnormal inheritance. The breeding of mice in laboratories. Bibliography.

Note: A brief account of the origin, history, distribution, and development of *Mus musculus*, including the nature of its variations, the hereditary transmission of its varietal characters, and the methods of rearing it suitable for the needs of laboratories, based on a survey of the extant literature. There are 36 text illustrations and 184 references in the bibliography.

MAIN, ROLLAND JOHN

The care of a small rat colony. St. Louis: The C. V. Mosby Company, 1939. 101 p. illus. 22 cm. \$2.00.

1707

Contents: Apologia. The rooms. Equipment. Cleaning and painting. Rearing, mating, and growth. Feeding. Economics. Disease and vermin. Notes on the assay of vitamin D milk. Daily routine. Appendix: bibliography. Index.

Note: This report on the rat colony at the Medical College of Virginia has been published for the benefit of persons who may wish to start such a colony. The author found that no previous publication was suited to the average need, and he had to learn what is contained in this book by the method of trial and error. The text is written simply enough to serve as a manual for a technician totally unfamiliar with rats, but the information is quite complete.

PAPERS ON MAMMALOGY. Published in honor of Wilfred Hudson Osgood. Chicago: Chicago Natural History Museum, 1941. 396 p. illus. 24 cm. (Chicago Natural History Museum. Publication 511. Zoological series. Vol. 27) Paper, \$3.00.

1708

Contents: The work of Wilfred Hudson Osgood, by Stanley Field. Personal appreciation, by Clifford C. Gregg. Pygmy sperm whale in the Atlantic, by Glover M. Allen. Mammals collected by the Vernay-Cutting Burma expedition, by H. E. Anthony. Cranial and dental characters of some South American Cervidae, by Angel Cabrera. The arteries of the forearm in carnivores, by D. Dwight Davis. A Pleistocene otter from Iowa, by Edward A. Goldman. Revision of the rodent genus *Microdipodops*, by E. Raymond Hall. The femoral trochanters, by A. Brazier Howell. On the identity of the porpoise *Sagmatias amblyodon*, by Remington Kellogg. Incisor tips of young rodents, by Barbara Lawrence. The races of the ocelot and the margay, by R. I. Pocock. Descriptions and records of neotropical bats, by Colin Campbell Sanborn. Index.

Note: A collection of 12 short technical papers on various aspects of mammalogy, prepared especially as a testimonial to the editor of the Museum's *Zoological series* and curator emeritus of the institution.

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#178

POOLE, ARTHUR JAMES, AND VIOLA S. SCHANTZ
Catalog of the type specimens of mammals
in the United States National Museum, includ-
ing the Biological Surveys collection. Wash-
ington, D.C.: The Smithsonian Institution, 1942.
705 p. 23 cm. (Smithsonian Institution. United
States National Museum. Bulletin no. 178)
\$1.25. 1709

Contents: Introduction. Order Artiodactyla: even-toed rumi-
nants. Order Carnivora: flesh-eaters. Order Cetacea: whales, por-
poises. Order Chiroptera: bats. Order Dermoptera: flying lemurs.
Order Hyracoidea: hyraxes. Order Insectivora: insect eaters.
Order Lagomorpha: hares, rabbits, pikas. Order Marsupialia:
marsupials. Order Perissodactyla: odd-toed ungulates. Order Pin-
nipedia: seals, walruses. Order Primates: lemurs, marmosets,
monkeys, apes, men. Order Rodentia: rodents. Order Xenarthra:
edentates (sloths, armadillos, anteaters). Missing type specimens.
Geographical guide to type localities. Collectors of the type
specimens of mammals in the United States National Museum,
including the Biological Surveys collection. Index.

Note: A systematic catalogue of the type specimens of recent
mammals in the United States National Museum collections,
recording a total of 2,824 specimens. A strictly alphabetical order
of arrangement is used and applied alike to orders, families,
genera, species and subspecies. The name of each genus, sub-
genus, species, and subspecies is recorded as in the original de-
scription, followed by a reference to the place and date of its
publication. References are added wherever changes have been
made by subsequent authors. These are followed by catalogue
number, nature of specimen, i.e. whether skin or skull, etc., age
and sex, locality, date of collecting, name of collector, and origi-
nal number of specimen from collector's field catalogue.

REICHARD, JACOB ELLSWORTH, AND H. S. JEN-
NINGS

1930

Anatomy of the cat. One hundred and sev-
enty-three original figures drawn by Louise
Burridge Jennings. Third and enlarged edition
with four new figures by Rush Elliott. New
York: Henry Holt and Company, 1935. 486 p.
illus. 22 cm. \$5.00. 1710

Note: A standard and widely used text in college courses in
biology. The present revision includes the following new material:
expanded discussion of the sympathetic system, including
minute structure; four new diagrammatic figures illustrating the
relations of the viscera to the pleural, pericardial and peritoneal
cavities and the gross and minute structure of the sympathetic
system; tabular summaries for reference and review. The au-
thors' *Dissection of the cat*, second edition, New York, 1935 is
furnished with this book and bound with it. Also, it is sold
separately at \$1.25.

RUCH, THEODORE CEDRIC

✓ Bibliographia primatologica; a classified bib-
liography of primates other than man, with an
introduction by John F. Fulton. Springfield, Ill.:
Charles C. Thomas, 1941. 269 p. 28 cm. (Yale
University. School of Medicine. Yale Medical
Library. Historical Library. Publication no. 4)
\$8.50. 1711

Contents (abridged): Historical introduction: a bibliography
of primate biology to 1800. Anatomy: embryology. General
morphology. Circulatory and lymphatic systems. The respiratory
system. The digestive system. The endocrine glands. The uro-
genital system. Osteology, arthrology and syndesmology. The
teeth. Muscular system and integument. Nervous system and
sense organs. Physiology and pharmacology: Digestion, nutrition
and metabolism. Kidney and water balance. Endocrine glands.
Animal heat. Reproduction and development. Muscles and skin.
Nervous system and sense organs. Pharmacology. Psychobiology:
Receptive capacities. The action system. Maturation of behavior.
Motivation of behavior. Modifiability of behavior. Intelligent be-
havior, insight, ideation. Reproductive and social behavior. Mis-
cellaneous. Observational psychobiology. Miscellaneous bibliog-

raphies. Appendix: A key to abbreviations not in the World list
of scientific periodicals. Index of authors.

Note: A comprehensive international list of published papers
on the anatomy, physiology, pharmacology, and psychobiology
of monkeys and apes. The anatomical, physiological, and phar-
macological papers are classified primarily according to the body
systems, while the section on psychobiology is organized by broad
subject headings. The volume contains 4,630 bibliographic entries
serially numbered, and with skillfully chosen subheadings and
adequate cross-references. The entries show the work of over
2,000 authors (inclusive of 1939 literature). There is an author
index of 27 pages. To the usual reference material are added
many facts in abbreviated form; the proportion of the article
given to primate material when other topics are considered; notes
on plates, figures, tables, and references; and the genera of the
animals studied.

SNELL, GEORGE DAVIS, EDITOR

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Biology of the laboratory mouse, by the staff
of the Roscoe B. Jackson Memorial Laboratory,
Clarence C. Little, director, George D. Snell,
editor, and others, with a chapter on Infectious
diseases of mice, by J. H. Dingle. Philadelphia:
The Blakiston Company, 1941. 497 p. illus.
23 cm. \$7.00. 1712

Contents: Early embryology of the mouse. Reproduction. His-
tology. Spontaneous neoplasms in mice. Gene and chromosomes
mutations. The genetics of spontaneous tumor formation. The
genetics of tumor transplantation. Endocrine secretion and tumor
formation. The milk influence in tumor formation. Inbred and
hybrid animals and their value in research. Parasites. Infectious
diseases in mice. Care and recording.

Note: Information about the mouse, widely scattered through
the literature, has been assembled in this volume. Gaps in the
literature have been filled in by special research projects. Empha-
sis has been placed on established facts useful to the research
worker.

Mammals of Various Regions

ALLEN, GLOVER MORRILL

A checklist of African mammals. Cambridge,
Mass.: Museum of Comparative Zoology at
Harvard College, 1939. 763 p. 24 cm. (Harvard
College. Museum of Comparative Zoology. Bul-
letin. Vol. LXXXIII) Paper, \$10.00. 1712a

Note: A complete checklist of the names applied to African
mammals, intended to include all those currently regarded as
valid as well as all synonyms through July, 1938, so far as
possible. The majority of the references have been carefully
checked with the originals and the citations of names are as
originally given, with their type localities following each. The
area covered is the continent of Africa west of the Suez Canal,
with the inclusion of Madagascar and the Mascarene Islands
and the seas adjacent to the continents. Domesticated animals,
unless feral, and the human races are purposely omitted, but with
these exceptions the list is purported to include all species known
to have lived within historic times. There are numerous cross-
references in the detailed index.

ALLEN, GLOVER MORRILL

Extinct and vanishing mammals of the West-
ern Hemisphere, with the marine species of all
the oceans. Washington, D.C.: American Com-
mittee for International Wild Life Protection,
1942. 620 p. illus. 24 cm. (American Committee
for International Wild Life Protection. Special
publication no. 11) Paper, \$3.50; cloth, \$4.50.
1712b

Contents: Introduction. North America and the West Indies: Order Insectivora. Order Chiroptera. Order Edentata. Order Rodentia. Order Carnivora. Order Artiodactyla. South America: Order Edentata. Order Rodentia. Order Carnivora. Order Perissodactyla. Order Artiodactyla. Oceanic mammals: Order Carnivora. Order Pinnipedia. Order Cetacea. Order Sirenia. Bibliography. Index.

Note: A descriptive catalogue covering those species of New World mammals that have been exterminated or seriously depleted by human agency during the past four and a half centuries, and also those oceanic species of world-wide distribution, mainly cetaceans, seals, and sea-lions, that within the historic period have suffered similar reduction. The method followed is to give the common name, the current Latin name, reference to original description with type locality, the important synonyms, and references to figures of the exterior or the skull, or both. Description, range, present status, commercial use if any, protective measures, and other related facts are included. The bibliography contains about 600 references to the world literature.

ALLEN, GLOVER MORRILL

The mammals of China and Mongolia. New York: The American Museum of Natural History, 1938-40. 1 v. in 2. illus. 28 cm. (Central Asiatic expeditions. Natural history of Central Asia. Vol. 11) \$10.00. 1713

Contents (abridged): Part I, General introduction. Systematic account: Insectivora, Chiroptera, Primates, Carnivora, Pinnipedia, Cetacea, Nomarthra, Lagomorpha. Complete bibliography. Part II, Systematic account (continued): Rodentia, Artiodactyla, Perissodactyla, Sirenia. Complete index.

Note: A summary of available knowledge of the mammalian fauna of China and Mongolia. Keys are provided for the identification of the various orders, families, genera and species. For each species or order, the work gives the accepted Latin name, important synonymy, a description of the external and cranial characteristics, measurements, notes on nomenclature, known facts of occurrence and habits within the area treated, and a list of localities from which specimens have been examined by the writer.

BAILEY, VERNON

The mammals and life zones of Oregon. Washington, D.C.: Government Printing Office, 1936. 416 p. illus. 23 cm. (United States. Bureau of Biological Survey. North American fauna. No. 55) Paper, \$0.75. 1713a

Contents: Introduction. Life zones of Oregon. Mammals of Oregon: Hoofed mammals. Rabbits and conies. Gnawing mammals. Flesh eaters. Seals, sea lions, sea elephants, and walruses. Whales and porpoises. Insect-eating mammals. Winged mammals—bats. Marsupials. Bibliography. Glossary of Indian names of mammals. Index.

Note: This report is based primarily upon field work of the Bureau of Biological Survey carried on by the author and others through varying periods between 1888 and 1936. For each species of animal is given such information as: type, general characters, distribution and abundance, general habits, breeding habits, food habits, and economic status.

BAILEY, VERNON

Mammals of New Mexico. Washington, D.C.: Government Printing Office, 1931. 412 p. illus. 25 cm. (United States. Bureau of Biological Survey. North American fauna. No. 53) Paper, \$1.00. 1714

Contents: Introduction: Mammal collectors and collections. Geographic variation. Useful and injurious species. Game protection. Control of noxious species. Problems in mammalian study. Annotated list of species: Opossums. Armadillos. Pecaries. Bison and mountain sheep. Pronghorned antelope. Deer and elk. Rabbits and hares. Rock conies. Squirrels, chipmunks, prairie dogs, and woodchucks. Rats and mice. Beavers. Porcupines. Jumping mice. Pocket gophers. Kangaroo rats and pocket mice. Cats. Wolves and foxes. Wolverenes, martens, otters, minks, ferrets, weasels, skunks, and badgers. Coonmistsles. Coatis and raccoons. Bears. Shrews. Bats. Literature cited. Index.

Note: This volume presents a description of each species of mammal found in New Mexico, with notes of distribution, habits,

food, and economic status. There are 22 plates containing photographic illustrations. It is a companion volume to Mrs. F. M. Bailey's *Birds of New Mexico*, Santa Fe, New Mexico: New Mexico Department of Game and Fish, 1928, 807 p.

BOLE, BENJAMIN PATTERSON, JR., AND PHILIP N. MOULTHROP

The Ohio recent mammal collection in the Cleveland Museum of Natural History. Cleveland, O.: Cleveland Museum of Natural History, 1942. 98 p. 23 cm. (Cleveland Museum of Natural History. Scientific publications. Vol. v, no. 6) Paper, \$1.00. 1714a

Note: A systematic catalogue giving descriptions of every species of recent mammal recorded for the state, with but nine exceptions, based on the museum's collection of 7,000 specimens. Scientific name, common name, name of original describer and publication in which original description appeared, type locality, description, and specimens examined are listed. There are no illustrations. Forty-five references are given in the bibliography.

BOONE AND CROCKETT CLUB

North American big game; a book of the Boone and Crockett Club, compiled by the Committee on Records of North American Big Game, Alfred Ely, chairman, H. E. Anthony, and R. R. M. Carpenter. Published with the co-operation of the National Collection of Heads and Horns of the New York Zoological Society and American Museum of Natural History. New York: Charles Scribner's Sons, 1939. 533 p. illus. 23 cm. \$7.50. 1714b

Contents: Big game of the Pleistocene. Vanished game. Conservation of big game. Horns and antlers. Rating of trophies. Rifles and ammunition. Hunting with bow and arrow. Photographing big game. Flashlight photography. The care of trophies in the field. The care of mounted trophies. The deer. The wapiti. The caribou. The moose. The mountain sheep. The Rocky Mountain goat. The pronghorn. The muskox. The bison. The bear. The puma. The jaguar. The walrus. Tabulations.

Note: Forty-six articles on big game hunting by 35 specialists in various branches of the subject. The tabulation at the end of the volume gives statistics of size and measurements of big game killed, by whom, date, and locality. Technique of hunting is emphasized, with numerous hints to the amateur, plus zoological notes on habitat, appearance, tracks, distribution, and related data.

BORELL, ADREY EDWIN, AND MONROE D. BRYANT

Mammals of the Big Bend area of Texas. Berkeley, Calif.: University of California Press, 1942. 61 p. illus. 27 cm. (University of California publications in zoology. Vol. 48, no. 1, p. 1-62) Paper, \$0.75. 1714c

Contents: Introduction. Physical character of the area. Associations. Place names. Accounts of species. Mammalian fauna in relation to life zones. Geographic affinities of the mammalian fauna. Summary. Literature cited. Plates.

Note: This paper is a joint contribution from the National Park Service and the Museum of Vertebrate Zoology of the University of California. Its major portion describes 56 mammalian species found in the Big Bend area of southwestern Texas, a region of 780,000 acres on the Rio Grande ranging in altitude from 1700 to 7835 feet. The work is based upon field studies made in 1936 and 1937 when the area was being proposed as a national park.

COLBERT, EDWIN HARRIS

Siwalik mammals in the American Museum of Natural History. Philadelphia: The American Philosophical Society, 1935. 401 p. illus. 30

cm. (American Philosophical Society. Transactions. New series, Vol. 26) \$5.00. 1714d

Contents (abridged): Part I, Introduction: Previous publications dealing with American Museum Siwalik vertebrates. Historical review. Part II, Geological considerations: Geography of the Siwalik Hills and the Salt Range. General geologic considerations of the Siwalik beds. Part III, Mammalian faunas of the Siwalik series. Part IV, American Museum Siwalik fossil localities. Part V, Systematic descriptions and discussions: Primates. Rodentia. Lagomorpha. Carnivora. Tubulidentata. Proboscidea. Perissodactyla. Artiodactyla. The migrations of certain mammals to and from the Siwaliks. Part VI, General summary and conclusions. Bibliography. Index.

Note: The collection of Siwalik mammals in the American Museum of Natural History on which this study is based was made by Dr. Barnum Brown in two regions in the Punjab, one in the Siwalik Hills between the Sutlej and the Jumna rivers, the other in the Salt Range between the Indus and the Jhelum rivers. In the present work the author's purpose was to make a thorough study of certain of the mammalian orders which comprise the bulk of this collection, not only by means of his own researches but also by correlating his work with that of other authors. Studies of the Proboscidea from this collection by Professor Henry Fairfield Osborn, of the three species of *Dryopithecus* which it contains, by Dr. William King Gregory and Dr. Milo Hellman, and of the Bovidae by Dr. Guy E. Pilgrim, have been summarized, although attention has been directed chiefly to all the other mammalian groups in this collection. The several Siwalik faunas constitute an abundant assemblage of mammalian genera and species. From the field studies of Dr. Brown it was possible to make a careful record of the geographic position and the stratigraphic level of nearly all of the fossils in the collection and this record has been of great aid in the study of the faunal sequences and in the formulation of views as to the phylogenetic relationships of the various Siwalik mammals.

DAVIS, WILLIAM B.

The recent mammals of Idaho. Caldwell, Idaho: The Caxton Printers, Ltd., 1939. 400 p. illus. 23 cm. (Contribution from the Museum of Vertebrate Zoology, University of California) \$5.00. 1715

Contents: Geography of the state. Floral provinces. Distributional areas in Idaho. Problems of distribution in Idaho. Museums containing type specimens. Type localities in Idaho. Gazetteer of localities. Mammals of Idaho by groups. Plan of procedure in species accounts. Lists of counties in Idaho. Accounts of species: Insectivora. Chiroptera. Carnivora. Rodentia. Lagomorpha. Artiodactyla. Abstract. Literature cited. Index.

Note: Mainly a systematic description of the families, genera, and species of the five orders of mammals indigenous to Idaho, with classification, description, distribution, scientific and common name, and record of occurrence for each type specimen included.

GARRETSON, MARTIN S.

The American bison; the story of its extermination as a wild species and its restoration under Federal protection. New York: New York Zoological Society, 1938. 254 p. illus. 22 cm. \$1.50. 1716

Contents: Origin, species, nomenclature. First discovery, distribution. Appearance, habits and food. Migration, trails, number of bison. Natural enemies, diseases. Extermination east of the Mississippi. Extermination west of the Mississippi. Extermination after the Civil War. Some notable bison hunts. "Buffalo Bill," cattlemen and buffalo. Slaughter of the northern herd. By-products of the buffalo. Buffalo and the Indians. Domestication of the buffalo. Expeditions for museums. Last remnants and new herds. The American Bison Society. The buffalo safe from extinction. Appendix. Index.

Note: In this book the author has told the history of the American bison from the time of the discovery of the great herds, through the period when they were almost exterminated, to the present when it seems certain that the efforts of the United States government and organizations interested in preserving the species have succeeded. The appendix contains bibliographical references and notes on source material. The treatment is designed for the general reader.

GRINNELL, JOSEPH

Mammals of Death Valley. San Francisco, Calif.: California Academy of Sciences, 1937. 55 p. 25 cm. (California Academy of Sciences. Proceedings. 4th series, Vol. xxiii, no. 9, August 7, 1937) \$0.60. 1716a

Note: This account pertains exclusively to that portion of Death Valley, Inyo county, California, which lies below sea-level. The materials on which the paper is chiefly based are contained in the Museum of Vertebrate Zoology and were gathered by the author and persons who accompanied him on three trips made in 1917, 1920, and 1933. The specimens number 305 and represent the 25 species known to date from that area, with the exception of *Homo*. Localities have been described and some peculiarities of the natural history of the area discussed in preceding papers on the birds: California Academy of Sciences, *Proceedings*, 4th series, Vol. 13, 1923, p. 43-109, and *Condor*, Vol. 36, 1934, p. 67-72.

HAMILTON, WILLIAM JOHN

American mammals; their lives, habits, and economic relations. New York: McGraw-Hill Book Company, Inc., 1939. 434 p. illus. 23 cm. \$3.75. 1717

Contents: The ancestry of mammals. Classification. Some characters of mammals and their uses. Adaptations. Food. Storage. Reproduction and early life. The home of mammals. Hibernation. Migration. Mammal populations. Behavior. Distribution. Useful mammals. Injurious mammals. Game mammals. Fur-bearing mammals. Predatory mammals.

Note: Instead of giving specific accounts of each species, this book offers an ecological approach, illustrating how mammals are adapted to their environment and discussing their characters, distribution, habits, economic relations, and esthetic value. The treatments of ancestry, adaptations, food, storage, reproduction and early life, home of mammals, hibernation, migration, etc., are thorough.

HAMILTON, WILLIAM JOHN

The mammals of eastern United States, an account of recent land mammals occurring east of the Mississippi. With thirty portraits by Earl L. Poole. Ithaca, New York: Comstock Publishing Company, Inc., 1943. 432 p. illus. 24 cm. (Handbooks of American natural history, edited by A. H. Wright. Vol. II) \$4.00. 1718

Contents: Introduction. Key to orders of eastern mammals. Marsupialia (opossums). Insectivora (moles and shrews). Chiroptera (bats). Carnivora (flesh eaters). Rodentia (rodents or gnawing mammals). Lagomorpha (hares and rabbits). Artiodactyla (deer, pig, sheep, etc.). Xenarthra (American edentates). Literature of mammalogy. Index.

Note: A guidebook which describes and gives a brief life history of each of the land mammals found in the entire area east of the Mississippi. Two hundred fifty-three species and subspecies are covered. The numerous maps outline the distribution of various mammals in the area covered. Of interest to the layman as well as to the professional zoologist.

HOWELL, ARTHUR HOLMES

Revision of the North American ground squirrels, with a classification of the North American Sciuridae. Washington, D.C.: Government Printing Office, 1938. 256 p. illus. (part col.) 23 cm. (United States. Bureau of Biological Survey. North American fauna. No. 56) Paper, \$0.40. 1719

Contents: Introduction. Geographic distribution of the ground squirrels. Habits and economic relations. Classification of the North American Sciuridae. Revision of the genus *Citellus*. Bibliography. Index.

Note: This publication consists of an extensive descriptive revision of the 31 North American species of the genus *Citellus*,

together with a classification of the entire North American Sciuridae family. It presents the results of a study of the systematic relationships and geographical distribution of the American members of the genus. Among the illustrations are eleven colored plates reproduced from drawings of different species of ground squirrels by Ernest Thompson Seton.

JACKSON, HARTLEY HARRAD THOMPSON

Big-game resources of the United States, 1937-1942. Washington, D.C.: Government Printing Office, 1944. 56 p. illus. 23 cm. (United States. Fish and Wildlife Service. Research report 8) Paper, \$0.15. 1720

Contents: Abstract. Introduction. Brief history of big-game estimates. Big-game inventory and sources of information. Season for making counts. Some methods of making counts. Big-game inventory of the United States, 1941. Population trends in principal big-game animals: Deer. Woodland caribou. American elk. Moose. Prong-horned antelope. Bighorn sheep. Mountain goat. Collared peccary. Black bear. Grizzly bear. American bison, or buffalo. Introduced species. Population trends in big game on different land-classification areas: Changes in big-game populations of states, 1940-41. Changes in big-game population on land-control areas. Game kill. Literature cited.

Note: This report reviews the results of the annual inventories of big-game animals compiled by the United States Fish and Wildlife Service, 1937-41.

NELSON, EDWARD WILLIAM

Wild animals of North America. Intimate studies of big and little creatures of the mammal kingdom. With illustrations from paintings by Louis Agassiz Fuertes and drawings of tracks by Ernest Thompson Seton. Washington, D.C.: The National Geographic Society, 1930. 254 p. illus. (part col.) 25 cm. \$4.00. 1721

Contents: General characteristics and origin of the mammal fauna. The larger species and some of their predecessors. The smaller mammals and their ways. The classification of mammals: The opossums, moles, shrews, and bats. Bears, raccoons, ring-tailed cats, martens, fisher, mink, black-footed ferret, wolverine, land and sea otters, skunks and badgers. Red and kit foxes, gray foxes, Arctic and blue foxes, coyotes and wolves, jaguar and tiger cats, mountain lion, eyra, and lynx. Fur-bearing and other seals, and walrus. Woodchucks, ground squirrels, prairie dogs, and chipmunks. Tree squirrels, flying squirrels, pocket gophers, pocket mice, wood rats, lemmings, and tree mice. Red-backed mice, meadow mice, pine mice, muskrats, house rats and mice, mountain beaver, jumping mice, and American porcupines. Conies, hares, cottontails, marsh rabbits, brush rabbits, and other rabbitlike mammals. Even-toed hoofed mammals: Collared peccary, American elk, black-tailed deer, mule deer, Virginia white-tailed deer, Arizona white-tailed deer, moose. Woodland and barren ground caribou, pronghorn antelope, American bison, musk oxen; Rocky Mountain, Dall, and stone sheep; Rocky Mountain goat. Armadillos, manatees, right whales, sperm whales, killer whales, and white whale.

Note: This volume of pictures and descriptions of North American wild animals combines in revised form the text and illustrations of two entire numbers of the *National geographic magazine* which were devoted to the larger mammals and the smaller mammals of North America, respectively. There are 120 animal descriptions written in non-technical style and excellent illustrations in color.

ORR, ROBERT THOMAS

The rabbits of California. Joint contribution from the Museum of Vertebrate Zoology of the University of California and the California Academy of Sciences. San Francisco, Calif.: California Academy of Sciences, 1940. 227 p. illus. 25 cm. (Occasional papers of the California Academy of Sciences. No. 19) Paper, \$3.50. 1722

Contents: Introduction. Materials. Measurements and weights. Geographical variation. Analysis of characters. Secondary sexual

variation. Pelage. Abnormal coloration. Molts. Life history. Diagnostic key to the Leporidae of California. Species accounts. Literature cited.

Note: Both systematic and life studies of the seven species of the family Leporidae which are known to occur in California are presented in this monograph. Speculations concerning reasons for racial trends or specific constancies as related to the topographic, climatic, and vegetational conditions of the area are offered for further study. The work is based on the study of 1158 specimens and upon the literature of the field. The list of citations contains 113 references to pertinent world literature published between 1836 and 1936.

OSGOOD, WILFRED HUDSON

The mammals of Chile. Chicago: Chicago Natural History Museum, 1943. 268 p. illus. 24 cm. (Chicago Natural History Museum. Publication 542. Zoological series. Vol. 30) Paper, \$1.75. 1722a

Contents: Introduction. Acknowledgments. History. Physiography and climate. Zones and faunal areas. Derivation of Chilean mammals. Endemism. Insular faunas. Collections in Chilean National Museum. Methods. List of mammals of Chile. Key to orders of Chilean mammals. Annotated and descriptive list of species. Introduced species. Species erroneously attributed to Chile. Unidentifiable names. Chilean mammals listed in the order of their discovery. Type localities in Chile. Bibliography. Index.

Note: An annotated and descriptive list of Chilean mammalian species, exclusive of cetaceans, based on specimens collected by the author and Colin C. Sanborn in 1922 and 1939-40, together with those in the Museo Nacional at Santiago. Identification keys and brief descriptions have been included as well as the line drawings of the skulls of most of the species. The bibliography contains about 200 references to the world literature published between 1782 and 1942.

OSGOOD, WILFRED HUDSON

Mammals of the Kelley-Roosevelts and Delacour Asiatic Expeditions. Chicago: Chicago Natural History Museum, 1932. 146 p. illus. 24 cm. (Chicago Natural History Museum. Publication 312. Zoological series. Vol. xviii, no. 10) Paper, \$0.75. 1722b

Note: A descriptive catalogue of the species represented by the collections obtained by the expeditions during 1928-29. The species are from such diverse regions as the tropical coast of Cochín China and the lofty mountains of western Szechwan toward the borders of Thibet. The collections were compared in detail with the accumulation of Indo-Chinese mammals in the British Museum and with types of new forms in other collections.

RUSH, WILLIAM MARSHALL

Wild animals of the Rockies; adventures of a forest ranger. New York: Harper and Brothers, 1942. 296 p. illus. 22 cm. \$3.00. 1722c

Contents (abridged): Bears: Bears—are bears. The black bear contrives. Canary in a cage. Bears behind bars. The big ones die hard. Sleeping bruin. Elk: The herd. Saga of the wild. Night vigil. The tusk hunters. Moose: Old Lonesome Legs. Deer: White-tail, black-tail. The banker learns a lesson. Written in the snow. Antelope: American pronghorn. The lost antelope herd. Buffalo: Old man of the plains. Mountain sheep: The mountaineer. The golden killer. Field day. Poacher of Badger Creek. Mountain goat: Roaming the goat country. Mountain goat hunt.

Note: A collection of true stories from the author's own experience as a forest ranger and wildlife specialist on assignment in various states over a period of more than twenty years. The book presents the account of how various animals live in their native habitat as verified by the author's observation, plus certain of the writer's theories on wildlife conservation, among which is the interesting one that the buffalo is an outmoded species which deserves to become extinct. Intended for the general reader but of interest to the trained naturalist as well.

SCOTT, WILLIAM BERRYMAN, AND OTHERS

The mammalian fauna of the White River Oligocene, by William Berryman Scott, Glenn

Lowell Jepsen, and Albert Elmer Wood. Philadelphia: The American Philosophical Society, 1941. 980 p. illus. 30 cm. (American Philosophical Society. Transactions. New series, Vol. 28) Paper, Parts 1 and 4, \$2.50 each; part 2, \$2.00; part 3, \$1.00; part 5, \$3.00. 1722d

Contents (abridged): Part I, Insectivora and Carnivora, by W. B. Scott and G. L. Jepsen. The White River formation. The White River fauna. Insectivora: Tenrecoidea. Erinaceoidea. Soricidae. Familia incertae sedis. Carnivora: Creodonta. Fissipedia. Cynoidea. Aeluroidea. Part II, Rodentia, by A. E. Wood. Introduction. Rodentia: "Protrogomorpha." "Sciuromorpha." "Myomorpha." Rodentia incertae sedis. Conclusions. References. Part III, Lagomorpha, by A. E. Wood. Leporidae: Palaeolaginae. Discussion. Part IV, Artiodactyla, by W. B. Scott. Non-Ruminantia: Palaeodonta. Anodontia. Suina. Ruminantia: Tylopoda. Hypertraguloidea. Systematic position of the Hypertragulidae. Camelioidea. Relationships of Eotylpus. Oreodontoidea. Limnetae—Leptauchenia—Cyclopidius tribe. Relationships of Limnetae. The habits of Leptauchenia. Part V, Perissodactyla, by W. B. Scott. Chelopoidea: Ceratomorpha. Hippomorpha. Remarks on the evolution of the horses and camels. Ancylopoda: Edentata. Palaeonodonta. Didelphia. Marsupialia. Index.

Note: In preparing this monograph of the White River mammalian fauna, use was made of the immense collections stored in the various museums of the country: the National Museum in Washington; the American Museum of Natural History, New York; the Carnegie Museum, Pittsburgh; the Chicago Natural History Museum in Chicago and the Walker Museum of the University of Chicago; the State University Museum at Lincoln, Nebraska; the Colorado Museum of Natural History at Denver; the Museum of the State School of Mines at Rapid City, South Dakota; the museums of Amherst College, Yale and Harvard Universities, and the Academy of Natural Sciences in Philadelphia. A comparison of the families and genera of mammals which now inhabit all of North America north of the neotropical region and those which have been found in the White River reveals the great richness and diversity of the latter fauna.

WARREN, EDWARD ROYAL

The mammals of Colorado, their habits and distribution. Second (revised) edition. Norman: University of Oklahoma Press, 1942. 330 p. illus. 23 cm. \$4.00. 1723

Contents: The life zones of Colorado. Class Mammalia (key to the mammals). Order Marsupialia. Order Insectivora (key to the insectivores). Order Chiroptera (key to the bats). Order Carnivora (key to the carnivores). Order Rodentia (key to the rodents). Order Lagomorpha (key to the hares and rabbits). Order Ungulata (key to the hoofed animals). Accidental, introduced, and doubtful species. Bibliography. Glossary. Index.

Note: Intended for the professional naturalist, the national park ranger, and the amateur. More than one hundred and seventy species and subspecies of mammals are discussed. Directions are given for making study specimens; many illustrations supplement the text. The bibliography is extensive.

YOUNG, STANLEY PAUL, AND EDWARD A. GOLDMAN

The wolves of North America. Part I, Their history, life habits, economic status, and control. Part II, Classification of wolves. Washington, D.C.: The American Wildlife Institute, 1944. 636 p. illus. (part col.) 22 cm. \$6.00. 1724

Contents: Part I, Their history, habits, economic status, and control, by Stanley P. Young: Introduction. Distribution of the wolf in North America, past and present. Habits and characteristics. Natural checks, parasites, and diseases. Economic status. Measures used in wolf capture and control. Brief history of wolf depredations and cooperative Federal wolf control. Part II, Classification of wolves, by Edward A. Goldman: Introduction. History. General characters. Pilage and molt. Variation. Explanations. List of North American species and subspecies, with type localities. *Canis lupus* and subspecies. *Canis niger* and subspecies. References and selected bibliography. Index.

Note: A study of North American wolves, indicating their characteristics, distribution, and importance. The various species

and subspecies are discussed and described with illustrations of representatives of some species. The study is based on specimens in the United States National Museum and other museums.

Comparative Anatomy

BRELAND, OSMOND PHILIP

Manual of comparative anatomy. New York: McGraw-Hill Book Company, Inc., 1943. 250 p. 21 cm. (McGraw-Hill publications in the zoological sciences, A. F. Shull, consulting editor) \$2.00. 1725

Note: Designed primarily for use in the laboratory in courses that involve the dissection of representative animals. Emphasis is placed upon the comparative aspects of the forms under study by indicating homologies of structure in the various groups and by inserting short paragraphs from time to time that compare certain systems of the particular animal being considered with the structure of other forms. Specific directions are given for the making of laboratory drawings.

DAVISON, ALVIN

Mammalian anatomy, with special reference to the cat, revised by Frank A. Stromsten. Sixth edition, with one hundred seventy-four illustrations, some of which were made from the author's dissections. Philadelphia: The Blakiston Company, 1937. 328 p. illus. (part col.) 22 cm. \$3.00. 1726

Contents (abridged): Introduction. General structure. The skeleton. The joints. The muscles. Organs of digestion. The vascular system. The respiratory system. The excretory and reproductive systems. The nervous system. Glossary. Index.

Note: This book meets the needs of students taking a basic course in mammalian anatomy. Emphasis is placed on comparative studies. Several sections in this revision have been considerably enlarged. Nearly every structure mentioned in the text has been shown in some figure, and an additional section on the preparation of material is included. The presentation is intelligible to the beginning student who should acquire a knowledge of the fundamental facts with a minimum of assistance from the instructor.

DETWILER, SAMUEL RANDALL

Vertebrate photoreceptors. New York: The Macmillan Company, 1943. 184 p. illus. 22 cm. (Experimental biology monographs) \$4.00. 1728

Contents: The vertebrate eye. The retina. The structure of visual cells. Differentiation of retinal elements. Retinal structure and animal habits. Photomechanical responses in the retina. On the significance of photomechanical movements. The relation of retinal structure to visual acuity. On the supposed evolutionary relationships and functional significance of the fovea. Retinal photopigments. Vitamin A-deficiency and the retina. Recapitulation.

Note: This monograph presents a general account of the visual cells of vertebrates with particular emphasis upon their structure, development, distribution, and certain aspects of their physiology. The visual ability of animals and their habits of life are discussed in relation to the presence or absence of rods and cones, as well as their relative distribution in the eyes of different forms. The structure, occurrence, functional significance, and evolutionary relationships of the fovea centralis receive special attention. Retinal photopigments, night blindness and restorative therapy, and the possibilities for structural regeneration of damaged rod visual cells due to prolonged vitamin A-deficiency are all thoroughly treated in the light of recent investigations.

EVANS, FRANCIS GAYNOR

The morphology and functional evolution of the atlas-axis complex from fish to mammals. 1946. 306 p. illus. (part col.) 22 cm. \$4.80. 1729

New York: New York Academy of Sciences, 1939. 76 p. illus. 22 cm. (New York Academy of Sciences. Annals. Vol. xxxix, p. 29-104) Paper, \$0.75. 1729

Contents: Introduction. Materials and methods. Acknowledgments. Abbreviations. Morphology and function of the atlas-axis complex in fish. Morphology and function of the atlas-axis complex in lower tetrapods: Amphibia. Reptilia. Morphology and function of the atlas-axis complex in mammals: Didelphis. Felis. Homo. Discussion. Summary. Literature cited. Index.

Note: A study of the bones and their associated muscles and ligaments of the specialized portion of the vertebral column known as the atlas-axis complex. The analysis is made from the standpoints of morphology and functional evolution.

HARTMAN, CARL GOTTFRIED, AND W. L. STRAUS, JR., EDITORS

Anatomy of the rhesus monkey (*Macaca mulatta*). Baltimore: The Williams and Wilkins Company, 1933. 383 p. 23 cm. \$6.00. 1729a

Contents: The groups and names of macaques, by Gerrit S. Miller, Jr. Growth and development, by Adolph H. Schultz. The skin and its appendages, by T. D. Stewart. Dermatoglyphics, by Harold C. Minns. Skeleton and joints, by W. E. Sullivan. The teeth, by John A. Marshall. The muscular system, by A. Brazier Howell and William L. Straus, Jr. The facial musculature and its innervation, by Ernst Huber. Nasal cavity, larynx, mouth and pharynx, by Frederick D. Geist. Respiratory, digestive and urinary systems, by P. Lineback. The reproductive systems, by George B. Wislocki. The vascular system, by P. Lineback. The endocrine glands, by Ruth A. Miller and L. S. Leonard. The external morphology of the brain and the spinal cord, by Marion Hines. The cranial nerves, by Kermit Christensen. The spinal nerves, by A. Brazier Howell and William L. Straus, Jr. The autonomic nervous system, by Albert Kuntz. The eye and the ear, by T. H. Bast. Housing and care, by Carl G. Hartman.

Note: Based on independent research of 18 individuals under the auspices of the American Association of Anatomists and directed by Dr. W. E. Sullivan of the University of Wisconsin. Drawings are mostly by Benjamin Kopel. A few photographic plates and roentgenograms are reproduced. The book supplies information that fills some gaps in available knowledge of the rhesus monkey, for example, characteristics useful in estimating the age of a given monkey.

HOWELL, ALFRED BRAZIER

Speed in animals; their specialization for running and leaping. Chicago: University of Chicago Press, 1944. 270 p. illus. 23 cm. \$4.00. 1730

Contents: Fishes and amphibians. Reptiles and birds. Monotremes and marsupials. The placental mammals. The muscular system. The axial system. The arm. The leg. Proportions. Gaits. Conclusions.

Note: Mr. Howell concludes that the development of locomotor ability has been the most important factor in the evolution of bodily form in animals, a conclusion resulting from tracing the changes of form that have taken place in animals in adapting themselves to speedy locomotion. The need for speed, either to secure food or to escape from being food for others, is discussed as being ever present in animals. A chapter deals with the gaits of race horses. The complex movements of each gait are analyzed and the discussion is illustrated by drawings from a series of slow-motion pictures of horses.

HYMAN, LIBBIE HENRIETTA

Comparative vertebrate anatomy. Chicago: The University of Chicago Press, 1942. 544 p. illus. 25 cm. \$3.50. 1731

Note: The author's *Laboratory manual for comparative vertebrate anatomy* was widely used in American college laboratories for many years. This second edition under a changed title includes 164 pages of new material and is designed for use as a text as well as a laboratory manual. The thorough revision is based on recent literature and on the author's own research.

KENDALL, JAMES IRVING

The microscopic anatomy of vertebrates. Second edition, thoroughly revised. Illustrated with 197 engravings. Philadelphia: Lea and Febiger, 1940. 342 p. illus. 24 cm. \$3.75. 1731a

Contents: Introduction. The epithelial tissues. The connective tissues. The blood. The muscle tissues. The nerve tissue. The vascular system. The lymphatic system. The integument. The respiratory system. The digestive system. The excretory system. The female reproductive system. The male reproductive system. The endocrine glands. Technique. Bibliography. Index.

Note: A text for premedical and general college courses in vertebrate anatomy, presenting a working knowledge of vertebrate microscopic anatomy based on representatives of the various classes. Undue emphasis on mammalism and human materials is avoided in the second edition, and new material has been introduced on the dogfish, frog, necturus, lizard, and pigeon. General descriptions applicable to many representatives are given, followed by an additional description of the type representative in smaller print. Directions for the preparation of slides for histological studies are also included. The bibliography is arranged in order of subject.

LITTLE, MALCOLM EDGEWORTH

Structure of the vertebrates. Revised edition. New York: Farrar & Rinehart, Inc., 1937. 488 p. illus. 21 cm. \$3.25. 1732

Contents: Vertebrate zoology: The position of the chordate phylum. The early chordates. Cyclostomes. Fish. Amphibia. Reptilia. Aves. Mammalia. Comparative morphology: Tissues of the body. Integumentary structures. Supporting structures. Muscular system. Digestive system. Respiratory system. Vascular system. Urogenital system. Nervous system. Organs of special sense. The glands of internal secretion. Evolution of the vertebrates: Distribution of animals. Adaptive radiations of the vertebrates. Appendixes: Classification of the Chordata. Glossary. Index.

Note: A college textbook for use in classes in comparative anatomy.

MESSER, HAROLD MADISON

An introduction to vertebrate anatomy. New York: The Macmillan Company, 1938. 406 p. illus. 22 cm. \$3.50. 1733

Contents: Introduction. The chordates. The protochordates. The vertebrates. Early vertebrate development. The integument. The skeleton. The muscles. The digestive system. The respiratory system. The circulatory system. The excretory system. The reproductive system. The nervous system. The sense organs. The ductless glands. The origin and evolution of the vertebrates. Bibliography. Glossary. Index.

Note: A brief textbook designed for one-semester college courses. The treatment is concise and arranged by organ systems. In each chapter a general discussion of the anatomical system under discussion is given first, and is followed by a study of that system in various types.

MIDLO, CHARLES, AND HAROLD CUMMINS

Palmar and plantar dermatoglyphics in primates. Six hundred two figures. Philadelphia: The Wistar Institute of Anatomy and Biology, 1942. 198 p. illus. 26 cm. (The American anatomical memoirs. No. 20) \$3.00. 1733a

Contents: Introduction. Material. Descriptive morphology: Epidermal ridges. The basic plan of volar pads and of dermatoglyphic configurations. Observations on pads and configurations. Departures from the basic plan. General ridge courses. Caudal dermatoglyphics. Pattern intensity: Total intensity. Regional pattern intensities. Bilateral asymmetry. Discussion. Summary. Literature cited.

Note: The utility of the study of hand- and foot-prints in tracing genealogical affinities of primates is summarized in this monograph. It is based upon observations of the epidermal convolutions of the palms of the hands and feet in 36 genera, which represent all the existing families and subfamilies of both the prosimians (Lemuroidea) and simians (Anthropoidea). Ninety-six titles are listed in the bibliography.

NEAL, HERBERT VINCENT, AND HERBERT W. RAND

Comparative anatomy. With 540 illustrations. Philadelphia: The Blakiston Company, 1936. 739 p. illus. (part col.) 23 cm. \$4.75. 1734

Contents: The animal kingdom. Reproduction. Histology. The skeletal system. Muscular system. Digestive system. Respiratory system. Vascular system. Urogenital system. Endocrinal organs. Nervous system. Sense organs. Head problem. Ancestry of the vertebrates. Glossary. Index.

Note: A textbook for college courses. The discussion of each system and organ is divided into three parts: phylogenesis, ontogenesis, and anatomy. The facts of comparative anatomy are given interest and meaning in terms of human phylogenesis. The same authors have written *Chordate anatomy*, Philadelphia, The Blakiston Company, 1939, 467 p., \$3.50, which is a briefer treatment of the same material intended for use in short courses.

PENNSYLVANIA UNIVERSITY. BICENTENNIAL CONFERENCE

Development of occlusion; by William K. Gregory, B. Holly Broadbent [and] Milo Hellman. Philadelphia: University of Pennsylvania Press, 1941. 72 p. illus. 23 cm. Paper, \$1.50. 1735

Contents: The evolution of dental occlusion from fish to man, by W. K. Gregory. Ontogenetic development of occlusion, by B. H. Broadbent. Factors influencing occlusion, by Milo Hellman.

Note: This book contains lectures which were delivered at the Bicentennial Conference of the University of Pennsylvania. Bibliographies of related material are included.

WALLS, GORDON LYNN

The vertebrate eye and its adaptive radiation. Bloomfield Hills, Mich.: Cranbrook Institute of Science, 1942. 785 p. illus. 23 cm. (Cranbrook Institute of Science. Bulletin no. 19, August, 1942) U. S., \$6.50 postpaid; add for postage elsewhere: American countries except Canada and Guianas, \$0.25; elsewhere, \$0.50. 1737

Contents: Part I, Basic: Light and its perception. A typical vertebrate eye: the human. The vertebrate retina. The visual process. The genesis of the vertebrate eye. Elements of vertebrate phylogeny. Part II, Ecologic: Adaptations to arhythmic activity. Adaptations to diurnal activity. Adaptations to nocturnal activity. Adaptations to space and motion. Adaptations to media and substrates. Adaptations to photic quality. Part III, Synoptic: Cyclostomes. Higher fishes. Amphibians. Reptiles. Birds. Mammals. Bibliography. Index and glossary.

Note: A treatment of comparative ocular biology. Written in the style of a textbook, though for a course which has yet to be given in any American university, the work assumes no more scientific knowledge on the reader's part than the contents of the usual elementary course in biology. The book should therefore be entirely clear to any college student or graduate and to the trained or untrained amateur naturalist, and will be of particular benefit to zoologists and ecologists, medical and veterinary ophthalmologists, and comparative psychologists. Part I discusses the ontogenetic and phylogenetic origins of the eye, together with the elementary facts of vertebrate inter-relationships. Part II covers the evolutionary responses of the vertebrate eye to various environmental factors. The final part deals with the morphology of the eye and its bearing on the problems of vertebrate phylogeny. The bibliography contains about 500 references to the world literature of the subject.

Embryology

AREY, LESLIE BRAINERD

Developmental anatomy; a textbook and laboratory manual of embryology. Fourth edition, revised. Philadelphia: W. B. Saunders Company, 1940. 612 p. illus. (part col.) 25 cm. \$6.75. 1738

Contents: Introduction. Germ cells and fertilization. Cleavage and origin of germ layers. Fetal membranes, placentation and deciduae. Age, body form and growth changes. Teratology. Digestive system. Respiratory system. The mesenteries and coelom. Urogenital, vascular, skeletal and muscular systems. Integumentary system. Central and peripheral nervous systems. Sense organs. Study of chick embryos. Study of pig embryos. Index.

Note: Intended for medical students, physicians and research workers, this book centers around the development of man and mammals, comparative material being introduced chiefly where it amplifies or explains better the conditions found in mammals. Dynamic character is attained through combination of the functional and structural aspects of embryology. This edition has been extensively rewritten and 540 new drawings have been added, making a total of 1385 illustrations on 590 figures, some of them in colors. The laboratory section has been strengthened for the better study of the chick and 10 mm. pig embryos, whereas most of the material on the 6 mm. pig has been dropped. New standards of age have been adopted for human embryos of the first five weeks; these are in accordance with the precise information on the monkey made available by the Carnegie Laboratory of Embryology. References and an index are included.

CARNEGIE INSTITUTION OF WASHINGTON

Contributions to embryology. Volume XXI, nos. 118-125. Washington, D.C.: Carnegie Institution of Washington, 1930. 168 p. illus. 28 cm. (Carnegie Institution of Washington. Publication no. 407) Cloth, \$4.75. 1739

Contents: A human embryo with seventeen pairs of somites, by Wayne J. Atwell. Description of a human embryo of eight somites, by Cecil M. West. Medullated tracts in the brain stem of a seventh-month human fetus, by O. R. Langworthy. Ossification of the otic capsule in human fetuses, by T. H. Bast. On an unusual placental form in the Hyracoidea: its bearing on the theory of the phylogeny of the placenta, by George B. Wislocki. Gross and microscopic structure of thyroid gland in man, by W. F. Rienhoff, Jr. The age factor in grafts, by Vera Danchakoff and V. E. Danchakoff. The early embryology of the rabbit, by P. W. Gregory.

CARNEGIE INSTITUTION OF WASHINGTON

Contributions to embryology. Volume XXII, nos. 126-133. Washington, D.C.: Carnegie Institution of Washington, 1930. 192 p. illus. 28 cm. (Carnegie Institution of Washington. Publication no. 414) Cloth, \$5.50. 1740

Contents: Focal deficiencies in fetal tissues and their relation to intra-uterine amputation, by George L. Streeter. Human tubal ova; related early corpora lutea and uterine tubes, by Edgar Allen, J. P. Pratt, Q. U. Newell, and L. J. Bland. Phagocytic activity and morphological variations of the ciliated epithelial cells of the trachea and bronchi in rabbits, by Marian W. Ropes. Observations on the development of the human female genital tract, by Richard H. Hunter. Ontogeny and phylogeny of the nasal cartilages in primates, by I. Chuan Wen. A human embryo with 14 pairs of somites, by Chester H. Heuser. Area vitellina of chick blastoderm in tissue cultures, by Z. Grodzinski. On a series of placental stages of a platyrrhine monkey (*Ateles geoffroyi*) with some remarks upon age, sex and breeding period in platyrrhines, by George B. Wislocki.

CARNEGIE INSTITUTION OF WASHINGTON

Contributions to embryology. Volume XXIII, nos. 134-138. Washington, D.C.: Carnegie Institution of Washington, 1932. 267 p. illus. 28 cm. (Carnegie Institution of Washington. Publication no. 433) Paper, \$5.00; cloth, \$6.00. 1741

Contents: Studies in the reproduction of the monkey *Macacus (Pithecius) rhesus*, with special reference to menstruation and pregnancy, by Carl G. Hartman. On the female reproductive tract of the gorilla, with a comparison of that of other primates, by George B. Wislocki. Observations on the bones of the skull in white and negro fetuses and infants, by Marciano Limson. The living egg and early stages of its development in the guinea-pig, by Raymond R. Squier. A presomite human embryo with a definite chorda-canal, by Chester H. Heuser.

CARNEGIE INSTITUTION OF WASHINGTON

#443 Contributions to embryology. Volume xxiv, nos. 139-143. Washington, D.C.: Carnegie Institution of Washington, 1933. 201 p. illus. 28 cm. (Carnegie Institution of Washington. Publication no. 443) Paper, \$3.25; cloth, \$4.25.

1742

Contents: Development of behavior patterns and myelination of the nervous system in the human fetus and infant, by O. R. Langworthy. The development of the vagina in the human fetus, by Arthur K. Koff. The development of the thymus, thyroid, and parathyroid glands in man, by G. Louis Weller, Jr. Histological studies on the menstruating mucous membrane of the human uterus, by G. W. Bartelmez. Early cleavage stages of the egg of the monkey (*Macacus rhesus*), by W. H. Lewis and C. G. Hartman.

CARNEGIE INSTITUTION OF WASHINGTON

#444 Contributions to embryology. Volume xxv, nos. 144-151. Washington, D.C.: Carnegie Institution of Washington, 1935. 181 p. illus. 28 cm. (Carnegie Institution of Washington. Publication no. 459) Cloth, \$3.75.

1743

Contents: Early development of the sloth (*Bradypus griseus*) and its similarity to that of man, by Chester H. Heuser and George B. Wislocki. Development of the female genital tract in the American opossum, by James S. Baxter. Angiogenesis in the early human chorion and in the primary placenta of the macaque monkey, by Arthur T. Hertig. Postnatal development of alveoli in the mammalian lung in relation to the problem of the alveolar phagocyte, by John L. Bremer. On the early development of the mouse egg, by Warren H. Lewis and Elsie Starr Wright. Photodynamic action on normal and malignant cells in vitro, by John F. Menke. Rat malignant cells in roller tube cultures and some results, by Warren H. Lewis. The Walker rat carcinoma no. 72 in tissue culture, by Werner Schopper.

CARNEGIE INSTITUTION OF WASHINGTON

#477 Contributions to embryology. Volume xxvi, nos. 152-159. Washington, D.C.: Carnegie Institution of Washington, 1937. 294 p. illus. 28 cm. (Carnegie Institution of Washington. Publication no. 479) Cloth, \$5.00.

1744

Contents: The development of the human carotid body, by James Dixon Boyd. The correlation of structure and function in the developing mesonephros and metanephros, by I. Gersh. Embryonal germ-cells of the chick in hanging-drop cultures, by Giulio Muratori. Fetal growth and development of the rhesus monkey, by Adolph H. Schultz. The Lockyer embryo: an early human embryo in situ, by Elizabeth Mapelsden Ramsey. The correlation of oxygen consumption, function and structure in the developing metanephros of the pig, by Louis B. Flexner and I. Gersh. Comparative morphogenesis of the fetal membranes and accessory uterine structures, by Harland W. Mossman. The parathyroid glands and the lateral thyroid in man: their morphogenesis, histogenesis, topographic anatomy and prenatal growth, by Edgar H. Norris.

CARNEGIE INSTITUTION OF WASHINGTON

#446 Contributions to embryology. Volume xxvii, nos. 160-169. Washington, D.C.: Carnegie Institution of Washington, 1938. 305 p. illus. 28 cm. (Carnegie Institution of Washington. Publication no. 496) Cloth, \$5.50.

1745

Contents: On the placentation of the macaque (*Macaca mulatta*) from the time of implantation until the formation of the definitive placenta, by George B. Wislocki and George L. Streeter. The Yale embryo, by Elizabeth M. Ramsey. A human embryo in the bilaminar blastodisc stage (the Edwards-Jones-Brewer ovum), by John I. Brewer. Young human ovum detected in uterine scraping, by Elémer Scipades, Jr. Some observations on the vascular system of a female fetal finback, by Robert Walmsley. Ovaries of gorilla, chimpanzee, orang-utan and gibbon, by Saïm Sâglik. The morphogenesis and histogenesis of the

thymus gland in man: in which the origin of the Hassall's corpuscles of the human thymus is discovered, by Edgar H. Norris. Multiplication and reduction of somatic chromosome groups as a regular developmental process in the mosquito, *Culex pipiens*, by Charles A. Berger. The history of the first somite in human embryos, by Leslie B. Arey. Bodily growth of babies during the first postnatal year, by Charles B. Davenport.

CARNEGIE INSTITUTION OF WASHINGTON

#518 Contributions to embryology. Volume xxviii, nos. 170-178. Washington, D.C.: Carnegie Institution of Washington, 1940. 451 p. illus. 28 cm. (Carnegie Institution of Washington. Publication no. 518) Cloth, \$5.00.

1746

Contents: Growth and development of the chimpanzee, by Adolph H. Schultz. The placentation of *Procapra capensis*, with a discussion of the placental affinities of the Hyracoidea, by G. B. Wislocki and O. P. van der Westhuisen. Growth in vitro of ovarian germinal epithelium, by J. Herman Long. Development of the neuromuscular spindle in human fetuses, by Fidel Cuajunco. Studies on the reproductive system of the alligator; observations on the development of the gonad, the adrenal cortex, and the Müllerian duct, by Thomas R. Forbes. A volumetric analysis of young human embryos of the 10- and 12-somite stage, by Edward A. Boyden. Defective development of the cerebral cortex involving symmetrical bilateral areas, by Patrick Alexis M. F. Fitz-Gerald. Menstruation in intraocular endometrial transplants in the rhesus monkey, by J. Eldridge Markee. The maturation of "excitability" in the precentral gyrus of the young monkey (*Macaca mulatta*), by Marion Hines and E. P. Boynton.

CARNEGIE INSTITUTION OF WASHINGTON

#525 Contributions to embryology. Volume xxix, nos. 179-186. Washington, D.C.: Carnegie Institution of Washington, 1941. 193 p. illus. 28 cm. (Carnegie Institution of Washington. Publication no. 525) Paper, \$4.50; cloth, \$5.50.

1747

Contents: The first maturation division of the macaque ovum, by Carl G. Hartman and George W. Corner. Tubal ova of the rhesus monkey, by Warren H. Lewis and Carl G. Hartman. Development of the macaque embryo, by Chester H. Heuser and George L. Streeter. Growth and development of the orang-utan, by Adolph H. Schultz. The vascular pattern of the adrenal gland of the mouse and rat and its physiological response to changes in glandular activity, by I. Gersh and Arthur Grollman. Two human ova of the pre-villous stage, having an ovulation age of about eleven and twelve days respectively, by Arthur T. Hertig and John Rock. A human embryo in the primitive streak stage, by H. O. Jones and John I. Brewer. The Torpin ovum, a presumptive human embryo, by Joseph Krafka, Jr.

CARNEGIE INSTITUTION OF WASHINGTON

#541 Contributions to embryology. Volume xxx, nos. 187-197. Washington, D.C.: Carnegie Institution of Washington, 1942. 245 p. illus. 28 cm. (Carnegie Institution of Washington. Publication no. 541) Paper, \$4.50; cloth, \$5.00.

1748

Contents: A presumptive human embryo with chorda canal and prochordal plate, by W. C. George. On the fate of the medullary cords of the human ovary, by T. R. Forbes. Observations on the histology of the opossum ovary, by P. Martinez-Estevé. The embryology of *Eleutherodactylus nubicola*, an anuran which has no tadpole stage, by W. G. Lynn. The origin and differentiation of the epithelium of the urinogenital sinus in the opossum, with a study of the modifications induced by estrogens, by R. K. Burns, Jr. The fate of the corpora lutea and the nature of the corpora aberrantia in the rhesus monkey, by G. W. Corner. On the lipin and pigment in the corpus luteum of the rhesus monkey, by I. Rossman. Further attempts to cause ovulation by means of gonadotropes in the adult rhesus monkey, by C. G. Hartman. Development of the human motor end plate, by F. Cuajunco. The development and regression of reflexes, postures, and progression in the young macaque, by M. Hines. Developmental horizons in human embryos; description of age group xi, 13 to

20 somites, and age group XII, 21 to 29 somites, by G. L. Streeter.

Note: These volumes are part of a continuing series which has been published since 1915. The series presents technical papers summarizing original research at the Carnegie Embryological Laboratory in various branches of human and animal embryology. Included are critical discussions of earlier work in the field. Many of the papers are illustrated, and bibliographies accompany most of them.

DETWILER, SAMUEL RANDALL

Neuroembryology; an experimental study. New York: The Macmillan Company, 1936. 218 p. illus. 22 cm. (Experimental biology monographs) \$3.75. 1748a

Contents: Introduction. History of the neurone concept. Surgery on the embryo as a means of studying neurogenesis. The role of neuroblast and sheath cell in the development of peripheral nerves. Experimental alteration of growth patterns in the development of peripheral nerves. Factors controlling the growth of nerves *in vitro*. The behavior of grafted limbs. Developmental responses of nerve centers to alterations in the peripheral field. Spinal cord grafting experiments and their bearing upon the problem of cellular proliferation. Cellular proliferation within the central nervous systems as influenced by peripheral nerve fiber ingrowth. Heteroplastic spinal cord grafts. Experiments upon segmentation in the nervous system. An experimental study of Mauthner's fibers in relation to reflex activity. Summary and interpretations. Bibliography. Author index. Subject index.

Note: This book is designed to meet the need for a monographic survey of recent advances which have been made by the method of experimental surgery on the embryo, and their application to an analytical study of this subject. Particular attention is given to such significant problems as the factors influencing the proliferation of nerves *in vitro* and *in vivo*, forces influencing the growth of nerve cells within the central nervous system, and the relationship of developing morphological units of the nervous system to general somatic activities.

HAMBURGER, VIKTOR

A manual of experimental embryology. Chicago: The University of Chicago Press, 1942. 213 p. illus. 24 cm. \$2.50. 1749

Contents (abridged): Part 1, Equipment and instruments. Part 2, Experiments on amphibian embryos. Part 3, Experiments on the chick embryo. Part 4, Regeneration (reconstitution). Part 5, The gradient theory.

Note: This book presents the major problems and experiments of experimental embryology. It is designed for laboratory courses in experimental embryology, and it may be used also for the preparation of demonstrations and classroom experiments in general biology and general embryology. After discussing the instruments used in experimental embryology, the author describes gastrulation in amphibians, deals with experiments on the chick embryo which includes the techniques of chorio-allantoic grafting, vital staining of the early blastoderm, as well as limb transplantations and melanophore experiments, then the regeneration experiments on planaris and amphibian larvae, and Child's gradient theory. The standard stage series for the salamander prepared by Professor R. G. Harrison of Yale as well as the stage series for *Rana sylvatica* and for *Rana pipiens* are included in the appendix.

HUETTNER, ALFRED FRANCIS

Fundamentals of comparative embryology of the vertebrates. New York: The Macmillan Company, 1941. 416 p. illus. 24 cm. \$4.50. 1750

Contents: Introduction. Protoplasm and the cell. Development of sex. Chromosomes in development. Gametes and fertilization. The embryology of Amphioxus. The embryology of the frog. The embryology of the chick. The embryology of the mammal. Index.

Note: This text gives a comparative account of the development of the vertebrates including the cephalochordate Amphioxus. The introduction stresses the gene theory in development and differentiation. The last chapters, dealing with mammalian embryology, stress human development. The presentation of the subject is from the morphological point of view. Most of the illustrations were especially drawn for this book and a large portion are stereogrammatic.

JOHANNSEN, OSKAR AUGUSTUS, AND FERDINAND H. BUTT

Embryology of insects and myriapods; the developmental history of insects, centipedes, and millepedes from egg deposition to hatching. New York: McGraw-Hill Book Company, Inc., 1941. 462 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences; A. F. Shull, consulting editor) \$5.00. 1752

Contents: Part I. Introduction. A type of embryonic development in insects. The egg, fertilization, maturation, and cleavage. Early development. Embryonic envelopes, dorsal organs, and blastokinesis. Gastrulation, formation of the germ layers, and development of the entoderm. The alimentary canal. Ectodermal derivatives. Mesodermal derivatives. Polyembryony and parthenogenesis. Microorganisms in the egg. Experimental embryology. Part II. Oligoentomata and Aptilota. Ephemerida, Odonata, Plecoptera, Embiaria, Dermaptera, Hemimerina. Orthopteroidea (Panorthoptera). Oligonephridia. Neuroptera and Coleoptera. Hymenoptera. Trichoptera and Lepidoptera. Siphonaptera and Diptera. Myriapoda.

Note: A special feature of this authoritative text is the second part which gives examples of developmental types from each of the major orders of Eutracheata.

JUST, ERNEST EVERETT

Basic methods for experiments on eggs of marine animals. Philadelphia: The Blakiston Company, 1939. 89 p. 23 cm. \$1.25. 1753

Contents (abridged): General working conditions, precautions and prerequisites. Normal development. Methods for handling eggs and sperm in the laboratory. Some methods for preliminary experimental manipulations. Methods of fixation, clearing and imbedding, staining. Appendix.

Note: Presents fundamental methods for the experimental investigation of eggs and spermatozoa of marine invertebrates. General rules are given for the use of beginners in experimental embryology and as a basis for the specialist whose work demands individual extension of methods. A large section of the book is devoted to methods for the preparation of the fixed egg.

MCCRADY, EDWARD, JR.

The embryology of the opossum. Sixty-six text figures and three plates. Philadelphia: The Wistar Institute of Anatomy and Biology, 1938. 233 p. illus. 25 cm. (The American anatomical memoirs. No. 16) \$5.00. 1753a

Contents: Introduction. Preliminary data: The ovarian egg. The testicular sperm. Mating. The first day. The second day. The third day. The fourth day. The fifth and sixth days. The seventh day. The eighth day. The ninth day. The tenth day. The eleventh day. The twelfth day. The thirteenth day. Appendix: Postnatal development. Some experimental techniques. The evolution of the mammals. Bibliography.

Note: This work describes in detail the embryology of the common Virginia opossum (*Didelphys virginiana* Kerr). The study was made at the Wistar Institute, where in 1930 a colony of opossums in captivity was begun. The publication includes notes on the breeding of opossums in captivity, the writings of other scientists in this field, and a bibliography of 16 pages. The illustrations are mostly from drawings and diagrams by the author.

MC EWEN, ROBERT STANLEY

Vertebrate embryology. Revised edition. New York: Henry Holt and Company, 1931. 581 p. illus. 22 cm. \$5.00. 1754

Contents: Part I: The cell and its function in reproduction. Fertilization and early stages in development. The early development of Amphioxus. Part II: The development of the frog: From production of the germ cells through gastrulation. Early development subsequent to gastrulation. Later or larval development. Part III: Segmentation and gastrulation in the teleosts and gymnophiona. Part IV: The development of the chick: The adult

reproductive organs and development of the egg previous to incubation. Development during the first, second, third, fourth, fifth and subsequent days of incubation. Part v: The mammal: The early development of the mammal and its embryonic appendages. Index.

Note: A treatment of embryology designed for use as a text by college students. The book begins with a discussion of fertilization and of the fundamental embryological processes common to all vertebrates. The major portion of the volume is devoted to a detailed and progressive discussion of the embryology of the frog and the chick. The segmentation and gastrulation in the teleosts and Gymnophiona as well as the early development of the mammal are also described. The evolutionary significance of the development stages is stressed throughout. The changes in the revised edition include the correction of errors and the bringing up to date of those topics where advances in knowledge have occurred between 1923 and 1931. References to literature are appended to each of the five parts.

MEYER, ARTHUR WILLIAM

591.3
H26
An analysis of the *De generatione animalium* of William Harvey. Stanford University, Calif.: Stanford University Press, 1936. 167 p. illus. 21 cm. \$3.00. 1755

Contents: The times and their temper. Some embryological predecessors and contemporaries. The nature of the treatise. Philosophical preconceptions. Attitude toward spontaneous generation. Ideas regarding fertilization. "Ex ovo omnia!" The generation of the chick. Development in mammals. The lacteals and some other matters. Opinions of the *De generatione*.

Note: A comprehensive critical analysis in the light of the time of Harvey and from the standpoint of the history of the science of embryology. Misconceptions are analyzed, controversial points illuminated, and its merits emphasized. All available materials were examined and discussed in the study.

MEYER, ARTHUR WILLIAM

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M555
970
The rise of embryology. Stanford University, Calif.: Stanford University Press, 1939. 367 p. illus. 23 cm. \$6.00. 1756

Contents: Aboriginal ideas of reproduction. Early historic ideas of generation. Spontaneous generation. Epigenesis. Preformation. Pangenesis. Panspermia or panspermatism. The search for the mammalian ovum. The discovery, origin, and meaning of the spermatozoon. Changing ideas of impregnation or fertilization. The role of the "mule." The problem of malformation. Early visual and other technical aids. The growth of morphology. Early experimental embryology. Bibliography. Index.

Note: A history of leading older beliefs regarding reproduction and genesis and the development of these ideas carried to the modern viewpoint. The words of many scholars are quoted at some length to reveal the intellectual atmosphere of their times.

MORGAN, THOMAS HUNT

591.3
M82
Embryology and genetics. New York: Columbia University Press, 1934. 258 p. illus. 22 cm. \$3.00. 1757

Contents: Introduction. Development and genetics. The egg and the spermatozoon. Cleavage of the egg. Gastrulation. Half and whole embryos. The development of egg fragments. Single embryo from two eggs. Twins and twinning. Multiple chromosome types. Protoplasm and genes. Larval and foetal types. Parthenogenesis. Regeneration. Localization and induction. The determination of sex. Physiological embryology. References. Index.

Note: The two sciences of genetics and experimental embryology developed in large part independently of each other; in this book Dr. Morgan weaves them together into a single narrative, showing their interdependence and the points at which the findings of one may be used to clarify problems of the other. It is addressed to the general biologist as well as to specialists in the two fields, and is also used by students in colleges and medical schools.

NEWBY, WILLIAM WALLACE

596.17
N224
The embryology of the echiuroid worm, *Urechis caupo*. Philadelphia: The American Philosophical Society, 1940. 219 p. illus. 23 cm.

(Memoirs of the American Philosophical Society. Vol. xvi, 1940) \$2.00. 1757a

Contents: Introduction. Reproductive system and germ cells of *Urechis*. Material and methods used in the embryological investigation. Development of *Urechis*. Gastrulation and shifting of embryonic areas and axes. Organogenesis. Comparison of the development of *Urechis* and that of other echiuroids. Comparison of echiuroid development with that of other invertebrates. The phylogenetic position of the Echiuroidea. Bibliography. Index.

Note: This monograph presents a study of the normal and typical embryology of *Urechis*, covering the development of the animal from the germ cells and their union in fertilization, the cleavage of the cells and the rise of the various organs of the larva and adult forms. The value of this work lies in the fact that the *Urechis* is very suitable for experimental work in embryology, so that the normal development of this species as described here will provide a standard with which to compare experimental results. The work is based on a summary of the literature of the field and upon original research by the author.

PINCUS, GREGORY

The eggs of mammals. New York: The Macmillan Company, 1936. 160 p. illus. 22 cm. (Experimental biology monographs) \$3.75. 1758

591.3
P652
Contents: Introduction. The origin of the definite ova. The growth of the ovum. The development and atresia of full-grown ova and the problem of ovarian parthenogenesis. Methods employed in the experimental manipulation of mammalian ova. The tubal history of unfertilized eggs. Fertilization and cleavage. The activation of unfertilized eggs. The growth and implantation of the blastodermic vesicle. Summary and recapitulation. Bibliography. Author index. Subject index.

Note: This monograph is a concise presentation of experimental investigations dealing with the behavior of mammalian eggs during their various stages of their development in the ovaries, fallopian tubes, and uterus. A critical account of oogenesis is followed by an examination of the physiological factors governing growth, maturation, and atresia of ovarian eggs. The relation of these processes to the follicular apparatus and the gonad stimulating hormones of the anterior pituitary is discussed in some detail. The history of tubal ova is given with an account of the comparative behavior of fertilized and unfertilized eggs in vivo and in vitro. This includes an inquiry into the nature of parthenogenetic activation and fertilization, and a description of the intrinsic and extrinsic factors affecting the cleavage process. The development of blastodermic vesicle is treated chiefly on the basis of the hormonal control of growth and implantation during this stage. An account is given of recently developed techniques for the experimental manipulation of living ova.

RICHARDS, AUTE

Outline of comparative embryology. New York: John Wiley & Sons, Inc., 1931. 444 p. illus. 23 cm. \$5.00. 1759

591.3
R39
Contents: Part I. General embryology: Historical development of embryology. The germ cell cycle. Egg and cleavage types. Holoblastic types of cleavage. Meroblastic types of cleavage. Types of blastulae. Endoderm formation. Mesoderm formation. Types of invertebrate larvae. Formation of the mammalian embryo. Egg and embryonic membranes. Appendix to part I. Part II. Embryological problems: Origin and development of germ cells. Germ-layer theory. The recapitulation theory. Asexual reproduction. Parthenogenesis. Paedogenesis and neoteny. Polyembryony. The determination problem. Ecological control of invertebrate larvae types. Glossary of embryological terms. General bibliography. Index.

Note: An introductory textbook for premedical or general college students. The aim is to set up the general principles of comparative embryology so that the student may see how the special case is merely one of several types and has certain definite relations to the other types. The book seeks to show only how the single-celled fertilized egg arrives at the multicellular condition characteristic of the fully-formed but undifferentiated organism, while detailed embryology of particular forms is purposely omitted. About 575 titles are listed in the bibliography.

RUGH, ROBERTS

A laboratory manual of vertebrate embryology. Revised edition. Minneapolis, Minn.: Burgess Publishing Company, 1944. 194 p. illus. 27 cm. Spiral binding, paper covers, \$2.00. 1759a

Contents (abridged): Introduction. The maturation process: Spermatogenesis. Oögenesis. Fertilization and early development. Amphioxus. Early development of the fish. The frog: gonads and maturation. The frog's egg: fertilization and cleavage. The frog embryo. The frog tadpole. The chick: gonads and maturation. The chick embryo: Primitive streak size. Twenty-four hour stage. Thirty-three hour stage. Forty-eight hour stage. Summary of development of forty-eight hours. The chick embryo: Sixty-hour stage. Seventy-two hour stage. Four to nine days. Embryology of the pig. Glossary of embryological terms.

Note: This laboratory manual for a course in vertebrate embryology was originally prepared for use at Washington Square College at New York University. Maturation, fertilization, and cleavage are treated in a general manner and there are detailed studies on frog, chick, and pig embryology.

SHUMWAY, WALDO

Introduction to vertebrate embryology. Fourth edition. New York: John Wiley & Sons, Inc., 1942. 372 p. illus. 23 cm. \$4.00. 1760

Contents: The study of embryology. Vertebrate life histories. Germ cells. Chromosomes and genes. Early embryology. Embryonic form and extra-embryonic structures. Digestive system. Respiratory organs. Coelom and mesenteries. Urogenital system. Blood-vascular system. Skeleton. Muscles. Integument. Nervous system. Sense organs. Experimental embryology. Atlas of vertebrate embryos. Embryological technique. Bibliography. Glossary. Index.

Note: A simple and straightforward treatment, giving first a brief, general view of the types of vertebrate development, followed by more detailed discussion in later chapters. The book affords a modern physiological approach to problems of embryology, as well as the classical morphological treatment. A direct comparison is made of the different stages of embryology. In this edition the experimental side of the subject is emphasized. Recent material on primates, on gastrulation in the frog and chick, and on organogeny are other added features. An atlas of embryos gives figures of sections and total mounts drawn from actual laboratory specimens without idealization. A bibliography and glossary are included.

TENNENT, DAVID HILT

506
e 219
#59
The photodynamic action of dyes on the eggs of the sea urchin, *Lytechinus variegatus*. Washington, D.C.: Carnegie Institution of Washington, 1942. 153 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 539. Papers from Tortugas Laboratory. Vol. xxxv) Paper, \$1.25; cloth, \$1.75. 1761

Contents: Introduction. Methods. Experiments with neutral red. The effect of sunlight on unstained eggs. Experiments with other dyes. Summary and discussion. Bibliography. Plates.

Note: The final volume in a series of papers from the Tortugas Laboratory. The work presents a detailed study of the action upon sea-urchin eggs of approximately forty different dyes begun as an experimental modification and control of cell division and leading to a study of the effects of duration of irradiation and of increased temperature on the development of the egg.

WEISS, PAUL

591.3
W 434
Principles of development; a text in experimental embryology. New York: Henry Holt and Company, 1939. 601 p. illus. 22 cm. \$5.00. 1762

Contents: Part I, The phenomena of development: A definition of development. An inventory of development. The problems of development. Part II, The methods of studying development: History of the embryological methods. Descriptive methods. Experimental analysis. Model experiments. Part III, Principles of development: The initiation of development. Preformed organization. Progressing organization. Gradual determination and the field concept. Reintegration. Regeneration. Malformations. Part IV, The development of the nervous system (neurogenesis): A description of the nervous system. Neurogenesis. The development of behavior.

Note: This book is suitable for use in advanced premedical and medical school courses. Also, it is of interest to pathologists for its extensive treatment of differentiation, regeneration, and cell potency, and to psychologists and physiologists for material on the development of the nervous system and the development of behavior. The illustrations include many reproductions of original diagrams and drawings.

WIEMAN, HARRY LEWIS

591.3
W 632
An introduction to vertebrate embryology. New York: McGraw-Hill Book Company, Inc., 1930. 411 p. illus. 24 cm. (McGraw-Hill publications in the zoological sciences) \$4.00. 1763

Contents: Development. Cytology in general, germ cells, maturation, fertilization, and cleavage. The development of the germ layers and the early embryonic organs in Amphioxus and the frog. The early development of the chick. The nervous system and the sense organs. The alimentary canal and its outgrowths. The circulatory system. The urogenital system. Intra-uterine development. The germ layers and embryonic membranes of the pig and man. Outline of organogenesis in the human embryo. The development of muscle, connective tissue, skeleton, and integument. Postnatal growth and development in man. Bibliography. Index.

Note: A text for an introductory course in vertebrate embryology, which while centering the laboratory work on the study of the chick and pig embryos, extends the work beyond these two forms. The book may be used in connection with laboratory work on cleavage and early stages in Amphioxus and the frog. The discussion throughout is from a comparative point of view. The bibliography lists 231 works which are referred to in the text.

man

MAN

General

DUBLIN, LOUIS ISRAEL, AND ALFRED J. LOTKA

Length of life; a study of the life table. New York: The Ronald Press Company, 1936. 400 p. illus. 22 cm. \$5.00. 1763a

Contents: The life span, the life table, and mean length of life. The life table as a record of progress—from antiquity to the end of the nineteenth century. Gain in expectation of life in the United States in recent times. Geographic distribution of longevity in the United States. Biological aspects of the life table. Inheritance of longevity. The contribution of medical and sanitary science to human longevity. Longevity in relation to physical condition with special reference to impairments. Longevity in relation to occupation. Application of the life table to population problems. Application to economic problems. Life tables based on experience of life insurance companies. Life table construction. Principal life tables.

Note: This study, prepared by two statisticians of the Metropolitan Life Insurance Company, while based on life expectancy tables does more than present the purely quantitative aspects of the subject. It deals also with the biological and sociological circumstances which determine the duration of human existence, topics which will be of interest to the general public and workers in the fields of medicine, public health, sanitary science, and social planning. The appendix contains a large collection of life tables, including those representing the mortality in the United States at the time of the 1930 census. These are separated according to color, sex, location, and state.

HOLMES, SAMUEL JACKSON

The Negro's struggle for survival, a study in human ecology. Berkeley, Calif.: University of California Press, 1937. 296 p. illus. 24 cm. \$3.00. 1763b

Contents: Preface. The interracial struggle for existence. The growth of the Negro population. The stabilized rate of natural increase among the Negro population. The trend of Negro mortality. The selective action of disease. Infant mortality. The Negro birth rate. Will the whites absorb the blacks? Negro migration and its biological effects. Concluding considerations. Appendix. References. Index.

Note: A study based upon an investigation of birth rates, death rates, infant mortality, immunity, and susceptibility to disease, the causes and biological effects of migration, the results of race mixture, and the influence of other forces which affect the natural increase of peoples. The author, a biologist, treats his theme from the viewpoint of one who observes the competition of two rival species inhabiting the same territory.

HOWELLS, WILLIAM WHITE

Mankind so far. Garden City, N.Y.: Doubleday, Doran and Company, Inc., 1944. 319 p. illus. 23 cm. (The American Museum of Natural History. Science series. Vol. v) \$4.00. 1763c

Contents: Animals and the coming of man: Evolution. The vertebrates. Mammals. Primate order. Man and the anthropoids. Primate evolution. Fossil anthropoids. Descent of man. Man and the coming of Homo sapiens: the Pleistocene. Fossil men. Pithecanthropus and Sinanthropus. Pittdown man. The Neanderthals. Other members of the genus Homo. Upper Paleolithic, enter Homo sapiens. Ancient moderns, lower Paleolithic. Origin of Homo sapiens. Homo sapiens and the coming of races: Nature and origin of races. Europe and the white races. Asia. American Indian. White and black Africa. Islands of the Pacific. Racial history of the world, 1492 to 1,000,000 A.D. Index.

Note: Not only is man's physical development described and

analyzed, but the growth of his brain through the early prehistoric types is discussed in detail. A scientifically accurate account for the general reader.

HUNTINGTON, ELLSWORTH

Season of birth; its relation to human abilities. New York: John Wiley & Sons, Inc., 1938. 473 p. illus. 22 cm. \$3.50. 1763d

Contents: Season of birth. The basic animal rhythm, Belgium. Fasts, feasts and human fallibility, Russia. Climatic extremes and migration: Japan and Massachusetts; Japan compared with Belgium; births in Massachusetts. Secular changes in season of birth. American variations in season of birth. Other geographical variations. Length of life. Sex, season and climate. Sex ratios, race and birth rank. Sex ratios and cultural environment. Survival and inheritance. Leadership, birth rank, and season of birth. Genius and season. A test by countries. Temperature, health and genius. The abnormal and the insane. The evolution of *homo sapiens*. The seasons and human progress. Index.

Note: A study of the comparative well-being of persons born in different seasons of the year, as proof of the contention that the human race, like other species, has a definite season for reproducing. Data presented in graph form are used to show that season of birth definitely and significantly influences length of life, chances of a successful life, chances of survival, and several other existence factors of later life.

LEWIS, JULIAN HERMAN

The biology of the Negro. Chicago, Ill.: The University of Chicago Press, 1942. 433 p. illus. 23 cm. \$5.00. 1763e

Contents: Population and vital statistics. Anatomy of the Negro. Biochemical and physiological characteristics. Medical diseases. Surgical diseases. Obstetrics and gynecology. Diseases of the skin. Diseases of the eye, ear, nose and throat. Dental diseases.

Note: Differentiating between biological and environmental factors in disease, the author examines the greatest liabilities of the Negro—his excessive morbidity and mortality rates from heart disease, tuberculosis, and syphilis. He suggests that the two last-mentioned diseases are more virulent in Negroes because they are four hundred or more years younger in them than in white people. The Negro's assets are his birth rate, his physical stamina, and his resistance to malaria, exanthemata, and certain surgical conditions. When a balance is struck between the assets and liabilities of the Negro in his struggle with his environment, which includes disease, it is to be found in his favor. The book is for anthropologists and biologists, sociologists and doctors.

ROMER, ALFRED SHERWOOD

Man and the vertebrates. Third edition. Chicago, Ill.: The University of Chicago Press, 1941. 405 p. illus. 23 cm. \$4.75. 1763f

Contents: Vertebrate beginnings. Modern fishes. The conquest of the land. The frog. The origin of reptiles. Ruling reptiles. The origin of birds. The origin of mammals. Varied reptilian types. Flesh-eating mammals. Hoofed mammals. More ungulates. A diversity of mammals. Primates: lemurs, monkeys, apes, man. Human origin. Human races. The human body. Development of the human body. A synoptic classification of vertebrates. Phylogenetic charts of the vertebrates.

Note: The scientific story of the evolution of man and of the primitive forms of life which contributed to the development of the body of man. A University of Chicago "New Plan" text. This third revised edition is considerably enlarged with new material, including two important chapters on human origins and human races, a new chapter on the frog and a new section on glands of internal secretion.

SCHEINFELD, AMRAM

Women and men. Illustrated by the author.
New York: Harcourt, Brace and Company,
1944. 453 p. illus. 21 cm. \$3.50. 1763g

Contents: Myths and muddles. The seeds. The two roads. The boy-girl ratio. Growing at odds. The weaker sex: males. First steps. Brain sprouts. Budding personalities. Puberty: the female. Puberty: the male. Crossing the bridge. The two machines. The sick list. Women without men. Trait division. Of mice and women. Sex life. Crime and punishment. Fine feathers. Division of labor. Passing the test. Achievement and genius. Dominance. Equality for women. The Soviet experiment. Pitfalls of the past. Marriage of tomorrow. Appendix. Bibliography. Index.

Note: A well-written and scientifically accurate book for the general reader and non-specialist. It describes in non-technical language the development of the sexes from the conception of the child through the prenatal stages and then from birth through infancy, childhood, adolescence, and maturity. The biological differences between the sexes are emphasized throughout, with less attention paid to cultural factors. The text is keyed to an extensive bibliography of books and periodical articles. Numerous cartoon-type graphs are used as illustrations.

SHELDON, WILLIAM HERBERT

The varieties of human physique; an introduction to constitutional psychology. With the collaboration of S. S. Stevens and W. B. Tucker.
New York: Harper & Brothers, 1940. 347 p. illus. 24 cm. \$4.50. 1763h

Contents: Introduction and summary. The main historical thread. Development of the technique of somatotyping. How to proceed in somatotyping. Some theoretical considerations. Description of the somatotypes. Toward a constitutional psychology. Appendixes: Tables for somatotyping. Nine somatotypes of women. Bibliography. Index.

Note: The author's endeavor in this scientific study is to establish criteria and procedures for a practical method for segregating and classifying the human physique. The three criteria adopted are endomorphy, which means relative predominance of soft roundness throughout the various regions of the body, mesomorphy, which means relative predominance of muscle, bone, and connective tissue, and ectomorphy, which means relative predominance of linearity and fragility. The author presents the results of his classifications of a large number of cases, but his main object is to establish a scientific technique for further study of the subject. The main bibliography is restricted to a relatively small number of titles, but these titles are annotated.

Prehistoric Man

BONIN, GERHARDT VON

The Magdalenian skeleton from Cap-Blanc in the Field Museum of Natural History. Urbana, Ill.: University of Illinois Press, 1935. 76 p. illus. 28 cm. (Illinois medical and dental monographs. Vol. I, no. 1) Paper, \$1.00. 1763i

Contents: Introduction. Description of the Cap-Blanc skeleton: Skull. Trunk. Upper extremity. Lower extremity. Age, sex, and stature. Conclusion. Literature cited. Plates. Index.

Note: A presentation of detailed measurements of the only Paleolithic human specimen in the care of an institution in the United States.

HRDLICKA, ALEŠ

The skeletal remains of early man. Washington: The Smithsonian Institution, 1930. 379 p. illus. 24 cm. (Smithsonian miscellaneous collections. Vol. 83. Publication no. 3033) Paper, \$2.25. 1763j

Contents (abridged): The glacial period. Cultural subdivisions of the period of early man and their approximate correlation with geologic conditions. The ancient skeletal remains of man. Tertiary man. The Pithecanthropus. The Eoanthropus. *Homo heidelbergensis*. The Rhodesian man. The Neanderthal family. The Neanderthal skull and bones. The skull of Gibraltar. The Spy skeletons. The diluvial man of Krapina. The Ebringsdorf remains of early man. The Taubach finds. The Pleistocene man of Jersey (England). The fossil man of La Chapelle-aux-Saints. The remains of La Ferrassie. The La Quina remains. The Le Moustier man. The Galilee skull. The Rome skull. The La Naulette jaw. The Šipka jaw. The Malarnaud jaw. The Bañolas jaw. Résumé of the physical characteristics of Neanderthal man. The teeth of early man. Addendum: The Sinanthropus. Index.

Note: A treatise for the advanced student and research worker in anthropology, presenting the original accounts and the most reliable information in general on the skeletal remains of man. In every case dealt with, the remains were seen and studied personally by the author and original measurements taken. The site of discovery was in each case visited and examined. While no specific theories are offered or defended, several suggestions and interpretations based on general acquaintance with the field are given relative to cultural and anatomical evolution. The geology of the strata in which the remains were found is described and illustrated, and there are numerous photographs and drawings of the various finds, together with detailed measurements of each part. Bibliographies appear at the end of each chapter.

JENKS, ALBERT ERNEST

Pleistocene man in Minnesota; a fossil homo sapiens. With a chapter on The pleistocene geology of the Prairie Lake region by George A. Thiel. Minneapolis: The University of Minnesota Press, 1936. 197 p. illus. 31 cm. \$7.50. 1763k

Contents: History and documentation of the find and site. The Pleistocene geology of the Prairie Lake region. The skeleton as a whole. The cranium. The cranial vault as a whole. Specific areas of the face. The teeth. Upper extremities. Lower extremities and stature. Vertebral column, ribs and sternum. Scapula, clavicles and pelvis. Artifacts and minor objects found with the Minnesota skeleton. Conclusions. Appendix. Bibliography cited. Index.

Note: A systematic description for scientists of the skeleton found June 16, 1931.

MACCUDY, GEORGE GRANT, EDITOR

Early man, as depicted by leading authorities at the International Symposium, the Academy of Natural Sciences, Philadelphia, March, 1937. Introduction by John C. Merriam. Illustrated with 27 plates and 54 text cuts. Philadelphia: J. B. Lippincott Company, 1937. 362 p. illus. 23 cm. \$5.00. 1763l

Contents (abridged): A review of the stratigraphy of Java and its relations to early man, by G. H. R. von Koenigswald. The Near East as a gateway of prehistoric migration, by Dorothy A. E. Garrod. Mount Carmel man, his bearing on the ancestry of modern races, by Sir Arthur Keith and Theodore D. McCown. Late Palaeolithic man in northernmost Norway, by A. W. Borgger. Pollen analysis as an aid in dating cultural deposits in the United States, by Paul B. Sears. Pleistocene land and fresh-water Mollusca as indicators of time and ecological conditions, by Frank Collins Baker. Early man in America: what have the bones to say? by Aleš Hrdlička. First peopling of America as a chronological problem, by Herbert J. Spinden. Pleistocene glacial stratigraphy of North America, by Paul MacClintock. Geology of the Folsom deposits in New Mexico and Colorado, by Kirk Bryan. The Folsom problem in American archaeology, by Frank H. H. Roberts, Jr. The Pleistocene mammals of North America and their relations to Eurasian forms, by Edwin H. Colbert. Early man in Java and *Pithecanthropus erectus*, by Eugène Dubois.

Note: A collection of 36 technical papers, read at the International Symposium on Early Man, which review the evidence and discuss new theories in the light of recent knowledge of the remains of early man, involving contributions from the fields of geology, paleontology, archaeology and anthropology.

SAWTELL, RUTH OTIS

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 Azilian skeletal remains from Montardit (Ariège) France. Seven plates and 2 illustrations in the text. Cambridge, Mass.: The Museum, 1931. 36 p. illus. 24 cm. (Peabody Museum of American Archaeology and Ethnology, Harvard University. Papers. Vol. xi, no. 4) Paper, \$0.75. 1763m

Contents: Introduction: The site. Stratification. Description of skeletal remains. Osteological catalogue. Age and sex of Azilian skeletons. Cranial characters of Azilians of Montardit. Maxilla and mandible. Dentition. Extremities. Stature. Vertebrae. Shoulder-girdle and pelvis. Patella and footbones. Pathology. Morphological rating. Comparative data: Upper Palaeolithic. Mesolithic. Summary. Bibliography. Tables: Vertebrae. Right patella, male. Tarsus. Mean ratings of crania. Morphological rating of Montardit I (Hooton scale). Montardit measurements compared with Mesolithic and Palaeolithic male crania.

Note: A summary of a study of the skeletal remains found in Tuto Bionleto (Trou Violet), which were in the Musée d'Histoire Naturelle de Paris at the time of printing. Stratification found in the excavation is completely described by Paul and Ida Treat Vaillant-Courtouriers in *L'Anthropologie*, volume 38 (1928), pages 217-243. The bibliography lists 33 references.

TERRA, HELLMUT DE, AND HALLAM LEONARD MOVIUS, JR.

Research on early man in Burma. With supplementary reports upon the Pleistocene vertebrates and mollusks of the region, by Edwin Harris Colbert and Joseph Charles Bequaert, and on Pleistocene geology and early man in Java, by Hellmut de Terra. Philadelphia: The American Philosophical Society, 1943. 200 p. illus. 30 cm. (American Philosophical Society. Transactions. New series, Vol. 32, part iii) \$3.00. 1763n

Contents (abridged): Part i, The Pleistocene of Burma, by Hellmut de Terra: Geographical elements of the region. Geological observations in the Irrawaddy basin; in the Northern Shan Highlands. The Pleistocene history of Burma in relation to that of neighboring regions. Cyclic nature of Pleistocene stratigraphy. Part ii, The stone age of Burma, by Hallam L. Movius, Jr.: The Palaeolithic period. The Neolithic period. Reconnaissance in the Southern Shan States. Part iii, Pleistocene vertebrates collected in Burma by the American Southeast Asiatic Expedition for Early Man, by Edwin H. Colbert: The Pleistocene fossil beds of Burma. The Pleistocene vertebrate faunas of Burma. Post-Pleistocene fossils. Fossils of unknown age. Relationships and correlation of the Pleistocene mammalian faunas of Burma. Part iv, Fresh-water shells from cave deposits in the Southern Shan States, by J. Bequaert. Part v, Pleistocene geology and early man in Java, by Hellmut de Terra: Review of the discoveries. Summary of the data. Beginning of the Pleistocene in Java. The Lower Pleistocene site of Modjokerto in eastern Java. The Middle Pleistocene sites of *Pithecanthropus* in central Java. The Upper Pleistocene terraces and the age of Solo man. The stratigraphic position of the Palaeolithic cultures of Java. Java and the question of land-bridges. Summary of prehistoric migrations to Java.

Note: In this paper are recorded the results of the American Southeast Asiatic Expedition for Early Man, sponsored by the Academy of Natural Sciences of Philadelphia and the Peabody Museum of Harvard University, with assistance from the American Philosophical Society, the Carnegie Institution of Washington, and the Museum of Comparative Zoology, Harvard University. At the International Symposium on Early Man held under the auspices of the Academy of Natural Sciences of Philadelphia in 1937, a discussion was held on fossil man in Asia. It was felt that the geological chronology of early man, previously worked out in India, required further elucidation with special reference to an eastward extension into China and Java, so that the new data on human origins might be integrated. Data, both stratigraphical and archeological, were lacking on the regions lying between India and China on one hand and India and Java on the other. Consequently the expedition to Burma and Java was planned with the chief objectives: (1) to establish a chronology

for the alluvial formations of the Irrawaddy valley, and (2) to collect new data on the stone age of this tropical land.

Heredity

BURLINGAME, LEONAS LANCELOT

Heredity and social problems. New York: McGraw-Hill Book Company, Inc., 1940. 369 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences; A. F. Shull, consulting editor) \$3.50. 1763o

Contents: Introduction. Reproduction. The mechanism of heredity. Mendel's laws. Sex and heredity. Gene linkage and crossing-over. The interaction of genes. Quantitative variation and multiple genes. Genes and their mode of action. Heredity and environment. Heredity of physical traits. Heredity and intelligence. Genetic aspects of race. Genetic analysis of population problems. The genetic aspects of war and migration. Race problems. The genetics of mental deficiency. Distribution of intelligence in a changing population. Heredity and medical problems. Heredity in insanity and crime. Heredity in education and government. Bibliography. Index.

Note: A brief introduction to the biology of reproduction and its consequence,—heredity. The author shows how and when this knowledge can or cannot be applied to social problems in the broader sense, and acquaints the reader with the possible applications of biology to human affairs.

GLASS, HIRAM BENTLEY

Genes and the man. New York: Teachers College, Columbia University, 1943. 386 p. illus. 22 cm. (The science in modern living series; basic science material for use in modern education) \$3.50. 1763p

Contents (abridged): Life begins—the single cell. The origin of differences in hereditary patterns. The genetic basis of sex. The basis of growth and development. From potentialities to realization. On growing old. Index.

Note: A concept of life in genetic terms which aims to provide a basis for understanding the growth and development of the human individual from birth to maturity and through the subsequent slow decline of old age, with an appreciation of the physical bonds which link previous and succeeding generations. The work is not intended as a textbook in the strict sense but is well adapted for college courses as collateral reading, at the same time affording a new introduction to genetics for the intelligent layman. The volume attempts to present a new outlook in genetics, cytology, and embryology by describing the operation and interaction of those biological factors which make the physical man. References are given in footnotes.

HOLMES, SAMUEL JACKSON

Human genetics and its social import. New York: McGraw-Hill Book Company, Inc., 1936. 414 p. illus. 23 cm. \$3.50. 1763q

Contents: Heredity and its cellular basis. Are acquired characters inherited? Mendel's law. Heredity and sex. The interaction of factors. The linkage of hereditary traits. Variability—its kinds and its causes. The measurement of variation. Heredity in man. Heredity and environment. Heredity in mental defect and disease. Nature and nurture in mental development. Genetic factors in crime and delinquency. The social-problem people. Choice in mating. The birth rate and the causes of its decline. The differential birth rate. Death rates. The selective action of mortality. The biological effects of war. The effects of population growth. The growth of cities and its demographic effects. The biological effects of migration. Inbreeding and cross-breeding. Proposed measures for race betterment.

Note: A study of the light which genetics may throw on many social problems and of the way in which evolutionary factors are working in our civilization. The book discusses the basic principles of heredity and what they signify for human biological evolution, differential birth rates, marriage and death rates and their evolutionary import, and some of the larger problems of population growth and migration.

JENNINGS, HERBERT SPENCER

The biological basis of human nature. New York: W. W. Norton & Company, Inc., 1930. 384 p. illus. 22 cm. \$4.25. 1763r

Contents (abridged): The original differences between individuals and their consequences. How do we know that the genes are realities, and that they affect characteristics? How do the genes act in producing the individual? Role of environment in determining the characteristics of individuals. The relative importance of heredity (genes) and environments. Genes and environment in relation to the mind. Recent transformation of the knowledge of heredity and development. Biological fallacies and human affairs. What can we hope from eugenics? The biological basis of marriage and the family. Race mixture and its consequences. Biology and selves. How the inherited constitution becomes changed. Environment and the future of the race. Inheritance of acquired characters. Diverse doctrines of evolution. Index.

Note: This volume is an attempt to present those aspects of modern experimental biology that are of most interest in considering the problem of human personality and society. It deals with the origin, development, and nature of the traits which distinguish individuals, and which in man make up character; and with some of the relations of these matters to social questions. The material is drawn mainly from the sciences of genetics and experimental embryology, and effort is made to present it in non-technical language. Although the considerable amount of experimental research which has been done between 1930 and 1944 may supersede some of the material of the present work, the book is still valuable as a general introduction to the study of human behavior. References appear at the end of each chapter.

NEWMAN, HORATIO HACKETT, AND OTHERS

Twins, a study of heredity and environment, by Horatio H. Newman, Frank N. Freeman and Karl J. Holzinger. Chicago, Ill.: The University of Chicago Press, 1937. 369 p. illus. 25 cm. \$4.00. 1763s

Contents: Part I, Introduction and biological aspects: Previous studies of the problem. A critique of methods and the problem and method of the present study. The two kinds of twins and the methods of diagnosing them. Causes of differences in identical twins reared together. Part II, Comparison of fifty pairs of identical and fifty pairs of fraternal twins: Comparison of the differences of the two groups. Statistical analysis of unseparated twins. Resemblance in handwriting of identical and fraternal twins reared together. Part III, Study of nineteen pairs of identical twins separated in infancy: Gathering the separated cases; proofs of monozygosity and degree of separation. Human-interest stories as told by twins. Case studies. Summary of the findings in the case studies. Statistical analyses of separated twins. General summary and interpretation. Index.

Note: A record of ten years' research by a specialist in the biology of twins (Newman), a psychologist (Freeman), and a statistician (Holzinger), into the mental and physical similarities of identical twins reared together compared with fraternal twins reared apart. Compares fifty pairs of identical and fifty pairs of fraternal twins. Studies nineteen pairs of identical twins separated in infancy (only one previous case of this sort having been reported).

PEARL, RAYMOND, AND RUTH DEWITT PEARL

The ancestry of the long-lived. Baltimore: The Johns Hopkins Press, 1934. 168 p. illus. 23 cm. \$3.00. 1763t

Contents: The problem. The material. Characteristics of the compared groups. The effect of certain types of selection of the immediate ancestry on the age characteristics of the progeny. Birthplace, race stocks, and alcohol habits of the group of nonagenarians and centenarians. Variation in TIAL. Paternal and maternal, male and female, and generational contributions to TIAL. Individual contributions to TIAL. Living age and TIAL. Biometric comparisons. Actuarial comparisons. Siblings of the longevous. Correlations. Matings that produced the longevous. Summary and discussion. Index.

Note: This book represents one stage in the development of the general program of investigation of human life duration in the Department of Biology of the School of Hygiene and Public Health of the Johns Hopkins University. Some of the material appeared previously as No. VI of the series of *Studies on human longevity* in the journal *Human biology*. The material on ancestry and age characteristics, and the chapter on ancestral longev-

ity and living age, are new, as are the bibliographic references and much of the statistical data. The symbol TIAL, used in the Contents is an abbreviation for the "total immediate ancestral longevity," taken to mean the sum of the ages at death of the six immediate ancestors of an individual.

SCHEINFELD, AMRAM

You and heredity. Assisted in the genetic sections by Morton D. Schweitzer. Illustrated by the author with four color-plates and seventy-five drawings, maps, and diagrams. New York: J. B. Lippincott Company, 1939. 434 p. illus. (part col.) 22 cm. \$3.00. 1763u

Contents (abridged): A new science. Life begins at zero. What we "don't" inherit. Myths of mating. The perilous road to birth. "Boy or girl?" Peas, flies and people. Color: eye, hair, skin. What will your child look like? Duplicated humans. The Dionnes. The "black" genes. Our principal enemies. For men only. Sick minds. How long will you live? The twilight sexes. How do you know the baby's yours? The battle of the "IQ's." Musical talent. From aptitude to genius. Enter the villain. Sexual behavior. Race. The giddy stork. Eugenics: negative. Program for tomorrow. You and heredity. Appendix. Index.

Note: A comprehensive account of modern knowledge of human heredity written expressly for the layman. In untechnical everyday language it carries the reader from the meeting of a human egg and sperm through all stages of development and subsequent life. Contains most of the information known about the inheritance of features, diseases and defects, intelligence, crime, personality, sexual characteristics and racial differences, simplified through the use of charts and diagrams for the average reader. About 120 references to further reading are listed.

WHITNEY, DAVID DAY

Family treasures; a study of the inheritance of normal characteristics in man. Lancaster, Pa.: The Jaques Cattell Press, 1942. 299 p. illus. 25 cm. (Humanizing science series) \$3.50. 1763v

Contents: The family. The individual. The hair. The eyes. The mouth, lips, teeth, and tongue. The ears. The nose, cheeks, chin and jaws. The hands. The feet. The body. Temperaments and special abilities. Good health. Birthmarks, acquired characters, and diseases. Sex. The nature of man. Glossary. Index.

Note: An illustrated story of the inheritance of normal characteristics in man, this book discusses first the family, then the individual, and finally individual characteristics—and explains normal traits appearing in families during consecutive generations. The illustrations include a large number of reproductions of photographs showing inherited characteristics.

Growth

ABERNETHY, ETHEL MAE

Relationships between mental and physical growth. Washington, D.C.: Society for Research in Child Development, National Research Council, 1936. 80 p. illus. 23 cm. (Society for Research in Child Development. Monographs. Vol. I, no. 7) Paper, \$0.75. 1763w

Contents: Introduction. Previous investigations of the relationship of the intelligence of children to certain physical traits. Correlation studies of the birthday measurements of Laboratory School children. Comparison of mental- and physical-growth curves based upon averages. Variability in mental and physical measures in succeeding ages. The relation of age of pubescence to mental growth. Correlation between mental and physical traits of adults. Summary and conclusions. Bibliography. Appendix.

Note: The purpose of the study reported in this publication was to make a comparatively thorough analysis of relationships between mental and physical growth, with interest centering in the determination of the extent to which rate of mental development is correlated with rate of physical growth in the repeated measurements of children. The subjects were 179 boys and 178 girls of ages 8 through 17 from the Laboratory Schools

of the University of Chicago measured over a period of 11 years, 140 young women students in a small southern college, and 140 university men.

BOYD, EDITH

The growth of the surface area of the human body. With a foreword by Richard E. Scammon. Minneapolis, Minn.: University of Minnesota Press, 1935. 145 p. illus. 26 cm. (University of Minnesota. Institute of Child Welfare. Monograph series. No. 10) \$5.00. 1763x

Contents: Methods of measuring surface area: Coating methods. Methods of surface integration. Method of triangulation. Experimental error in measuring surface area. Methods of estimating surface area: Photographic methods. Linear methods. Experimental error in estimating surface area. Formulae for the relation of surface area to the major dimensions of the body: Formulae based on the proportionality of homologous dimensions of similar bodies. Formulae based on the proportionality of the human body to regular geometric solids. Miscellaneous groups of equations. Formulae obtained by empirical methods. Growth of the surface area of the body and its parts in the pre-natal and postnatal periods of life: Absolute and relative increment of surface area. Proportionate parts. Multiples of birth size. Rates of growth. Summary. Bibliography. Index.

Note: An extensive analysis of the surface area of the body, describing its development as a whole. Graphic and numerical methods are used to present findings. The bibliography lists 185 references.

BOYNTON, BERNICE

The physical growth of girls; a study of the rhythm of physical growth from anthropometric measurements on girls between birth and eighteen years. Iowa City, Ia.: University of Iowa, 1936. 105 p. illus. 23 cm. (University of Iowa studies. Studies in child welfare. Vol. xii, no. 4) Paper, \$1.35. 1763y

Contents: The problem: Definition of terms. Purposes of study. Discussion of data. Mean growth: Preparation of data for analysis. Central tendency. Comparison of mean curves. Contrast in mean growth values. Variability. Percentage analysis of mean growth: Method of presentation. Discussion of percentage rate curves. Sex differences: Mean growth. Relative growth. Variability. Individual growth: Individual curves of stature. Prediction of stature between six and twelve years. Stature curves from nine to sixteen years. Summary and conclusions: Results. Problems for further research. References. Appendix.

Note: The data analyzed consists of 55,886 observed measurements, distributed among 22 physical dimensions. The individuals examined were homogeneous as to race, sex, and geographic location, but slightly diverse in regard to ethnic stock and rather superior in cultural and socio-economic status.

FLORY, CHARLES DAVID

Osseous development in the hand as an index of skeletal development. Washington, D.C.: Society for Research in Child Development, National Research Council, 1936. 141 p. illus. 23 cm. (Society for Research in Child Development. Monographs. Vol. I, no. 3) Paper, \$0.75. 1763z

Contents: Preface. Introduction. Statement of the problem. Obtaining the data. Methods of evaluating carpal development. Limitations of the data. The literature of the development of the human hand: Ossification as an index of development. Techniques employed to obtain an anatomical index. The carpal bones. The epiphyses in the hand. Sex differences in the ossification of the hand. Relationship between carpal ossification and other indices of development. Relationship between carpal and mental development. Carpal development in abnormal children. Anomalies of development in the hand. Sesamoid bones. A quantitative analysis of carpal growth: Carter's technique. Growth of the carpal bones. Changes in the ossification ratio. Variability in carpal development. Norms for laboratory school children. A qualitative analysis of carpal development. Develop-

ing a qualitative scale. The appearance of epiphyses. Using the scale to evaluate growth. The reliability of the skeletal-months technique. The variability of the skeletal-months ratings. A comparison of a quantitative and a qualitative method for evaluating carpal development: Relationship between ossification ratio and skeletal months. Predicting skeletal maturity. Predicting puberty from skeletal development. Some individual growth curves. Growth of different maturity groups. Summary and conclusions. Bibliography. Index.

Note: Four major problems have been considered in the investigation reported in this monograph: a summary of the literature on osseous development in the hand; progress in carpal development as shown by quantitative measurements; the selection and use of age standards for evaluating carpal development; and an evaluation of several different techniques for determining the degree of skeletal development as shown in the hand. The data upon which the study was chiefly based were more than 5,000 roentgenograms taken over a period of more than ten years in the University of Chicago Laboratory Schools of the right hands of children between five and 17 years of age.

GREULICH, WILLIAM WALTER, AND OTHERS

Somatic and endocrine studies of puberal and adolescent boys, by William Walter Greulich, Ralph I. Dorfman, Hubert R. Catchpole, Charles I. Solomon, Charles S. Culotta. Washington, D.C.: Society for Research in Child Development, National Research Council, 1942. 85 p. illus. 23 cm. (Society for Research in Child Development. Monographs. Vol. vii, no. 3. Serial no. 33) Paper, \$1.50. 1763aa

Contents: Preface. Section I, Somatic studies: Introduction. Primary and secondary sexual characters: The growth and development of the external genitalia. The appearance and development of special types of terminal hair. The axillary sweat glands. The male mammary gland. The voice change. The order of appearance of some external changes associated with sexual maturation in boys. A proposed method of classifying puberal and adolescent boys: The distinguishing features of the five maturity groups. Skeletal status and maturity groups. Section II, Endocrine studies: Part I, Determination of estrogenic and androgenic substances in the urine of boys: Introduction. Methods and materials. Results. Analysis of the data: Androgens. Estrogens. Part II, Determination of pituitary gonadotrophic hormone in the urine of boys: Introduction. Methods and materials. Results. Analysis of the data. Discussion: Prepuberal boys. Puberal and adolescent boys. Significance of gonadotrophin excretion in adolescence. Bibliography.

Note: The authors of this monograph are connected with the Adolescence Study Unit, School of Medicine and Institute of Human Relations, Yale University, where the studies were carried on. Section I reports the findings of the study of the physical development of a group of puberal and adolescent boys. In it the attempt is made to define the successive stages in their development during puberty and adolescence, and, in some instances, to relate those stages to their co-existing skeletal and endocrine statuses. The subjects were 757 white boys ranging in age from 10 to 15 years when the observations were begun. The examinations of most of the boys were repeated at intervals over a period of four years. Section II reports the results of experiments to determine the quantities of estrogenic and androgenic substances and of pituitary gonadotrophic hormone in the urine of boys, and comments upon their significance.

MEREDITH, HOWARD VOAS

Physical growth from birth to two years: I. Stature. A review and synthesis of North American research for the period 1850-1941. Iowa City, Ia.: University of Iowa Press, 1943. 255 p. illus. 22 cm. (University of Iowa studies. Studies of child welfare. Vol. xix) Paper, \$1.50. 1763ab

Contents: Foreword. Introduction. Part I, Synthesis of North American research on stature in infancy 1850-1941. Average stature: overall view. Secular differences. Racial differences. Geographic differences. Socio-economic differences. Differences with parity, age, and stature of mother. Sex differences. Differences among serial records for individual infants. Stature of

infants born prematurely. Relationships between stature and disease. Stature in relation to diet. Part II. Annotated bibliography on infant stature covering studies made in North America prior to 1942. Index of names. Subject index. Appendix: twenty-three tables displaying central tendency and variability values for stature at nine infancy ages.

Note: Part I of this publication summarizes the literature up to 1942 dealing with research on the stature of infants, presenting an analysis of data relevant to eleven problems of stature. Part II is an annotated bibliography of 129 studies on the subject, containing an abstract of each study with the anthropometric data on infant stature reduced to a common scale of reference.

MEREDITH, HOWARD VOAS

Physical growth of white children; a review of American research prior to 1900. Washington, D.C.: National Research Council, Society for Research in Child Development, 1936. 83 p. illus. 23 cm. (Society for Research in Child Development. Monographs. No. 2) \$0.75. 1763ac

Note: The scope of this technical paper is limited in three ways. First, attention is confined to studies dealing with growth in external bodily dimensions of the physically normal human subject. Second, only investigations are considered which were carried out entirely or in part on American white children between the age period from birth to eighteen years. Finally, the review is limited to research reports and critical evaluations of the procedures and findings of research workers published prior to 1900. The studies are reviewed in chronological sequence, the earliest dating from 1858. Sample quotations from each study are given, to which the present author adds a critical summary of the original findings. The list of references contains 83 entries. There is an author and a subject index.

MEREDITH, HOWARD VOAS

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The rhythm of physical growth; a study of eighteen anthropometric measurements on Iowa City white males ranging in age between birth and eighteen years. Iowa City, Ia.: The University of Iowa studies. Studies in child welfare. Vol. XI, no. 3) Paper, \$1.00. 1763ad

Contents: Introduction. Growth in the group: central tendency and variability. Growth in the group: percentage rate. Growth of the individual. Summary and conclusions. References. Appendix: Anthropometric measurement technique used at the Iowa Child Welfare Research Station.

Note: This study describes and analyzes certain aspects of the rhythm and rate of physical growth in boys up to the age of 18. The data upon which the study is based consisted of a total of 93,232 measurement values on 1,243 white males of 31 successive age groups under 18 for the following: stature, sitting height, bi-deltoid diameter, bi-trochanteric diameter, transverse diameter of thorax, antero-posterior diameter of thorax, thoracic circumference, body weight, maximum head length, maximum head breadth, bi-condylar diameter of left femur, bi-condylar diameter of left humerus, strength of grip, breathing capacity, skin and subcutaneous tissue at the thorax front, skin and subcutaneous tissue at the thorax back, skin and subcutaneous tissue at the upperarm front, skin and subcutaneous tissue at the upperarm back. Many tables and graphs illustrate the publication. A companion study is presented in *The physical growth of girls*, by Bernice Boynton (see Index).

RICHEY, HERMAN GLENN

The relation of accelerated, normal, and retarded puberty to the height and weight of school children. Washington, D.C.: Society for Research in Child Development, National Research Council, 1937. 67 p. illus. 23 cm. (Society for Research in Child Development. Monographs. Vol. II, no. 1. Serial no. 8) Paper, \$0.75. 1763ae

Contents: Introduction. The weight and height of Laboratory School children. The relation of precocious, average, and retarded puberty to weight, height, and the growth rate: Weight of girls maturing at different ages. Variability in the weight of girls maturing at different ages. Weight of boys maturing at different ages. Variability in the weight of boys maturing at different ages. Height of girls maturing at different ages. Variability in the height of girls maturing at different ages. Height of boys maturing at different ages. Variability in the height of boys maturing at different ages. Sex differences in height and weight of groups of comparable physiological development. The relation of weight to height in girls and boys maturing at different ages. Summary and conclusions.

Note: This report considers the nature of the age curves of average height and weight, the relation of precocious, normal, and retarded physiological maturation to the heights and weights of boys and girls and the relationship between the variables, height and weight, in groups of children classified upon the basis of age at the onset of puberty. Data for the study were taken from the permanent records of the Laboratory Schools of the University of Chicago.

SAWTELL, RUTH OTIS

How children grow; an anthropometric study of private school children from two to eight years of age. Iowa City, Ia.: The University of Iowa studies. Studies in child welfare. Vol. V, no. 1) Paper, \$1.00. 1763af

Contents: Foreword. Preface. Introduction: Children. Technique and measurements. The growth of the body: Gross measures. The trunk. The extremities. Shoulder and pelvis. Head and face. Factors of growth. The ossification of the extremities: Introduction. Trends of ossification and bone growth. Head of the humerus. Ossification and stature. Dentition. The growth of the individual. References.

Note: This publication reports the results of a five-year study of the rate of growth in groups of private school children in three parts of the United States. Sequential measurements of the same children are presented and analyzed. The chapter on ossification, dealing with the gradual changing of infant cartilage to adult bone, was prepared from data collected on roentgenograms of the hands and wrists, feet and ankles, and heads of the humeri of the same groups of children.

SHUTTLEWORTH, FRANK KAYLEY

The physical and mental growth of girls and boys age six to nineteen in relation to age at maximum growth. Washington, D.C.: Society for Research in Child Development, National Research Council, 1939. 291 p. illus. 23 cm. (Society for Research in Child Development. Monographs. Vol. IV, no. 3. Serial no. 22) Paper, \$2.00. 1763ag

Contents: Methods of classifying according to age at maximum growth. Standing height: Ages at maximum growth. Growth trends in average standing height. Growth trends in average standing height arranged by age at maximum growth. The pattern of increments in standing height. Comparative data. The growth of children in general. Sex differences in stature at maturity. Tall versus short children. Changing variabilities in the standing height of boys. Racial stock and socio-economic status. The prediction of mature stature. Implications for a theory of physical growth. Sitting height and leg length: Growth patterns in average size. The pattern of annual increments. Racial stock and socio-economic status. Sitting height and leg length relative to standing height. Iliac diameter, chest breadth, and chest depth: Growth trends in average size. The pattern of annual increments. Racial stock and socio-economic status. Further implications for a theory of growth. Body weight: Growth trends in average weight. The pattern of annual increments. Racial stock and socio-economic status. Weight relative to other dimensions. Erupted teeth: Age at maximum growth and erupted teeth. Ages at which twenty-eight teeth were first observed. Head width and length: Sexual maturation and head dimensions. Head dimensions and erupted teeth. Head dimensions and MG-age. Racial differences. Cephalic indices. Intelligence: Cross-sectional studies. Exploratory longitudinal studies. Summary and conclusions: Data, problems, and procedures. The growth patterns of twenty-two dimensions in relation to menarcheal age and MG-age. Mis-

cellaneous findings. Implications for a theory of physical growth. Appendix.

Note: The investigation reported in this monograph was concerned with the growth patterns of the two sexes and of groups of cases with early or late growth spurts in standing height. The basic data were the repeated physical measurements on 1,553 cases collected by the Harvard Growth Study. The publication is the third of a series by the same author involving similar problems, procedures, and findings. The others are the author's *Sexual maturation and the physical growth of girls age six to nineteen* and *Sexual maturation and the skeletal growth of girls age six to nineteen* (see below).

SHUTTLEWORTH, FRANK KAYLEY

Sexual maturation and the physical growth of girls age six to nineteen. Washington, D.C.: Society for Research in Child Development, National Research Council, 1937. 253 p. illus. 23 cm. (Society for Research in Child Development. Monographs. Vol. II, no. 5. Serial no. 12) Paper, \$1.25. 1763ah

Contents: Methodological problems and specific hypotheses. The nature and limitations of the physical measurements of the Harvard Growth Study. The advantages of longitudinal data. Group patterns of growth in standing height. Individual patterns of growth in standing height. Sitting height and leg length. Iliac diameter, chest breadth, and chest depth. Body weight. Skeletal age. Erupted teeth. Racial similarities in patterns of growth. A correlational analysis of physical data and menarcheal ages. Contrasting patterns of the measurements and of the early and late maturing groups. Summary and implications. Literature cited. Appendix: Methods of dealing with certain limitations of longitudinal data. Methods of analysis and basic data. Index.

Note: The major problems of this study are defined as follows: first, what are the most appropriate statistical methods to be employed in the analysis of longitudinal data, that is, repeated measurements of the same children, and second, what are the patterns of physical growth among girls age 6 to 19 and what is the association between these patterns and the advent of the first menstruation. The subjects were 248 Boston school girls measured annually over periods of from five to twelve years in the course of the Harvard Growth Study and whose records include information concerning the first menstruation. A supplementary study by the same author is entitled *Sexual maturation and the skeletal growth of girls age six to nineteen* (see below).

SHUTTLEWORTH, FRANK KAYLEY

Sexual maturation and the skeletal growth of girls age six to nineteen. Washington, D.C.: Society for Research in Child Development, National Research Council, 1938. 56 p. illus. 23 cm. (Society for Research in Child Development. Monographs. Vol. III, no. 5. Serial no. 18) Paper, \$0.75. 1763ai

Contents: List of tables. List of figures. The problem. Historical backgrounds, original data, and procedures. Growth trends in average size of early, middle, and late maturing groups of girls in respect to twelve bony dimensions of the hand and wrist. Patterns of growth revealed by annual increments of early, middle and late maturing groups of girls. Contrasting growth patterns of the twelve measurements. Summary and interpretations. Literature cited.

Note: The continuation of an earlier study by the author, *Sexual maturation and the physical growth of girls age six to nineteen* (see above) made to investigate the differences in growth patterns of early and late maturing girls. In this study 103 girls were examined, and skeletal and physical data for various age groups have been charted and analyzed in a manner calculated to facilitate comparisons.

SIMMONS, KATHERINE

The Brush Foundation study of child growth and development. II. Physical growth and development. Washington, D.C.: Society for Research in Child Development, National Research Council, 1944. 87 p. illus. 23 cm. (Society for Research in Child Development. Mono-

graphs. Vol. IX, no. 1. Serial no. 37) Paper, \$1.25. 1763aj

Contents: Foreword, by William Walter Greulich. Sampling; the Regular Series of the Brush Foundation. Cross-sectional age-sex constants for 25 anthropometric dimensions. Cross-sectional age-sex constants for assessments of skeletal maturation of the hand and for the average of 6 areas, hand, foot, elbow, knee, hip, and shoulder. Stature-weight-skeletal age intercorrelations. Relative growth. Stature and weight self-predictability and the prediction of terminal stature. Correlations of IQ with stature, with weight, and with skeletal age. Summary. References.

Note: This publication contains a summary and a statistical analysis of the anthropometric data from the Brush Foundation "Regular Series children," a homogeneous group of 515 boys and 484 girls from the Cleveland area enrolled in the study at ages between 3 months and 14 years beginning in 1931 and measured regularly thereafter over a ten-year period for a total of 9,182 examinations. The following 25 anthropometric dimensions are reported: weight, standing height, horizontal length, sitting height, stem length, cristall height, symphysial height, anterior iliac spinous height, knee height, tibial length, acromial height, suprasternal height, acromial breadth, cristall breadth, trochanteric breadth, transverse chest, entire arm length, arm length, forearm length, hand length, chest girth expiration, chest girth inspiration, head length, head breadth, head height. Another publication dealing with the same group of children is *The Brush Foundation study of child growth and development. I. Psychometric tests*, by Elizabeth Ebert and Katherine Simmons (see Index).

STUART, HAROLD COE, AND OTHERS

The growth of bone, muscle and overlying tissues as revealed by studies of roentgenograms of the leg area: description of a method of evaluating these tissues, standards derived from a series of normal children examined periodically from birth to seven years and examples of the growth of individual children. By Harold C. Stuart, Penelope Hill and Constance Shaw. Washington, D.C.: Society for Research in Child Development, National Research Council, 1940. 190 p. illus. 23 cm. (Studies from The Center for Research in Child Health and Development, School of Public Health, Harvard University, III. Society for Research in Child Development. Monographs. Vol. V, no. 3. Serial no. 26. Harvard S.P.H. sub. series no. 3) Paper, \$1.25. 1763ak

Contents: The roentgenological method adopted for the quantitative appraisal of tissues. Norms derived from the measurements of the roentgenographic shadows. Percentage of total area represented by individual tissues and amounts of tissues per unit of tibial length. Correlations between measurements obtained from roentgenograms. Correlations between measurements from roentgenograms and other measurements. Patterns of growth as revealed by measurements of the roentgenograms of selected individuals. Conclusion. Literature cited. Appendix.

Note: This report deals primarily with the manner in which children grow in respect to the principal tissues of the leg, as revealed by roentgenological findings. The early chapters are concerned with the norms obtained from the group as a whole and the last chapter presents examples of different types of individual growth patterns. The subjects were about 100 boys and girls from neither well-to-do nor very poor families of Boston. In the case studies family background and social, dietary, and health factors are considered briefly in relation to the principal characteristics of the growth patterns revealed.

Anthropometry and Physical Anthropology

BOILLIN, MARY LOUISE

Determination of the interrelations, partial and multiple, between various anthropometric 370 672c

measurements of college women. New York: Teachers College, Columbia University, 1930. 63 p. illus. 23 cm. (Teachers College, Columbia University. Contributions to education. No. 450) \$1.50. 1763al

Contents: Part one, Validity of measures and selection of data: Introduction. Source of data, objectivity of examiners, and selection of data for further investigation. Method of treatment of the Wellesley data. Part two, Results and summary: The inadequacy of height-weight tables and the relative importance of other factors than height in weight determination. The importance of weight residuals and comparison of the result of this study with some of the results obtained on a younger group in the American Child Health Association's school health study. The use of the regression equation in weight prediction. The symmetry and asymmetry of late adolescence. Summary. Appendix: Basic data. Bibliography.

Note: The purposes of this study were: (1) to discover which, if any, anthropometric combinations have diagnostic value for determining weight expectancy in college women; (2) to find bases for construction of tables to facilitate such diagnoses as are found valuable in this study; (3) to develop relations implicit in combinations of skeletal measurements themselves. Data for the study were furnished by the records of the dimensions of 815 students at Wellesley College.

BOWLES, GORDON TOWNSEND

573.6
P68m
New types of old Americans at Harvard and at eastern women's colleges. Cambridge: Harvard University Press, 1932. 144 p. illus. 25 cm. \$2.50. 1763am

Contents: Purpose and material. Male students. Fathers and sons. Grandfathers and great-grandfathers. Brothers. Conclusions. Female students. Mothers and daughters. Sisters. Conclusions. Results of the study of new physical types. Male and female students compared. Causes of increase in stature. Bibliography.

Note: This study defines for the first time the bodily changes which have taken place in three successive generations of old Americans. It is based upon the analysis of gymnasium records at Harvard University and at Vassar, Smith, Wellesley, and Mount Holyoke Colleges. At Harvard the author has compared the dimensions of a large number of students with those of their fathers and grandfathers who preceded them in attendance upon this institution. In the women's colleges the study has been restricted to mothers and daughters. The unique feature of the work is its discussion of the physique of direct descendants and ascendants, rather than of unrelated college groups of different decades or periods. The results demonstrate certain evolutionary modifications in bodily form which are of primary importance not only to students of human heredity but to all persons who are interested in the changing physical type and the anthropological future of our older American stocks.

COON, CARLETON STEVENS

572.94
C78n
The races of Europe. New York: The Macmillan Company, 1939. 739 p. illus. 24 cm. \$7.00. 1763an

Contents: Introduction to the historical study of the white race. Pleistocene white men. The mesolithic period. The neolithic invasions. The bronze age. The iron age. Introduction to the study of the living. The North. The British Isles. The Mediterranean world. The central zone, a study in reemergence. Conclusion. Appendixes—means of principal cranial series used in chapters II-VII. Glossary. List of serials and their abbreviations. List of books. Indexes.

Note: A text and reference book for students of physical anthropology. It traces the racial history of the white division of *Homo sapiens* from its Pleistocene beginnings to the present. Six chapters are devoted to a study of the skeletal material by consecutive cultural periods, but the main emphasis is placed upon the racial identification and classification of living white peoples. A consistent theme is that physical anthropology cannot be divorced from cultural and historical associations, and that there is no such thing as "pure" biology in reference to human beings.

CUMMINS, HAROLD, AND OTHERS

Measures of men; ten specialized studies in physical anthropology in Mexico, Central America, and the West Indies; by Harold Cummins,

Mary Steele Lane, Stella M. Leche, Ruth Millar, Inez D. Steggerda, and Morris Steggerda. New Orleans: The Tulane University of Louisiana, 1936. 327 p. illus. 26 cm. (Tulane University. Middle American research series. Publication no. 7) Paper, \$5.00. 1763ao

Contents: Map: location of peoples mentioned in this volume. Foreword. A physical and physiological description of adult Maya Indians from Yucatan, by Morris Steggerda. Methodology in palmar dermatoglyphics, by Harold Cummins. Finger lengths of the Maya Indians as compared with Negroes and Whites, by Morris Steggerda and Ruth Millar. Finger prints in Maya Indians, by Harold Cummins and Morris Steggerda. A racial study of palmar dermatoglyphics with special reference to the Maya Indians of Yucatan, by Inez D. Steggerda, Morris Steggerda, and Mary Steele Lane. A retabulation of the palmar dermatoglyphics in Wilder's collection of Mayas, with a note on the Wilder collection of dermatoglyphics, by Harold Cummins. Dermatoglyphics and functional lateral dominance in Mexican Indians: II. Aztecas, by Stella M. Leche. Dermatoglyphics and functional lateral dominance in Mexican Indians: III. Zapotecas and Mixtecas; anthropometry of the Zapotecas and Mixtecas, by Stella M. Leche. Dermatoglyphics and functional lateral dominance in Mexican Indians: IV. Chamulas; anthropometry of the Chamulas, by Stella M. Leche. The dermatoglyphics of the Tarascan Indians of Mexico, from the collection of Dr. D. F. Rubin de la Borbolla, by Stella M. Leche. Appendix: Peoples mentioned in this volume.

Note: This publication presents ten specialized studies in the physical anthropology of Middle America. Each paper has its own title-page, contents, bibliography, and index. The three numbered papers by Stella M. Leche continue a series begun in 1934 in Middle American research series, Publication no. 5, under the title *Dermatoglyphics and functional lateral dominance in Mexican Indians (Mayas and Tarahumaras)*.

FIELD, HENRY

The anthropology of Iraq. Part I, number 1: The upper Euphrates. Chicago: Chicago Museum of Natural History, 1940. 224 p. illus. 24 cm. (Chicago Museum of Natural History. Publication 469. Anthropological series. Vol. 30, part 1, no. 1) Paper, \$3.00. 1763ap

Contents: Preface. Introduction. The land and the people. The physical anthropology of the Dulaim and the Anaiza. Additional anthropometric data from Iraq. The tribes and subtribes of the upper Euphrates. Appendices. Glossary. Bibliography. Indexes. Plates.

Note: This volume presents the results of an anthropometric survey of Iraq made in 1934 by the Field Museum Anthropological Expedition to the Near East. Measurements and other data concerning the inhabitants of Iraq are presented in detail. Photographs, front and side views, of representative men of Iraq are reproduced. Sections in the appendix list mammals and plants of Iraq gathered by the expedition.

FIELD, HENRY

Arabs of central Iraq; their history, ethnology, and physical characters: with introduction by Sir Arthur Keith. Chicago: Field Museum of Natural History, 1935. 474 p. illus. 31 cm. (Field Museum of Natural History. Anthropology. Memoirs. Vol. IV) Paper, \$7.50. 1763aq

Contents: List of illustrations. Preface. Introduction by Sir Arthur Keith. Arabs of the Kish area. Anthropometric data. Statistical summaries. Appendix: Field Museum Anthropological Expedition to the Near East, 1934. Bibliography. Glossary. Index.

Note: This study of the physical constitution of Arabian people and of their relationship to races both past and present is based on data collected by an expedition to the Kish area of Iran in 1928. The greater part of the report consists of a tabulation of data relating to the stature and dimensions of head and face of 667 Arab men. The discussion and interpretation of findings is given by Sir Arthur Keith in his introduction. There is a glossary of colloquial words used by Arabs of the Kish area, and a collection of 156 plates showing photographs of 581 individuals.

FIELD, HENRY

Contributions to the anthropology of Iran. Chicago: Chicago Natural History Museum, 1939. 706 p. illus. 24 cm. (Chicago Natural History Museum. Publication 458-459. Anthropological series. Vol. 29, nos. 1-2) Paper: Part 1, \$5.50; Part 2, \$2.25. 1763ar

Contents: Preface. Introduction. The land and the people. Historical references to peoples of Iran (445 B.C.-A.D. 1938). The peoples of Iran. The physical anthropology of Iran. Appendices. Glossary. Bibliography. Indexes. Plates.

Note: This work by the Curator of Physical Anthropology at the Chicago Natural History Museum tells of the anthropological findings of the Field Museum Anthropological Expedition to the Near East in 1934. The primary concern of the report is with the physical characteristics of the modern inhabitants of Iran. Detailed measurements and front and profile portraits of Iranian males illustrate the work.

HAMBLY, WILFRID DYSON

Craniometry of New Guinea. Chicago: Field Museum of Natural History, 1940. 290 p. illus. 24 cm. (Field Museum of Natural History. Publication 465. Anthropological series. Vol. xxv, no. 3) \$2.50. 1763as

Contents: Nature and provenance of the Field Museum collection. Technique of measurement. Age and sex in the collection. Grouping of the data. Frequency distributions and sex differences. Contours of skulls from New Guinea and other regions. Comparative study of craniometry of New Guinea and adjacent regions. Tables giving coefficients of racial likeness. Bibliography. Index.

Note: A study of the craniometrical characters of the natives of the northern and southern coasts of New Guinea, based on an examination of 222 skulls collected by the Joseph N. Field Anthropological Expedition to the South Sea Islands, 1909-13. The bulk of the work consists of a compilation of statistical data relating to skull measurements, grouped according to locality, age, and sex. Photographs of natives from the districts visited, and of several of the skulls examined are included.

HARRIS, JAMES ARTHUR, AND OTHERS

The measurement of man, by J. A. Harris, C. M. Jackson, D. G. Paterson and R. E. Scammon. Minneapolis: The University of Minnesota Press, 1930. 215 p. illus. 23 cm. (Minnesota Sigma Xi lectures) \$2.50. 1763at

Contents: The measurement of man in the mass, by J. A. Harris. Normal and abnormal human types, by C. M. Jackson. Personality and physique, by D. G. Paterson. The measurement of the body in childhood, by R. E. Scammon. Bibliography.

Note: Discussions of the use of mathematics and scientific principles in man's attempt to learn more about himself as an individual and in the mass. The book is addressed primarily to scientists, but is intelligible also to laymen interested in the subject.

HERSKOVITS, MELVILLE JEAN

The anthropology of the American Negro. New York: Columbia University Press, 1930. 283 p. illus. 24 cm. (Columbia University contributions to anthropology. Vol. xi) \$4.00. 1763au

Contents: Preface. Corrections and additions. The sample and its composition. Measurements and observational errors. A description of the American Negro type. Differences within the series. Growth curves and sex differences. The validity of the genealogies. Correlation of traits. Results of this study. References.

Note: An anthropometrical study of the American Negro, based upon samples gathered mainly in northern cities between 1923 and 1927. It is the author's purpose to investigate the extent and effects of racial cross-breeding in the American Negro and to gain information concerning his genealogical background. One

hundred two tables of data are included in the text. The research was carried on with the assistance of the National Research Council and the Columbia University Council for Research in the Social Sciences.

HOWELLS, WILLIAM WHITE

Anthropometry and blood types in Fiji and the Solomon Islands, based upon data of Dr. William L. Moss. New York: American Museum of Natural History, 1933. 63 p. illus. 24 cm. (American Museum of Natural History. Anthropological papers. Vol. xxxiii, part iv) Paper, \$0.50. 1763av

Contents: Introduction. Measurements and indices: Stature. Sitting height. Relative sitting height. Head length. Head breadth. Cephalic index. Bizygomatic diameter. Cephalo-facial index. Total face height. Facial index. Nose height. Nose breadth. Nasal index. Summary of measurements and indices. Observations. Results of sorting. Blood types. Relation of blood types to anthropometric data. General conclusions. Bibliography.

Note: The material presented in this paper was collected by W. L. Moss, member of the Crane Pacific Expedition of 1929. It includes reports of the results of anthropological measurements and blood tests of 133 men of Fiji and 85 Solomon Islanders, as well as similar figures for a mixed group of 51 males from New Guinea.

HOWELLS, WILLIAM WHITE

Anthropometry of the natives of Arnhem Land and the Australian race problem. Analysis and discussion by W. W. Howells; data collected by W. L. Warner. Cambridge, Mass.: Peabody Museum of American Archaeology and Ethnology, 1937. 97 p. illus. 24 cm. (Peabody Museum of American Archaeology and Ethnology, Harvard University. Papers. Vol. xvi, no. 1) Paper, \$1.00. 1763aw

Contents: Introduction. Geographical areas of the subgroups: Northwest Arnhem Land. Victoria River. Melville and Bathurst Islands. Northeast Arnhem Land. Roper River. Observations. Pigmentation. Hair. Nasal region. Cheek region. Chin. Ear. Teeth. Comparison of geographical subgroups: Statistical validity of differences. Mean differences of subgroups. Comparison of measurements and indices in the subgroups. Physical types of subgroups. Summary. Comparison with other Australian groups: Mean differences. Statistical variability. Variation in hair form. Cranial material. Metrical characters of the cranium. Head height in South Australia. Blond hair in Australians. Summary of findings. Discussion. Comparisons with other racial groups: Melanesia. Indonesia. Asia. Discussion of the Australian race: Theories. The Australians an early form of *Homo sapiens*. The Tasmanians. The migrations of the Australians. Summary. Appendix. Bibliography.

Note: The material upon which this anthropometric study is based was collected by William Lloyd Warner in the course of an investigation of the social organization of the native inhabitants of Arnhem Land in northern Australia. The series of natives examined included 239 adult males and is divided geographically into five subgroups. There were measurements taken also of a smaller group of females.

HRDLÍČKA, ALEŠ

The anthropology of Kodiak Island. Philadelphia: Published by the Wistar Institute of Anatomy and Biology, 1944. 486 p. illus. 26 cm. \$5.00. 1763ax

Contents (abridged): Kodiak Island. Part I, Historical data: Earliest authorities on the Koniags. Racial affinities. Dwellings and other structures. Household utensils. Mentality. Customs. Part II, Surveys of Kodiak Island and the neighboring mainland. Part III, Excavations: Résumé of general and archeological observations. Part IV, Physical anthropology of Kodiak: The Koniags. Skull. Long bones. The pre-Koniags. Skull. Long bones. Cranial comparisons. Appendixes: Stone and bone artifacts from Uyak. Animal and plant life. Bibliography. Index.

Note: The author undertook a systematic anthropological

survey of Alaska in 1926, under the auspices of the Smithsonian Institution, in order to learn whatever might still be possible about the living remnants of the native populations, and to gather skeletal remains that would supplement the study on the living and might give valuable information on the human past of this region. The work took ten seasons, ending in 1938. The gists of the results of the expeditions appeared annually in the Smithsonian Explorations volume, while some special studies were also published. The object of this volume is to give whatever of note has been preserved on the Kodiak natives by the Russians and others; to detail the results of the author's surveys and excavations, and to show the essentials relating to the physical characteristics of both the Koniag and the pre-Koniag populations of the region.

HRDLIČKA, ALEŠ

306
NAM
V-23
Observations and measurements on the members of the National Academy of Sciences. Presented to the Academy at the annual meeting, 1937. Washington, D. C.: Government Printing Office, 1940. 108 p. illus. 31 cm. (National Academy of Sciences. Memoirs. Vol. xxiii, third memoir) \$2.50. 1763ay

Contents (abridged): Introductory remarks. Age. Descriptive features. Visual observations. Observational data. Measurements. Physiological tests. Concluding discussion. General comparison (tables). Final remarks.

Note: The results of a study of anthropological observations and measurements made by the author on a group of 150 members of the National Academy of Sciences, 100 of whom were men of old American derivation and 50 of European or of recent American parentage. There are a large number of charts and tables relative to height and weight of body, weight versus stature, measurements of head, face, nose, mouth, ear, chest, hand, and foot. The writer concludes that the academicians of both old American and more recent European derivation are closely alike, and in important characters both surpass the populations they come from, representing not only mentally but also physically what can be termed an aristogenic selection. If the important factors of age and stature are discounted, the brains and hence the heads of lifelong workers of superior mentality are age for age of a larger size than the average of the population from which such workers have emerged.

HRDLICKA, ALEŠ

573.6
H8592
Practical anthropometry. Second edition. Philadelphia: The Wistar Institute of Anatomy and Biology, 1939. 231 p. illus. 26 cm. \$3.50. 1763az

Contents (abridged): Principles of anthropometry. Anthropometry and organic laws. Diversity of anthropometric procedures. Serviceability of anthropometry to anthropology. Anthropology and dentistry, medicine, life insurance, biology, physiological chemistry, the state. Preparation, instruction. Instruments. Color standards. Additional apparatus. Principles of recording. Estimation of age. Laboratory. Conventions. Landmarks. Routine measurements and observations on the living and on bodies. Blanks for measuring. Strength. Craniometry. Sex identification in skeletal material. Racial types. Landmarks on the skull. The vault. Face. Base. Orbit. Nose. Lower jaw. Teeth. Osteometry. Measurements of bones. Anthropometric indices. Anthropometric identifications. Blood test. Fingerprinting. Further regulations in anthropological anthropometry. Index.

Note: A comprehensive treatise for students and anthropometrists, presenting detailed information on the methods, techniques, divisions, and scope of the systematic art of measuring and taking observations on man, his skeleton, brain, or other organs, by the most reliable means, for scientific purposes. The aim of the work is to achieve a standardization of techniques throughout the scientific world by outlining the basic and valid agreements and such further matters as experience has shown to be useful. Statistical methods of evaluating group measurements are omitted. The second edition contains minor corrections and additions together with new references in footnotes. There is no bibliography.

KROGMAN, WILTON MARION

572
A-7948
A bibliography of human morphology, 1914-1939. Chicago, Ill.: The University of Chicago Press, 1941. 385 p. 28 cm. (The University of

Chicago publications in anthropology, Physical anthropology series) \$3.00. 1763ba

Contents (abridged): Method in physical anthropology. Osteology. The races of man. The prehistory of man. Craniology. Teeth. Human heredity. The nervous system. Myology. Blood. Hair. Dermatoglyphics. Studies in phylogeny. Soft parts. Body type. Growth.

Note: This bibliography covers some 970 journals and lists over 25,000 references by subject matter. There is an author index of some 6,000 names. In addition to the exact original source, the review or abstract is given wherever possible. There is some overlapping with volume III of Martin's *Lehrbuch der Anthropologie*, Jena, 1928, but the non-German literature is more extensively covered and literature published during the years 1928-39 has been added.

MCCLOY, CHARLES HAROLD

Appraising physical status. Iowa City, Ia.: The University of Iowa, 1936-38. 2 v. illus. 22 cm. (University of Iowa studies. Studies in child welfare. Vol. xii, no. 2; Vol. xv, no. 2) Paper, \$1.50 each volume. 1763bb 362.7
1089a

Contents: The selection of measurements: The selection of anthropometric measurements for the purpose of evaluating physical status. Individual differences in physical constitution. Criteria for the selection of measurements. Measurements used in the prediction of normal weight. Measurements of fat and subcutaneous tissue. Measurements of limb girth. Relative contribution of measurements of over- and underweight, of fat, and of limb girth to the estimation of nutritional status. Relationship of limb girth as distinct from fat to over- and underweight. Variables from which to predict normal limb girth. Breathing capacity. Measurements selected for evaluating physical status. Landmarks and techniques of measurement used in these studies. References. Methods and norms: General considerations. Standards of body type. The anthropometric measurement of nutritional status. The prediction of normal weight. The measurement of skin and subcutaneous fat. The measurement of limb girths. Tests of strength as measurements of physical status. Physiological variants of type. Breathing capacity. The problem of age. Anthropometry in the service of the individual. A school program of anthropometry. References. Appendix.

Note: The second of these two volumes appeared as a sequel to the first. Together they offer a complete guide for programs of measurement of boys and girls over wide age ranges. The original volume analyzes and evaluates measurements appropriate for the physical appraisal of the child. The sequel presents the standards and norms in detail. Included also are brief accounts of related phenomena in sex differences, internal secretions, and physiological growth, and suggestions for the use of anthropometric measurements by schools and individuals. The appendix contains more than 100 anthropometric tables.

PRYOR, HELEN (BRENTON)

Width-weight tables for boys and girls from 1 to 17 years—for men and women from 18 to 41 years. Second revised edition. Stanford University, Calif.: Stanford University Press, 1940. 15 p. illus. 28 cm. \$0.75. 1763bc

Contents: List of tables: Conversion table—inches to centimeters. For boys 1 to 5 years of age. For girls 1 to 5 years of age. For boys 6 to 17 years of age. For men 18 to 41 years of age. For girls 18 to 17 years of age. For women 18 to 41 years of age.

Note: Tables for determining proper body weight based, not on the old height-age-sex basis only, but also on body build as represented by the bi-iliac and the lateral chest measurement.

SELTZER, CARL CANNON

572.062
H264
V-16
Contributions to the racial anthropology of the Near East. Based on data collected by Henry M. Huxley. Cambridge, Mass.: Peabody Museum of American Archaeology and Ethnology, 1940. 61 p. illus. 23 cm. (Peabody Museum of American Archaeology and Ethnology, Harvard University. Papers. Vol. xvi, no. 2) Paper, \$1.00. 1763bd

Anthropology

Contents: Foreword, by Henry M. Huxley. Introduction. Bedawins. Moslems. Samaritans. Turkomans. Maronites. Druse. Nusairiyeh. Greek Orthodox. Gypsies. Conclusion. Bibliography.

Note: The material which forms the basis of this anthropometric report was collected during a residence of a year and a half in Syria and Palestine (1900-1901). The number of individuals of each group measured ranges from 11 in the case of the Gypsies to 258 in the case of the Moslems. Most of the subjects were of the male sex. Twenty-five different measurements and indices are computed and classified. Detailed analysis of the anthropometric data accompanies the tables. The photographic illustrations show typical head forms of the different groups.

SELTZER, CARL CANNON

The racial characteristics of Syrians and Armenians. Based upon data collected by W. B. Cline, C. S. Coon, J. M. Andrews, and W. C. Dupertuis. Cambridge, Mass.: Peabody Museum of American Archaeology and Ethnology, 1936. 77 p. illus. 24 cm. (Peabody Museum of American Archaeology and Ethnology, Harvard University. Papers. Vol. XIII, no. 3) Paper, \$1.00. 1763be

Contents: Introduction. Age. Metrical analysis of the material. Morphological observations. Conclusions of the morphological analysis. General analysis of the Armenian material. General analysis of the Syrian material. Bibliography.

Note: The material forming the basis of this monograph was collected on two separate occasions: Walter B. Cline collected data in 1928 on the physical anthropology of 263 adult members of the male population of Syria; the data on the Armenians was gathered in 1931 in Boston, Massachusetts, from 101 adult male Armenians, all alleged to have been adults on their arrival in the United States. The illustrative material of the publication consists of 61 tables.

SHAPIRO, HARRY LIONEL

The physical characteristics of the Ontong Javanese: a contribution to the study of the non-Melanesian elements in Melanesia. New York: American Museum of Natural History, 1933. 54 p. illus. 23 cm. (American Museum of Natural History. Anthropological papers. Vol. XXXIII, part III) Paper, \$0.50. 1763bf

Contents: Introduction: Brief description of Ontong Java. Population of Ontong Java. Sample and technique. Description of the Ontong Javanese. Comparison with diverse groups from Polynesia, Melanesia, and Micronesia: Polynesians. Fijians. New Hebrideans. New Caledonians. Loyalty, and Santa Cruz islanders. Solomon islanders. Natives of Bismarck Archipelago. Natives of Dampier Straits. Natives of the north coast of New Guinea. Micronesians. Natives of Nukumanu, Mortlocks, and Kapingamarangi. Discussion and summary. Literature cited.

Note: This publication presents measurements of inhabitants of Ontong Java (Liuenuia), an island of eastern Melanesia, and compares them with measurements of inhabitants of other Pacific islands. The primary concern in the analysis is to test the validity of the supposed racial affinity of the inhabitants of Ontong Java and those of Polynesia. The work is illustrated with photographs of male and female native types.

SHAPIRO, HARRY LIONEL, AND P. H. BUCK (TE RANGI HIROA)

The physical characters of the Cook Islanders. Honolulu, Hawaii: Bernice P. Bishop Museum, 1936. 35 p. illus. 32 cm. (Bernice P. Bishop Museum. Memoirs. Vol. 12, no. 1) \$1.00. 1763bg

Contents: Introduction: Scope. Geography. Population. Material and technique: Numbers of islands. Age distribution. Summary description. Interisland differences and patterns. Relations to Polynesia in general. Discussion and summary.

Note: This paper is one in a series of monographs devoted to a survey of the physical characteristics of the native population of Polynesia. The following papers dealing with somatology had been published previously: Bishop Museum, *Memoirs*, Vol. 8,

no. 2, Samoa; no. 4, Tonga; no. 5, Marquesas Islands; Vol. 9, no. 2, Marquesas Islands; no. 4, Hawaii. Also, Vol. 11, no. 1, Descendants of the mutineers of the Bounty; no. 2, Growth of children in Hawaii; no. 4, Physical characters of the Society Islanders. Articles planned for future publication were to deal with the Tuamotuans, Austral, Niue, and Rapa islanders, together with supplementary studies in the Samoan, Tongan, Marquesan, and Society Islands physical types. It is hoped that these publications will serve as a contemporary record of the Polynesians, who are at present in a state of transition if not in actual decay. In many islands it is already extremely difficult to find pure-blooded natives.

STEGGERDA, MORRIS

Anthropometry of adult Maya Indians; a study of their physical and physiological characteristics. Washington, D. C.: Carnegie Institution of Washington, 1932. 113 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 434) Paper, \$1.25. 1763bh

Contents: History of the investigation. Material and methods. Results: Measurement of stature and trunk. Measurement of appendages. Measurement of head. Physiological observations. General discussion. Summary. Bibliography. Index.

Note: The physical measurements of 77 males and 56 females from towns in the vicinity of Chichen Itza in the state of Yucatan. The present report presents additional data on adult Maya with a comparison of the previous work showing variations in technique used. Measurements of other tribes of North American Indians are given for comparison.

WILLIAMS, GEORGE DEE

Maya-Spanish crosses in Yucatan. Cambridge, Mass.: Published by the Bureau of International Research of Harvard University and Radcliffe College for the Peabody Museum of American Archaeology and Ethnology, 1931. 256 p. illus. 24 cm. (Peabody Museum of American Archaeology and Ethnology, Harvard University. Papers. Vol. XIII, no. 1) Paper, \$3.00. 1763bi

Contents: Introduction. Habitat. History. The problem. Sorting: its technique and the theory of its application to the study of race mixture. Theory of sorting in race mixture: general. Theory and practice of sorting in Yucatecan race mixture. Length dimensions of body. Shoulders and hips. The thorax. Body build. Physiological observations. The head. The face. The nose. The ear. Certain subjectively observed traits. Blood grouping. Social phenomena. Variability. Conclusion. Appendix. Bibliography.

Note: This extensive report is based upon field work in physical anthropology carried on by the author and his wife in the state of Yucatan, Mexico, from February to October, 1927. The purpose of the expedition was to collect data relating to the physical anthropology of the Maya Indians of that region and to study the physical effects of race mixture between the Maya Indians and their conquerors. Of the 2,500 men, women, and children examined, 880 male and 694 female adults, born in Yucatan of racially mixed Indian-White parents, are considered in this study, which presents figures in tabular form for various measurements and indices, and discusses them. Facial types are illustrated in photographs.

WISSLER, CLARK

Observations on the face and teeth of the North American Indians. New York: American Museum of Natural History, 1931. 32 p. illus. 24 cm. (American Museum of Natural History. Anthropological papers. Vol. XXXIII, part 1) Paper, \$0.40. 1763bj

Contents: Introduction. Intercanthus distance. Nasal bridge. The epicanthic eyefold. The palpebral fissure. The enamel rim. Carabelli's cusps. The number of molar cusps. Skin color. Tribal similarities.

Note: This paper records measurements of various physical characteristics among Indians of North America. There are included some comparative figures for Hawaiian and other groups. The data used were collected by Louis R. Sullivan among Indian school populations. Separate figures are given for a dozen tribes.

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HUMAN ANATOMY

General

DEGARIS, CHARLES FRANCIS, AND OTHERS

Principles of human anatomy, with synopses and bibliography, by Charles F. DeGaris, Ernst Lachmann and Ralph E. Chase. Philadelphia: Lea & Febiger, 1939. 239 p. 20 cm. \$2.50. 1764

Contents: Introduction. Part I, Plan of work. Part II, Direction for dissection: Dissection of trunk. Dissection of the back. Dissections of the head. Dissections of the upper extremities. Dissections of the lower extremities. Dissection of the joints. Part III, Synopses. Bibliography and index.

Note: In broad outline, this laboratory guide follows the course instituted by Dr. F. P. Mall and developed by Dr. L. H. Weed at Johns Hopkins Medical School. It is the first detailed presentation of their methods in book form.

FRANCIS, CARL C.

Fundamentals of anatomy. With 176 illustrations including 26 color plates. St. Louis: The C. V. Mosby Company, 1937. 320 p. illus. (part col.) 23 cm. \$2.75. 1765

Contents: The purpose of anatomy, by T. Wingate Todd. Cells and tissues. The skeleton. Joints. The muscular system. The nervous system. The eye. The ear. The skin and subcutaneous tissue. The respiratory system. The digestive system. The urinary system. The female reproductive system. The male reproductive system. Ductless glands. Surface glands. Glossary. Index.

Note: A simplified and condensed presentation of the fundamentals of anatomy for the general college student not interested in a medical career, and for dental students and lawyers specializing in medical law. The practical significance of a knowledge of anatomy in both its professional and lay aspects is outlined. The glossary makes the text useful to the interested lay reader as well.

GRANT, JOHN CHARLES BOILEAU

An atlas of anatomy. Baltimore: The Williams and Wilkins Company, 1944. 398 p. illus. (part col.) 28 cm. \$10.00. 1766

Contents: The upper limb. Abdomen. Perineum and pelvis. Lower limb. Vertebrae and the vertebral column. Thorax. Head and neck.

Note: A new work presenting the structure of the human body by region in much the same order as the student proceeds in dissection. All illustrations, many of which are in color, were made from dissections and done especially for this book. Adequate descriptions are found in the legends for the illustrations. The book constitutes a text and reference for medical students, physicians, surgeons, and specialists in every field of medicine. The original publication, appearing in 1943, was in two volumes. This 1944 edition contains all of the subject matter but is in one volume.

GRAY, HENRY

Anatomy of the human body, edited by Warren H. Lewis and associate editors. Twenty-fourth edition, thoroughly revised. Illustrated with 1256 engravings. Philadelphia: Lea & Febiger, 1942. 1428 p. illus. (part col.) 26 cm. \$12.00. 1767

Contents: Embryology. Osteology. Joints and ligaments. Connective tissues. Myology. The blood-vascular system. The arteries. The veins. The lymphatic system. Neurology. The organs of the

senses. The common integument. The respiratory apparatus. The digestive apparatus. The urogenital system. The ductless glands. Surface and topographical anatomy. Index.

Note: Six associate editors aided in the preparation of this revision of an established work: Earl T. Engle on ductless glands; Joseph C. Hinsey on the peripheral and autonomic nervous system; Norman L. Hoerr on the blood vascular system; Karl E. Mason on the respiratory and digestive systems; David McK. Rioch on the central nervous system; Roy G. Williams on the urogenital system. Many new illustrations have been added and 30 roentgenograms were added to the chapter on surface and topographical anatomy. The book is 47 pages longer than previous editions.

HOWELL, ALFRED BRAZIER

Gross anatomy, a brief systematic presentation of the macroscopic structure of the human body. New York: D. Appleton-Century Company, Incorporated, 1939. 403 p. illus. 25 cm. \$6.00. 1768

Contents (abridged): Introduction. Directions and topography. General development. The integument and its structures. The skeletal system. Articulations and ligaments. The nervous system and its meninges. The special senses. The muscular system. The vascular system. The respiratory system. The digestive system. The urogenital system. The endocrine glands. Index.

Note: A concise work designed primarily for use in shortened courses in medical schools, but suitable also as a reference book for general practitioners. It is intended to be used in conjunction with an anatomical atlas. Both the Basle Anatomical Nomenclature (B. N. A.) and the English equivalents are used.

MARSHALL, CLYDE

An introduction to human anatomy. Second edition, revised. Philadelphia: W. B. Saunders Company, 1939. 388 p. illus. (part col.) 20 cm. \$2.50. 1769

Contents: Introduction. Definitions, method, some spatial relations, planes of reference. The bones of the vertebral column. The bones of the thorax. The bones of the cranium. The bones of the face. The bones of the nasal cavity. The hyoid bone. The joints of the skull. The bones of the upper extremity. The bones of the lower extremity. The muscles of the upper extremity. The muscles of the lower extremity. The muscles of the axial skeleton. The cervical fascia. The bursae. The skin. The cell, protoplasm, cell reproduction. The tissues. The digestive system. The respiratory system. The urinary system. The reproductive system of the male. The reproductive system of the female. The heart. The blood vessels. The systemic veins. The blood. The lymphatic system. The blood-forming and blood-destroying organs. The reticulo-endothelial system. The nervous system. The eye. The ear. The olfactory organ. The gustatory organ. Endings of nerves of common or general sensation. The ductless glands. Developmental anatomy. Appendix. Index.

Note: Designed for use of students of elementary anatomy and for the layman who may be interested in developing a knowledge of the structure of the human body. It was written from the standpoint of an anatomist, and contains, in addition to the facts of anatomy in the narrow sense, brief accounts of the functional activities of the different organs, and of related problems of practical interest. The student is introduced immediately to gross anatomy and only later comes to the finer structures. A chapter on developmental anatomy has been included, but is placed at the end of the book in the event that certain teachers of the subject may wish to omit its study. The author's aim has not been to teach anatomy solely for its own sake, but also to show its relation to the other sciences, and to point out some of its everyday applications. The terminology is B. N. A., although the old terminology is also given in parentheses. Footnotes give derivations and meanings of the more difficult terms. Paragraphs labeled "practical considerations" are given throughout the book. Of the 257 illustrations, 14 are in colors.

MILLARD, NELLIE D., AND BARRY G. KING

Human anatomy and physiology. With 285 illustrations (28 in color), 145 by Lucille Cassell. Philadelphia: W. B. Saunders Company, 1941. 525 p. illus. (part col.) 20 cm. \$3.00. 1770

Contents: Unit i, The body as an integrated whole: The body considered as a whole. The whole body and its component parts. Epithelial and connective tissues. Unit ii, The erect and moving body: Skeletal and articulatory systems. Muscular tissue. Physiology of muscle. Skeletal muscles. Unit iii, Maintaining the metabolism of the body: Blood, lymph, and tissue fluids. Circulatory system: heart. Systemic circulation. Some physical aspects of the circulation: measurement of blood pressure. Maintenance and regulation of blood pressure. Sympathetic system. Respiratory system. Physiology of respiration and digestive systems. Physiology of digestion. Absorption and metabolism. Structure and function of the urinary system. Regulation of body temperature. Endocrine glands. Unit iv, Reproduction of the human body: Prenatal development. Male and female reproductive systems. Unit v, Integration and control of the body by the nervous system: Nervous tissue. Nerve impulse. Spinal cord. Brain. Autonomic nervous system. Sensory end organs and sensation. Index.

Note: This is an elementary text in which anatomy and physiology are integrated. It is used in schools of nursing and in college courses in the United States. It is concisely written and supplemented with 285 specially developed illustrations which serve to amplify the text matter. Of these 28 are in color. Other teaching aids are included in the form of summaries and questions at the ends of chapters and a bibliography at the end of the book. The content is developed on the plan of large major units, the interrelation of which is emphasized. Physiological principles are developed which find wide application in explaining the mechanisms by which the various parts of the human body function. For each unit a general introduction is given in which the scope of the functional area is explained. The functional approach is used also in the discussion of skeletal muscles. These are presented as muscles which move apart, and are arranged in opposing groups: flexors and extensors, adductors and abductors. The sequence of the presentation is interchangeable to meet the needs of the instructor.

MILLER, ROBERT HORACE

Applied anatomy, functional and topographical. Illustrated with 55 engravings and 16 colored plates. Philadelphia: Lea & Febiger, 1938. 484 p. illus. (part col.) 24 cm. \$6.50. 1771

Contents: The skin. The muscles. The upper extremity. The head and neck. The vertebral column, spinal cord, autonomic nervous system. The thorax. The abdomen and pelvis. The lower extremity. Index.

Note: The author endeavors to correlate the facts gained by observation in the laboratory and apply them to the dynamics and function of the living body. Comparative anatomy, phylogeny, and morphology have been enlisted to aid in the comprehension of coordinated function and activity of the structures. References follow each chapter.

MORRIS, HENRY

Morris' Human anatomy; a complete systematic treatise, edited by J. Parsons Schaeffer. The contributors: Leslie B. Arey, Raymond F. Blount, Eliot R. Clark [and others]. Tenth edition. Philadelphia: The Blakiston Company, 1942. 1635 p. illus. (part col.) 28 cm. \$12.00. 1772

Contents: Developmental anatomy, by R. E. Scammon. The skin and mammary glands, by Harold Cummins. Osteology, by Robert J. Terry. The articulations, by Robert J. Terry. The musculature, by J. C. B. Grant. The cardiovascular system, by Bradley M. Patten. The lymphatic system, by Eliot R. Clark. The nervous system, by Olof Marsell. The special sense organs, by Leslie B. Arey. The digestive system, by Raymond F. Blount in collaboration with C. M. Jackson. The respiratory system, by J. Parsons Schaeffer. The urogenital system, by Franklin P. Johnson. The glands of internal secretion, by J. F. Gudernatsch.

Note: The present edition of this standard textbook has been extensively revised. There are about 300 new illustrations. The BNA terminology in Anglicized form is used, and the BNA

Latin forms are given in brackets. The latest revised BNA (known as JNA or INA) is also given. Bibliographies are appended to each section.

MORTON, DUDLEY JOY

Human anatomy; double dissection method. New York: Columbia University Press, 1934. 2 v. illus. 27 cm. \$3.00 per volume. 1772a

Note: Designed for use in a one-year course in anatomy. It is based on the double dissection method as developed in the College of Physicians and Surgeons, New York. The course covers about 360 hours and carries the students through two dissections of the entire body with no greater expenditure of anatomical material than is ordinarily used. The first dissection applies only to the larger structures, and gives students a preliminary understanding of those structures as a basis for the subsequent detailed dissection.

MORTON, DUDLEY JOY

Manual of human cross section anatomy. Second edition. Baltimore: The Williams and Wilkins Company, 1944. 211 p. illus. 27 cm. \$6.00. 1773

Contents: Vertebral levels with anatomical structures. Head and neck. Thorax and abdomen. Female abdomen and pelvis. Upper extremity. Thigh and leg. Ankle and foot.

Note: The main purpose of this book for graduate and undergraduate medical students is to eliminate the need for making time-consuming tracings from wet specimens. It is adapted for use with regular laboratory dissections, or with lantern slides. In this edition blood vessels and nerves have been added to the drawings, and there are other changes. The first edition, Baltimore, 1941, was by the present author and R. C. Truex and C. E. Kellner.

PIERSON, GEORGE ARTHUR

Piersol's Human anatomy, including structure and development and practical considerations. Ninth edition, revised under the supervision of G. Carl Huber. With seventeen hundred and thirty-four illustrations of which fifteen hundred and twenty-two are original and four hundred and sixty are in color. Philadelphia: J. B. Lippincott Company, 1930. 2104 p. illus. (part col.) 27 cm. \$10.00. 1774

Contents (abridged): The elements of structure. Early development. The elementary tissues. The skeleton, including the joints. The muscular system. The vascular system. The nervous system. The organs of sense. The gastro-pulmonary system. The urogenital system. Index.

Note: This comprehensive work for medical students, general practitioners, and surgeons follows the lines of teaching used by prominent anatomists in presenting the essential facts on the gross appearances and relations of the various parts of the human body. It also gives their structure and development, with emphasis and explanation of the varied relations of anatomic details to the conditions claiming the attention of the physician and surgeon. The revision of subject matter in the ninth edition, beyond the incidental changes, is confined largely to sections dealing with the histogenesis of the blood elements, the development of the lymphatics and the primary veins, the peripheral nervous system, and the fiber-paths of the central nervous system. A limited number of new illustrations have been added.

WARREN, JOHN, AND OTHERS

Warren's handbook of anatomy, from original dissections by John Warren; text by Robert M. Green; drawings by H. F. Aitken. Revised edition. Cambridge, Mass.: Harvard University Press, 1937. 384 p. illus. 29 cm. \$7.50. 1774a

Contents (abridged): Head and neck. Trunk. Upper extremity. Lower extremity. Thoracic cavity. Abdominal cavity. Pelvic cavity. Perineal region. Indices, English and Latin.

Note: Dr. John Warren had carefully prepared, in the last years of his work, over 400 special regional dissections for use

in his teaching. Three hundred and twenty-four selected drawings of these, made under his personal supervision, are reproduced in this atlas. A descriptive text for the illustrations was completed by Dr. Robert M. Green after Dr. Warren's death.

WILLIAMS, JESSE FEIRING

A textbook of anatomy and physiology. Seventh edition, revised, with 344 illustrations, 31 of them in colors. Philadelphia: W. B. Saunders Company, 1943. 573 p. illus. (part col.) 20 cm. \$2.75. *611 26745 1937 1775*

Contents: The cell and the new individual. The individual as a whole. Skeleton. Muscles and their action. Nervous system; brain; autonomic. Organs of general and special sense. Circulatory system; the blood; the heart. The vessels and their functions. The respiratory system. Structure of digestive system. Digestion, metabolism and nutrition. Endocrine system. Excretory system. Reproductive system. References. Glossary. Index.

Note: This text deals with the essential knowledge of structure and function of the human body and is intended for college students and students of nursing. The approach is biological and with the belief that bones, muscles, nervous system, and viscera have more meaning when presented in the light of their usefulness in the life of man. Three hundred forty-four illustrations, including color plates, are placed throughout the text and each chapter ends with a set of review questions and a series of exercises. In the seventh edition many changes have been made. More interweaving has been done of anatomy and physiology, thus tending to greater unification. The older procedure of presenting cells and their tissues has been abandoned and tissues are now taken up with the organs to which they belong. Some new illustrations have been added, including several on the muscle groups which appear in conjunction with a "table of muscles."

Special Regions and Organs

CUMMINS, HAROLD, AND CHARLES MIDLO

Finger prints, palms and soles, an introduction to dermatoglyphics. Philadelphia: The Blakiston Company, 1943. 309 p. illus. 23 cm. \$4.00. *573.6 09124 1776*

Contents: History. General considerations. Methods of printing, fingers, palms, soles, toes. Elements of finger-print identification. Comparative dermatoglyphics. Embryology. Symmetry and other aspects of special morphology. Inheritance. Twin diagnosis. Questioned paternity. Racial variation. Constitution. Bibliography.

Note: In addition to its interest in connection with identification of persons, this book is important in the study of differential trends among races, between the sexes, and among constitutional types. These phases of the subject are of interest to anatomists, anthropologists, geneticists, and zoologists.

KRAUSE, ARLINGTON COLTON

The biochemistry of the eye. Baltimore: The Johns Hopkins Press, 1934. 264 p. illus. 23 cm. (The Wilmer Ophthalmological Institute, The Johns Hopkins Hospital and University. Monograph no. 2) \$3.25. *573.6 09124 1777*

Contents: Introduction. The chemistry of the external secretions and conjunctiva. The chemistry of the sclera. The chemistry of the cornea. The chemistry of the uveal tract. The chemistry of the retina. The chemistry of the aqueous humor. Chemistry of the vitreous humor. The chemistry of the lens. Author index. Subject index.

Note: This book is primarily a reference work for the use of ophthalmologists, biochemists, and other research workers in biological sciences. Among the subjects discussed are: the permeability of the ocular tissues, the metabolism of the retina, the growth of the eye, the senescence of the lens, the pathology of the vitreous humor, and the etiology of cataract. The bibliography lists approximately 1000 titles.

KRONFELD, PETER CLEMENS, AND OTHERS

The human eye in anatomical transparencies; explanatory text by Peter C. Kronfeld, anatomical transparencies by Gladys McHugh, historical appendix by Stephen L. Polyak. Rochester, N.Y.: Bausch & Lomb Press, 1943. 99 p. illus. (part col.) 29 cm. \$6.50. *611.84 K9246 MD 1778*

Contents (abridged): Part I, Anatomical transparencies: Stereographic paintings of the human eye. II, Explanatory text: Anatomy of the human eye and its adnexa. Systematic anatomy: the eyeball and its blood vessels, nerves, protective apparatus, motor and supporting apparatus; the blood vessels and nerves of the orbit and lids. Topographic anatomy: the eyeball. III, Historical appendix: History of our knowledge of the structure and functioning of the eye. Bibliography. Index.

Note: The first part of this book consists of a topographic atlas of the eye and orbit, a three-dimensional presentation of the gross anatomy of this region. The anatomic relations, presented in a sequence of colored drawings printed on transparent acetate, are taken partly from preparations of anatomic layers and partly from arbitrary dissections of slices of varying thickness. The transparencies are twice the size of the adult eye and represent surface and posterior views of sections on a frontal and on a temporal plane, the sheets fitting over each other in such a way as to present all serial layers in proper sequence. The second portion of the book is a descriptive text consisting of a systematic account of ocular anatomy which takes up the various structures in a functionally logical order, and a topographic treatment of the anatomy as it is shown in the paintings in the atlas. In the third portion of the book the roots of ophthalmology are traced through Greek, Greco-Roman, Arabian, early European medicine, up to and including modern discoveries in this field. The book is intended for teachers and students of ophthalmology as well as for practitioners.

MILLER, WILLIAM SNOW

The lung. Springfield, Ill.: Charles C. Thomas, 1937. 209 p. illus. (part col.) 25 cm. \$7.50. *2nd 1947 611.24 1779*

Contents: Lungs. Trachea and bronchi. Intrapulmonary bronchi and bronchioli. Air spaces. Blood vessels. Lymphatics. Pulmonary lymphoid tissue. Nerves. Pleura. Key points. Historical sketch. The acinus. Bibliography. Index.

Note: This book represents the results of an interest in and study of a subject continuing over a lifetime. It presents the author's own valuable contributions to the study of the lungs together with a discussion of the work of other eminent investigators. The chapter entitled "Historical sketch" tells of the men who have studied the anatomy of the lung during the centuries, of the development of concepts regarding its structure, and of the various controversies to which these concepts have given rise. The numerous illustrations, some of them in color, form a very interesting feature of the book. This volume is intended for use as a textbook and also as a reference book.

MORTON, DUDLEY JOY

The human foot; its evolution, physiology and functional disorders. New York: Columbia University Press, 1935. 244 p. illus. 23 cm. \$3.00. *611.956 MD 1779a*

Contents: Preface. Part one, The evolutionary development of the human foot: The origin of vertebrate limbs. Amphibian and reptilian feet. Mammalian and early primate feet. Proanthropoid and anthropoid changes. Terrestrial modifications of gorilla and early prehuman feet. The course of human evolution. The development of the human foot. The evolution of foot musculature. The muscles of the leg. The intrinsic muscles of the foot. Gravity and muscle action as designing factors in evolutionary development. Part two, The physiology of the human foot: The center of body weight: its relation to foot function. The foot in stance. Foot balance. Locomotion: gravity and propulsion; angle of gait. The mechanics of the foot in walking. The mechanics of the foot in running. Summary and comments. Part three, The functional disorders of the human foot: Primary cause of disorder. Analysis of cases. General etiology. Shortness of the first metatarsal bone. Dorsal hypermobility of the first metatarsal segment. Discussion of muscular factors. Examination and diagnosis. The treatment of clinical features. The treatment of disordered function. The general problem of foot welfare. Reference books. Index.

Note: This treatise is intended for both professional and non-professional reading and reference. Emphasis has been placed on

the evolutionary background of the human foot and on its physiology in order to provide a basis for evaluating normal structure and function, and for analysis of functional disorders.

REYNOLDS, EDWARD

The evolution of the human pelvis in relation to the mechanics of the erect posture. Cambridge: Published by the Museum, 1931. 78 p. illus. 24 cm. (Peabody Museum of American Archaeology and Ethnology, Harvard University. Papers. Vol. xi, no. 5) Paper, \$1.00. 1779b

Contents (abridged): Introduction. The primitive pelvis. Development of specializations. Specializations of ischia and pubes. Stages of development of erect posture. Conclusions. Appendix. Bibliography.

Note: A specialized treatise illustrated with motion picture stills of primates and diagrams of humans and other primates.

SHAPIRO, HARRY H.

Applied anatomy of the head and neck, for students and practitioners of dentistry. With one hundred and seventy-three illustrations. Philadelphia: J. B. Lippincott Company, 1943. 189 p. illus. (part col.) 26 cm. \$5.50. 1780

Contents: Examination of the patient. Development and growth of oral and associated structures. The skull: anthropometric and roentgenographic considerations. Musculature of the face and jaws. The temporomandibular articulation. Structural changes due to loss of teeth. Neuroanatomic considerations. Blood vessels, lymphatics and salivary glands. Anatomic considerations in war surgery of importance to the dentist.

Note: This book is specifically designed to relate the anatomy of the head and neck to the various fields of dentistry. The anatomic detail selected for description has been confined to those features which are of the most practical significance in diagnosis and treatment. In this description reference is made to actual case studies. A discussion of the structures affected in maxillo-facial war injuries is included, and attention is called to the role of the dentist in the care of these injuries in cooperation with the plastic surgeon and the general surgeon.

WOLFF, EUGENE

The anatomy of the eye and orbit, including the central connections, development, and comparative anatomy of the visual apparatus. Second edition, with 242 illustrations. Philadelphia: The Blakiston Company, 1940. 374 p. illus. (part col.) 25 cm. \$7.50. 1781

Contents: The bony orbit and accessory sinuses of the nose. The eyeball. The appendages of the eye. Normal appearances as seen with the slit-lamp and corneal microscope. The extrinsic muscles of the eye. The nerves. The visual pathway. The involuntary nervous system. The path of the light reflex. The vessels. The development of the eye. Comparative anatomy. Index.

Note: Essentials of the structure, development, and comparative anatomy of the visual apparatus are presented in this text and reference for the student and ophthalmic surgeon, in conjunction with some of the clinical applications based on the literature of the field and on the author's experience. The motor nerves to the eye muscles receive special attention and there are detailed drawings of the dissection of the orbit and related structures to show position and relation of the various anatomical features. The section on blood supply of the visual pathway has been rewritten in the second edition and there is new material on the differential staining of rods and cones and the structure of the vessels of the iris, together with about 60 new illustrations.

Nervous System

BUCY, PAUL C., EDITOR

The precentral motor cortex. Urbana, Ill.: The University of Illinois Press, 1944. 605 p. illus. 27 cm. (Illinois monographs in the medi-

cal sciences. Vol. iv, nos. 1-4) Paper, \$4.50; cloth, \$5.50. 1782

Contents: Foreword, by John F. Fulton. Introduction, by Paul C. Bucy. Architecture of the precentral motor cortex and some adjacent areas, by Gerhardt von Bonin. The role of architectonics in deciphering the electrical activity of the cortex, by James L. O'Leary. Afferent connections, by A. Earl Walker. Efferent fibers, by Paul M. Levin. The pyramidal tract, by Sarah S. Tower. On excitatory and inhibitory processes within the motor centers of the brain, by N. Bubnoff and R. Heidenbain, translated by Gerhardt von Bonin and W. S. McCulloch. Cortico-cortical connections, by Warren S. McCulloch. Somatic functions, by Margaret A. Kennard. Relationship to the cerebellum, by Percival Bailey. Autonomic functions, by Margaret A. Kennard. The frontal eye fields, by Wilbur K. Smith. Electrical excitability in man, by Theodore C. Erickson. Effects of extirpation in man, by Paul C. Bucy. Relation to abnormal involuntary movements, by Paul C. Bucy. Clinical symptomatology, by Charles D. Aring. Pathology, by Charles Davison. Significance of the precentral motor cortex, by Marion Hines. Bibliography. Index.

Note: The bibliography is international and contains about 700 citations. A comprehensive summary of findings to date and a critical evaluation of the most recent results in relation to the existing literature. In addition to the systematic accounts of the anatomy, functions, pathology, and significance of the precentral motor cortex, the volume includes detailed case histories following extirpations in both man and the lower animals.

CONEL, JESSE LE ROY

The postnatal development of the human cerebral cortex. Volume I-II. Cambridge, Mass.: Harvard University Press, 1939-41. 2 v. illus. 31 cm. \$8.00. 1782a

Contents (abridged): Volume I, The cortex of the newborn. Volume II, The cortex of the one-month infant.

Note: The first two of a series of volumes in which the author will present the results of an extensive study of the postnatal development of the human cerebral cortex beginning at the time of birth. In Volume I the author discusses the condition of the neurons in the cortex of the full-term fetus immediately after birth. The definitive cytoarchitectonic pattern of the cerebral cortex is already established in the normal infant at that time. In the second volume the author presents the results of his investigations into the changes which occur in the structure of the cortex during the first month of postnatal life. In order to follow changes in the microscopic structure of the cortex, he used the following criteria: (1) width of the entire cortex and of each horizontal layer, (2) the number of nerve cells, (3) size of nerve cells, (4) condition of the chromophil substance, (5) neurofibrils in neurons, (6) size and length of the processes of nerve cells, (7) pedunculated bulbs, (8) varicosities on the processes, (9) size and quantity of exogenous fibers, and (10) the state of myelination. Physiologists and anatomists will be particularly interested in the volume because it represents the first comprehensive study of the field.

FAVILL, JOHN

Outline of the cranial nerves. Chicago: The University of Chicago Press, 1933. 112 p. illus. 19 cm. \$1.50. 1783

Contents: Olfactory nerve. Optic nerve. Oculomotor nerve. Trochlear nerve. Abducent nerve. Acoustic nerve. Trigeminal nerve. Facial nerve. Glossopharyngeal nerve. Vagus nerve. Spinal accessory nerve. Hypoglossal nerve. Appendix includes bibliography.

Note: A new grouping of old facts presenting necessary information in a convenient form for medical students. Each nerve is considered under five heads: anatomy, function, tests, pathology, and localization. The author considers the subject of cranial nerves as the cornerstone of clinical neurology.

GLOBUS, JOSEPH HAIM

Practical neuroanatomy; a textbook and guide for the study of the form and structure of the nervous system adapted to the needs of the student and practicing physician. Baltimore: W. Wood & Company, 1937. 387 p. illus. (part col.) 27 cm. \$6.00. 1784

Contents (abridged): Part I, Gross appearance of the brain: The ventral surfaces of the brain. The vascular channels of the brain and meninges. The cerebral hemispheres. The lateral ventricles. The pons, medulla oblongata, and fourth ventricle. Internal structure of the brain and spinal cord. Internal structure of the medulla. Internal structure of the pons. Internal structure of the brain stem. The specific cellular elements of the central nervous system. Cytoarchitecture of the cortex. Part II, The neuron: Cerebrospinal nerves. Intrinsic and extrinsic mechanisms of the spinal cord. Applied anatomy and physiology of the spinal cord. The nuclear columns in the brain stem. The cerebellovestibular system. The autonomic division of the nervous system. Functional localization in the cerebral cortex. Afferent and efferent pathways. The cerebrospinal fluid. Clinical examples. Preparation of nervous tissue for microscope study. Index.

Note: The aim of this book is to aid the student of neuroanatomy to make careful and accurate observations, coincident with independence and precision of interpretation. A collection of fifty-five unfinished drawings, outlines, diagrams and photomicrographs have been provided toward this purpose, and detailed instructions for dissection and microscopic studies are given, with a descriptive text amplified by summaries. The task of labeling the drawings is intentionally left to the student, who is thus required to make careful observations. A number of case histories with symptoms, diagnosis, and treatment are also included.

KRIEG, WENDELL JORDAN S.

Functional neuroanatomy. With illustrations and decorations by the author. Philadelphia: The Blakiston Company, 1942. 553 p. illus. 27 cm. \$6.50. 1785

Contents: Fundamentals. Development of central nervous system. Reflex mechanism of the spinal cord. Generalities on the brain stem. Somatic motor system. Branchial motor system. Visceral motor system. Visceral sensory system. Vestibular system. Auditory system. Visual system. Somesthetic system. Pyramidal system. Extrapyramidal system. Rhinencephalon. Cerebral cortex. Non-neural inclusions with the nervous system. The cerebellum. Autonomic system. Central control of autonomic system. Laboratory study of the central nervous system. Atlas of sections. Suggestions for further study.

Note: This text presents its subject from the functional or systemic point of view. A guide for laboratory work is incorporated in the book, and included also is a notable atlas of sectional reconstructions of the spinal cord, brain stem, and brain.

KUNTZ, ALBERT

The autonomic nervous system. Second edition, enlarged and thoroughly revised. Illustrated with 73 engravings. Philadelphia: Lea & Febiger, 1934. 697 p. illus. 24 cm. \$7.50. 1786

Contents: Introduction. Morphology and distribution of the autonomic nervous system. The autonomic ganglion cells. Central autonomic centers and conduction pathways. General physiology of the autonomic nervous system. Development of the autonomic nervous system. Innervation of the heart. Innervation of the blood vessels. Innervation of the respiratory system. Innervation of the digestive tube. Innervation of the biliary system. Innervation of glands. Innervation of the urinary organs. Innervation of the sex organs. Involuntary innervation of the eye. Autonomic innervation of skeletal muscle. Pathology of the autonomic nervous system. Visceral sensitivity and referred pain. Autonomic imbalance. The autonomic nervous system in disease. Surgery of the autonomic nervous system. Bibliography. Index.

Note: A comprehensive and detailed work in one volume. The results of many investigations, particularly in relation to surgery, are considered and evaluated. The bibliography covers 117 pages.

KUNTZ, ALBERT

A textbook of neuro-anatomy. Third edition, thoroughly revised. Illustrated with 307 engravings. Philadelphia: Lea & Febiger, 1942. 518 p. illus. 24 cm. \$6.00. 1787

Contents: Evolution and comparative anatomy of the nervous system. Origin and differentiation of the neural tube. Topography of the central nervous system. The cerebrospinal pathways. Morphology of the nerve cells. Interstitial tissue of the central nervous system. Myelination. Nervous integration.

Cerebrospinal nerves. Internal structure of the spinal cord. Peripheral and central spinal conduction pathways. The medulla oblongata. The pons. The mesencephalon. Long conduction pathways. Central connections of the cranial nerves connected with the medulla oblongata, pons and mesencephalon. The cerebellum. The diencephalon. The visual apparatus. The autonomic nervous system. The cerebral hemispheres: general morphology. The olfactory apparatus. The cerebral hemispheres: internal structure. Structure of the cerebral cortex. Functions of cerebral cortex. Laboratory outline. Bibliography. Index.

Note: This textbook for beginning medical students attempts to correlate anatomical data with the fundamental structural plan of the vertebrate nervous system and to relate the anatomical structure of the human nervous system to phylogenetic, anatomical and physiological knowledge. The book first presents the conception of the nervous system as a whole, then describes the simpler reflex and correlating mechanisms in the spinal cord and brain stem, and finally those of the long conductor pathways and cortex. The third edition contains new material on the thalamic connections of the *brachium conjunctum* and lemniscus systems, the hypothalamic nuclei, cortical neurons, and cortical afferent fibers. The short bibliography covers general textbooks and atlases from 1895 to 1938.

LARSELL, OLOF

Anatomy of the nervous system; a textbook from the developmental and functional point of view, and atlas of the nervous system of man. New York: D. Appleton-Century Company, Incorporated, 1942. 443 p. illus. (part col.) 25 cm. \$6.50. 1788

Contents: Tropisms and nervous mechanisms. Methods of studying the nervous system. The development of the nervous system. Structural elements. Receptors and effectors. Nerves and ganglia. The spinal cord. Cranial nerves. The medulla oblongata. The pons. The visceral system. The gustatory apparatus. Auditory apparatus. The vestibular apparatus. Proprioceptive apparatus. The cerebellum. The midbrain. The diencephalon. The cerebral hemispheres. The ventricles of the brain and the choroid plexus. The optic system. The olfactory apparatus and rhinencephalon. Structure of cerebral cortex. The efferent systems. Functions of the thalamus and the cerebral cortex. Atlas and sections of spinal cord and brain. Bibliography. Index.

Note: Intended for first-year medical students, this is a textbook from the developmental and functional point of view and includes an atlas of the nervous system of man. The plan of the book is to give a comprehensive account of structure and sufficient physiology to supply the functional significance of the parts described. The Atlas of the brain stem and spinal cord is placed at the end of the book for convenience while examining the successive cross-sections usually provided for study in the laboratory. Illustrated with 341 figures, many in color.

METTLER, FRED ALBERT

Neuroanatomy. With 337 illustrations, including 30 in color. St. Louis: The C. V. Mosby Company, 1942. 475 p. illus. (part col.) 26 cm. \$7.50. 1789

Contents: Part I, Gross aspects of the neural system: The spinal cord and its surrounding media. Structures surrounding the brain. Cranial nerves and autonomic system. Topography of the brain. Association connections of the hemispheres. Interior of the hemispheres. Cerebellum. Midbrain, pons and medulla. General gross features of transverse sections. Part II, Microscopic anatomy of the neural system: The spinal cord. Medulla oblongata. The pons. Mesencephalon. Sections through the thalamus and associated structures. Morphology and physiologic mechanisms of the diencephalon and related structures. Cerebral cortex. List of selected references. Indexes.

Note: This is a textbook written for the medical student beginning the study of neuroanatomy. No attempt has been made to give a full account of neurophysiology. As a criterion for need of special emphasis or for special clarification of the general principles involved, the author has used his own experience in encountering repeatedly evidence of deficient training on the part of clinical clerks or internes, and also his experience in noting subsequent difficulties met with by students as they progressed with this subject. Special attention has been paid to the matter of terminology, all technical terms being defined when first employed and the BNA equivalents and alternative names being included.

MILLER, HEYMEN RUDOLPH

Central autonomic regulations in health and disease, with special reference to the hypothalamus. Introduction by John F. Fulton. New York: Grune & Stratton, 1942. 430 p. illus. 23 cm. \$5.50. 1790

Contents: General physiology of the autonomic nervous system. Regulation of body temperature. Regulation of water and minerals. Central regulation of metabolism. Regulation of circulation. Autonomic regulation of respiration. Nervous regulation of the alimentary tract. Nervous regulation of the genitourinary system. Central regulation of the reproductive system. Regulation of the sleep-waking rhythm. Central mechanism of emotions. Response of the autonomic nervous system to pharmacodynamic substances. Anatomy of the autonomic nervous system to pharmacodynamic substances. Anatomy of the peripheral autonomic nervous system. Anatomy of the hypothalamus. Fiber connections of the hypothalamus.

Note: This monograph deals with the part played by the autonomic nervous system in regulating various normal vascular and metabolic processes and describes the extent to which these processes are affected by specific diseases. The newer work on the functions of the hypothalamus is covered in detail and there is full treatment of the problems of heat regulation, water metabolism, sleep, and cardiovascular disease.

RANSON, STEPHEN WALTER

The anatomy of the nervous system, from the standpoint of development and function. With 408 illustrations, some of them in colors. Seventh edition, revised. Philadelphia: W. B. Saunders Company, 1943. 520 p. illus. (part col.) 26 cm. \$6.50. 1791

Contents: Origin and function of the nervous system. The neural tube and its derivatives. Histogenesis. Neurons and neuroglia. Spinal nerves. Sympathetic nervous system. Spinal cord. Fiber tracts. General topography of the brain. Structure of medulla oblongata. Internal structure of the pons. Internal structure of the mesencephalon. Cranial nerves and their nuclei. Cerebellum. Diencephalon and visual apparatus. External and internal configuration of cerebral hemispheres. Rhinencephalon. Cerebral cortex. Great afferent systems. Efferent paths and reflex arcs. Meninges and blood vessels of the brain. Sections of the brain. Laboratory outline of neuro-anatomy. Bibliography. Index.

Note: Intended chiefly for the medical student and research workers, this book presents anatomy of the nervous system from the dynamic rather than the static point of view; that is to say, emphasis has been laid on the developmental and functional significance of structure. The student is led to think of the nervous system in its relation to the rest of the living organism. For the seventh edition, a new chapter was added on the meninges and blood vessels of the brain and extensive revision made of the discussions of the cerebellum, thalamus, hypothalamus, cerebral cortex, and sympathetic nervous system. Other changes are noted also.

RASMUSSEN, ANDREW THEODORE

The principal nervous pathways; neurological charts and schemes, with explanatory notes. Second edition. New York: The Macmillan Company, 1941. 73 p. illus. 28 cm. \$3.00. 1792

Contents: Relations of the meninges to the brain, spinal cord and cerebrospinal fluid. Neurological methods. Pain, temperature and light touch conduction. Tactile discrimination and deep sensibility. Vestibular or equilibratory system. Auditory system. Binocular vision and reflexes through the midbrain. Localization of fibers from the retina to the visual cortex. Innervation of the eye. General visceral afferent system. Respiratory system. Gustatory system. Olfactory system. Corticobulbar and corticospinal (pyramidal) system. Fiber connections of the corpus striatum (an extra pyramidal system). Chief efferent tracts, their relations to lower motor neurons and the final common path. Cranio-sacral division of the general visceral efferent system (autonomic or parasympathetic). Thoracico-lumbar division of the general visceral efferent system (sympathetic proper). Innervation of blood vessels. Index.

Note: In this book, which is designed particularly for the use of medical students, the author has organized the subject matter into functional systems in order to facilitate the teaching of this

difficult subject. He believes that by going through the spinal cord and brain first with one set of fibers and related gray matter, and then another, always in the direction of conduction, following first the main efferent paths, then association mechanism, and finally the efferent tracts, it is possible to establish early a dynamic point of view. The text has undergone considerable revision in this new edition, some plates have been corrected, and seven new ones have been added. The new material covers recent work done in experimental neurology and neurosurgery, particularly that which has afforded a more accurate knowledge of the pain-conducting system.

RILEY, HENRY ALSOP

An atlas of the basal ganglia, brain stem and spinal cord, based on myelin-stained material. Baltimore: The Williams & Wilkins Company, 1943. 708 p. illus. 22 cm. \$13.50. 1793

Note: The atlas includes 254 plates plus five key-plates in series as follows: Transverse series of the spinal cord oriented at a right angle to the long axis. Transverse series oriented at right angle to the longitudinal axis of the brain stem. Transverse series oriented according to the longitudinal axis of the hemisphere. Horizontal series oriented according to the longitudinal axis of the hemisphere. Horizontal series oriented according to the longitudinal axis of the brain stem. Sagittal series oriented according to the longitudinal axis of the brain. There follows a list of symbols representing generic classifications, a list of structures, references, and index to plates. The work is of value to neurologists and investigators and fills a need in teaching, because of its great detail and clear labeling. The plates are all from large photographs, the structures being identified by labels placed directly on the structure. The "list of structures" supplies in tabular form a great deal of information on the character, origin, and general significance of each structure.

STRONG, OLIVER SMITH, AND ADOLPH ELWYN

Human neuroanatomy. Baltimore: The Williams & Wilkins Company, 1943. 417 p. illus. (part col.) 26 cm. \$6.00. 1794

Contents: General organization and significance of the nervous system. Development. The neuron. Neuroglia. Histogenesis and segmental distribution. Peripheral nerves and their ganglia. Peripheral terminations of afferent and efferent nerve fibers. Meninges of the central nervous system. Spinal cord. Its fiber tracts. Peripheral portions of the autonomic system. The brain; anatomy of the medulla and pons. Internal structure of the medulla, of the pons. Mesencephalon. Cerebellum. Diencephalon and corpus striatum. Cerebral hemispheres. Cerebral cortex. Blood supply of the brain. Bibliography. Index.

Note: This book, the result of many years of neuroanatomical teaching, is intended to supply a knowledge of anatomy as the necessary basis for the diagnosis and localization of neural disturbances. Its purpose is to give the student and the physician a clear presentation of the structural mechanisms of the human nervous system together with some understanding of their functional and clinical significance. The first part is rather extensive because of the authors' conviction that a knowledge of these preliminaries is essential for an understanding of the machinery of the spinal cord and brain. The second part may be considered as applied neuroanatomy. In it the structural mechanisms are discussed in the light of clinical experience, and structure and function are linked.

TILNEY, FREDERICK, AND HENRY ALSOP RILEY

The form and functions of the central nervous system; an introduction to the study of nervous diseases; foreword by the late George S. Huntington. Third edition. 600 illustrations. New York: P. B. Hoeber, Inc., 1938. 851 p. illus. 26 cm. \$10.00. 1795

Contents (abridged): The central nervous system. Embryological development of the central nervous system. The unit of structure of the central nervous system. The integration of neurones to form the nervous system. Exposure and investigation of the spinal cord *in situ*. The spinal cord (five chapters). Removal of the brain and investigation of the brain-case. The medulla oblongata (six chapters). The pons Varolii (three chapters). The cerebellum (five chapters). The midbrain (three chapters). The interbrain (four chapters). The endbrain (twelve chapters). References. Index.

Note: A comprehensive textbook for medical students in neuroanatomy, designed to provide a clinical and physiological interpretation of the brain and spinal cord in sufficient detail for the requirements of practical application. In so far as possible the method of illustrating anatomical and physiological facts by clinical examples has been adhered to throughout the work. The citation of actual cases caused by organic disturbances of the tissues is extensively utilized to elucidate the significance of the several divisions of the brain and spinal cord. One of the purposes of the third edition has been to reduce the bulk of the book through condensation and excision of detailed evidence and historical backgrounds. The gross anatomical description of the cerebellum has also been shortened, while new data covering advances between 1923 and 1938 have been incorporated. The bibliography contains about 360 references to the pertinent world literature.

TURNER, OSCAR ARTHUR

A manual of neurohistologic technique. St. Louis: The C. V. Mosby Company, 1940. 73 p. 26 cm. \$2.00. 1796

Note: This book brings under one heading various neurotechnical methods which may be carried out in a general pathological laboratory. Attention is directed to those methods or their modifications which can be done on formalin-fixed tissue. Preference is also given those stains that can be carried out with the least experience on the part of the laboratory worker, but which, nevertheless, give reliable and consistent results.

WERTHAM, FREDERIC, AND FLORENCE WERTHAM

The brain as an organ; its postmortem study and interpretation. With an introduction by Adolf Meyer. New York: The Macmillan Company, 1934. 538 p. illus. 24 cm. \$7.50. 1797

Contents: Preface. Introduction by Adolf Meyer. The brain as an organ. Macroscopic examination and dissection. Histological technique: principles and methods. Alterations of the individual components of the nervous tissue. Kinds of lesions. Distribution of lesions. The extent of the normal. The interpretation of lesions. Correlation of lesions with psychopathological phenomena. Comparative histopathology. Some histopathological syndromes that may be associated with mental disorder. Is there a histopathology of schizophrenia? Forensic neurohistology. Selected bibliography. Index.

Note: This book was written in order to present an idea—that the brain is an organ, to be studied in the same manner as any other organ of the body, and that future progress in the study of the histopathology of the central nervous system is dependent upon acceptance of this fact. The authors point out that the variety of histological processes found in the brain is extraordinarily limited and that their character is more dependent upon the intensity and duration of the process than upon its etiology. Under very different pathogenetic conditions, the same types of lesions may occur. Thus the quality of lesions alone is far less characteristic for special histopathological processes than has always been assumed, and it is their distribution that is important. Neuropathology must enjoy a closer union with general pathology. To set forth their views, the authors have presented concretely the whole range of the fundamental data of the histopathology of the brain. The material discussed is derived from neuropsychiatric cases, from unselected cases of somatic diseases in general hospitals, and from animals with both experimental and spontaneous diseases. The significance of the non-neuropsychiatric material is emphasized because of the tendency of investigators to correlate with clinical symptoms any sort of microscopically demonstrable alterations they find in brains. Full directions for practical work in macroscopic and microscopic examinations of the central nervous system are also given.

Histology

BAILEY, FREDERICK RANDOLPH

Bailey's Textbook of histology, by Philip E. Smith, editor, Russell L. Carpenter, Wilfred M. Copenhaver [and others]. Eleventh edition. Baltimore: The Williams & Wilkins Company, 1944. 764 p. illus. (part col.) 23 cm. \$6.00. 1798

Contents: The living cell. General features of vertebrate development. Morphogenesis. Epithelium. The connective tissues. Cartilage and bone. Blood and lymph. Muscle. Organization of nervous tissue. Nervous tissue. The circulatory system. Lymphoid organs. The integument. Glands and the general structure of mucous membranes. The digestive system. The respiratory system. The urinary system. The male reproductive system. The female reproductive system. The endocrine glands. The organs of special senses. Index.

Note: A textbook intended primarily for first-year medical and dental students and for use in other colleges where a fairly comprehensive course in histology is given. The authors have attempted to present the major controversial differences of opinion but have intentionally excluded a considerable body of facts which were deemed more suitable for source books. Bibliographies are included in each chapter. The eleventh edition contains new illustrations, some in color, together with new material on the female reproductive system and the placenta.

BENSLEY, ROBERT RUSSELL, AND S. H. BENSLEY
Handbook of histological and cytological technique. Chicago: The University of Chicago Press, 1938. 167 p. 28 cm. \$2.00. 1799

Contents: Part I, Techniques for the study of fresh tissues. Part II, Techniques for the study of fixed tissues. References and index.

Note: A manual based on experience of 25 years in meeting the problems of minute anatomy in the Department of Anatomy, University of Chicago. Emphasis is on the cell, not so much as an integer of tissue structure and function, but on its components and their functional variation. Discussions of the microtome knife, theory of staining, and the character of glands have been included.

BREMER, JOHN LEWIS

A text-book of histology, arranged upon an embryological basis, by J. Lewis Bremer. Rewritten by Harold L. Weatherford. Sixth edition of "Lewis and Stöhr." Five hundred and ninety-eight illustrations. Philadelphia: The Blakiston Company, 1944. 723 p. illus. (part col.) 23 cm. \$7.00. 1799a

Contents (abridged): Microscopic anatomy. Microscopy: Development of the microscope. Use of the microscope. Methods for studying cells and tissues. Cytology: the cell. Cytomorphosis. Vital phenomena. Formation and reproduction of cells. General histology: Histogenesis. Epithelium. Mesenchymal tissues. Muscular tissue. Nervous tissue. Vascular tissue. Special histology: Blood forming and blood destroying organs. The endodermal tract. Endocrine glands. Urinary organs. Male genital organs. Female genital organs. Skin. Teeth. Brain. Organs of special sense. Nose. References cited. Index.

Note: Recent advances in histology necessitated a new edition of this standard textbook. As in previous editions emphasis is placed upon development as essential for the understanding of structure and function. Three hundred two of the 598 illustrations are new with this edition and more than 700 references to both classical and recently published investigations are cited.

CAMERON, GLADYS

Essentials of tissue culture technique. Preface by Robert Chambers. Illustrations and chapter on photomicrography, by C. G. Grand. New York: Farrar & Rinehart, Incorporated, 1935. 134 p. illus. 23 cm. \$3.00. 1800

Contents: Tissue culture as a biological method. Space and basic equipment. Sterilization. Glassware. Instruments. Accessories. Physiological solutions—tyrode. Preparation of plasma and serum. Embryonic extract and substitutes. Preparation of cultures in solid medium. Preparation of cultures in fluid medium. Micromanipulation of tissue cultures. Histological technique—vital staining. Photomicrography. Appendices: List of precautions to ensure good growth. A suggested weekly routine. Formulas. Conversion tables. Bibliography. Supplementary references. Index.

Note: A thorough presentation of the subject, intended for scientists, laboratory technicians, and others concerned with the culture of tissue. Considerable emphasis is placed on the Carrel technique and its modifications.

COLE, ELBERT CHARLES

Text-book of comparative histology. Philadelphia: The Blakiston Company, 1941. 396 p. illus. 23 cm. \$4.00. 1801

Contents: Introductory section: Problems of histology. Nature of cells. Origin of tissues. Structure and function of tissues: Epithelial tissues. Vascular tissues. Connective tissues. Supporting tissues. Contractile tissues. Nerve tissue. Organs as tissue complexes: Blood-vascular system. Lymphatic system. Integument. Digestive system. Respiratory system. Excretory system. Reproductive system. Endocrine system. Nervous system. Sense organs. Instruments and methods: Use and care of the microscope. Methods of recording data. Histological technique.

Note: Some features of this text for premedical students are: a large number of reproductions of microphotographs, outline schedules showing the sequence of steps in the preparation of tissues, a chapter on histological technique, and a chapter on preparing drawings. Bibliographies are appended to the chapters.

COWDRY, EDMUND VINCENT

A textbook of histology; functional significance of cells and intercellular substances. Third edition, thoroughly revised. Philadelphia: Lea and Febiger, 1944. 426 p. illus. (part col.) 25 cm. \$7.00. 611.018 C839 1934 1801a

Contents: Orientation. Blood, the principal integrator. Mechanism of circulation. Drainage into blood. Chemical broadcasting via the blood. Intake of material and removal of waste. Oxygen intake and carbon dioxide elimination. Regulation of composition of blood. Rapid integration. Organization and support. Movement. Perpetuation of race. Unification, protection, adjustment. Bibliography.

Note: A textbook for medical students. Also suitable for use as a reference work by medical practitioners. The author stresses the correlation of form and function, and in order to keep body dynamics as a whole foremost in his readers' attention he has based his treatment on the blood vascular system as the principal integrator of the cells and cell activity.

JORDAN, HARVEY ERNEST

A textbook of histology. Eighth edition. New York: D. Appleton-Century Company, Incorporated, 1940. 690 p. illus. (part col.) 25 cm. \$7.00. 1802

Contents: The protoplasm and the cell. Tissues. Connective tissue, cartilage and bone. Muscular tissue. Nervous tissue. Peripheral nerve terminations: end-organs. The blood vascular system. Blood. The lymphatic system. Mucous membranes and glands. The skin. The respiratory system. The digestive system. The urinary system. The reproductive system. The ductless glands, endocrine glands. The nervous system. The eye. The ear. List of references. Index.

Note: This textbook is written for students and practitioners of medicine. The approach in general is from a functional point of view. Where a definite purpose can be served comparative anatomic data are included. An effort is made to include the more significant results of the latest investigations, especially as regards cytologic data. Extensive description is accorded the endocrine organs and tissues in view of their increasing importance in clinical medicine. The illustrations, 609 in number, include over 300 originals. A list of 502 literature references is appended, for the practitioner and student who may wish to consult the more important original publications.

KRAJIAN, ARAM A.

Histological technic, including a discussion of botanical microtechnic. With 44 text illustrations and 7 color plates. St. Louis: The C. V. Mosby Company, 1940. 272 p. illus. (part col.) 22 cm. \$3.50. 1803

Contents: Fixation of tissue. Equipment for section-cutting. Methods of section making. Staining solutions. Clearing reagents. Mounting reagents. Staining methods. Special or differential staining methods. Botanical microtechnic, by E. D. Woodhouse. Histopathological methods of the central nervous system. Miscellaneous methods. Index.

Note: This handbook of laboratory methods in histology is intended for the beginner and inexperienced worker who requires specific directions which he may apply to his problems to obtain the desired results, and also for the experienced worker who seeks the latest improved methods. The frozen-section method has been emphasized. Modifications of special staining methods which are based on speed consistent with accuracy and faithful preservation are described, together with new methods such as the xanthidrol test, a new aniline blue stain and mucin stain, the eosinol method, glycogen staining technique, and many others. Step-by-step outlines of each procedure are given, together with expected results.

LAMBERT, AVERY ELDORUS

Introduction and guide to the study of histology for students in medical schools and colleges. Philadelphia: The Blakiston Company, 1938. 542 p. illus. (part col.) 24 cm. \$5.00. 1804

Contents: Equipment: The microscope. Cell. Epithelial tissues. Connective tissues (fibrous). (Cartilage). (Bone). Blood. Muscular tissues. Nervous tissues. Vascular system. Lymphoid organs. Digestive system. Glands associated with the digestive system. Respiratory system. Urinary system. Ductless glands. Skin and its appendages. Male reproductive organs. Female reproductive organs. Eye. Ear. Index.

Note: A text for medical students who do not plan to specialize in histology but wish to acquire a fundamental knowledge of the subject. Directions for laboratory study are included. This edition is an expansion of the author's *A guide to the study of histology and microscopic anatomy*.

MAXIMOW, ALEXANDER A., AND WILLIAM BLOOM

A textbook of histology. Fourth edition, completely revised, with 562 illustrations, some in colors. Philadelphia: W. B. Saunders Company, 1942. 695 p. illus. (part col.) 25 cm. \$7.00. 1805

Contents (abridged): Introduction. Epithelium. Blood. Connective tissue proper. Blood forming and destroying tissues. Cartilage. Bone. Muscular tissue. Nervous tissue. Blood vascular system. Lymphatic system. Spleen. Glands. Skin. Oral cavity and associated structures. Esophagus and stomach. Intestines. Liver, bile ducts and gall bladder. Pancreas. Respiratory system. Urinary system. Male and female genital systems. Mammary gland. Eye. Ear. Index.

Note: The purpose of this book is to provide students, and all others interested, with an adequate description of the minute structure of the human body and the morphologic evidences of its functions, introducing thereby as much of the data of physiology, pathology, and experimental zoology as seems pertinent and desirable in the limits of the field of histology. The subject is therefore presented from its living, functioning, and human aspects. Not only is the minute structure of each human part given, but also an explanation of which cells of that part are responsible for each phase of its function. 562 illustrations, of which some are in color, offer practical assistance. Bibliographies will be found at the ends of chapters. Throughout the book basic facts and concepts are given in larger type and more detailed descriptions in smaller type. For the fourth edition the book was reset in new type. Outstanding in the revision are the many significant changes in the chapters on bone, nerve, spleen, female generative system, and the eye.

STILES, KARL AMOS

Handbook of microscopic characteristics of tissues and organs. Second edition. Philadelphia: The Blakiston Company, 1943. 204 p. illus. 23 cm. \$1.50. 611.018 S564 1939 1806

Contents: Tabular charts. How to identify tissues and organs. Epithelial tissues. Connective tissues. Blood (human) tissue. Muscular tissues. Nervous tissues. Vascular system. Lymphoid organs. Digestive system. Glands of the digestive system. Respiratory system. Endocrine glands. Urinary system. Male reproductive system. Female reproductive system. Skin and mammary gland. Eye. Ear. Olfactory organ. Addenda. Glossary.

Note: An outline book suitable for review or as a laboratory guide. A feature is the presentation of the histology of the various systems and organs of the body in tabular charts. This edition has been revised and enlarged.

Human Embryology

CORNER, GEORGE WASHINGTON

Ourselves unborn; an embryologist's essay on man. New Haven: Yale University Press, 1944. 188 p. illus. 21 cm. (The Terry lectures) \$3.00. 1808

Contents: Preface. List of plates. List of text figures. The embryo as germ and as archive. Prenatal fate and foreordination. The generality and the particularity of man. Bibliography. Index.

Note: Although most of the material in this book was first delivered as lectures before audiences assumed to have no special education in biological sciences, the style is not over-popularized. Special attention is given to recent knowledge, and the work will interest both general readers and readers with scientific education in subjects other than embryology.

DAVENPORT, CHARLES BENEDICT

How we came by our bodies. New York: Henry Holt and Company, 1936. 401 p. illus. 20 cm. \$4.00. 1809

Contents: Part I, The course of development: The beginnings. Outlining the general body form. Getting ready to learn its world. Provisions for nutrition, sanitation, and reproduction. Putting on the finishing touches. Part II, The machinery of development: The cell as a chemical factory. The genes and how they do their work. The master builders. How the several tissues are made. Meeting stresses and accidents. Part III, History of the origin of the machinery of development: The history of our genes and the mechanism by which they have been handed on to us. The changing world of organisms. Mutations and how they are handed on. The past and the future. Index and glossary.

Note: Written as much for the interested layman as for the college student, this volume presents a clear and elementary discussion of human heredity. It traces the development of a human being from the single cell to the complicated organism of the adult. It makes clear the nature of the cell, how cells become differentiated, the various factors of heredity, and the evolutionary process in vertebrate life. Bibliographical references are appended to each chapter.

DODDS, GIDEON STANHOPE

The essentials of human embryology. Second edition. New York: John Wiley & Sons, Inc., 1938. 316 p. illus. 23 cm. \$4.00. 1809a

Contents: The general principles of development. The germ cells. Ovulation, menstruation, and pregnancy. Early stages of human development. The development of the external form. The membranes and the placenta. The early history of the mesoderm. The supporting tissues and the skeleton. The muscles. The skin and associated structures. The alimentary system. The respiratory system. The body cavities. The heart and blood vessels. The lymphatic system. The blood cells. The urogenital organs. The nervous system. The sense organs. General notes on development. Index.

Note: Written primarily for medical students and secondarily for those who are preparing for the study of medicine in schools where embryology is a prerequisite subject. It presupposes a knowledge of the gross and microscopic structure of the human body and is designed especially to interpret and clarify such knowledge. Human rather than comparative embryology is dealt with. The chapter on ovulation, menstruation, and pregnancy has been rewritten for the second edition in the light of recent knowledge of sex hormones. Additional changes have been made in such topics as developmental stages, embryo age, placenta, bone development, vascular system, and others.

JORDAN, HARVEY ERNEST, AND JAMES ERNEST KINDRED

Textbook of embryology. Fourth edition. New York: D. Appleton-Century Company, Incorporated, 1942. 613 p. illus. (part col.) 25 cm. \$6.75. 1809b

Contents: Introduction. The germ cells. Maturation. Fertilization. Cleavage. Blastulation and gastrulation. Notogenesis and

cephalogenesis. Adnexogenesis. The human embryo. Determination of the age of young human embryos. The development of the placenta, umbilical cord and umbilical vesicle. The development of the face. The digestive system. The respiratory system. Cardiovascular system. Hemopoiesis. The celomic cavities. The urogenital system. The nervous system. The skeletal system. The muscular system. The integumentary system. The recapitulation theory. Body growth. Teratology and eugenics. Literature. Laboratory exercises. Author index. Subject index. Interleaved tables of normal development of first month and thereafter.

Note: Designed primarily for the use of medical students and practitioners. Its chief objective is to present an orderly account of human development. To this end, comparative data have been made subsidiary. However, in the discussion of early development full use is made of the more recent experimental embryologic data, particularly as regards the role of the "inductors" or embryonic hormones. The relations of normal to abnormal development of major systems are emphasized throughout the book; and wherever possible, functional interpretations of the underlying factors involved in normal and abnormal development are introduced. In elucidation of the anatomic facts of development, the phylogenetic aspects of man's ontogeny are constantly emphasized. Also the four-dimensional nature of human development is presented throughout by continual reference to the times at which the various primordia appear. The book is illustrated with photographs, drawings of the sections and of models derived from the study of human materials. Wherever possible the major facts of development of the several systems are incorporated into tables for ease of review and reference. From these tables any system can be followed from its initial appearance throughout its prenatal history. A considerable amount of new text material and 78 new illustrations have been added in this edition.

KRAFKA, JOSEPH

Human embryology. With 222 illustrations. New York: P. B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 1942. 395 p. illus. 24 cm. (Medical students series) \$4.75. 1810

Contents: General embryological concepts. Historical development of human embryology. The male reproductive tract. The female reproductive tract: the ovaries. The female reproductive tract: the tubes, uterus and vagina. Hormonal control of the genital system. Fertilization and cleavage. The youngest known human implanted ovum: Hertig-rock no. 7699. Axiogenesis. Primary metamerism. Establishment of external form: branchiogenesis. Correlation in internal differentiation. Development of the placenta. Cardiogenesis. Development of the arterial system. Development of the venous system. Embryonic hematopoiesis and hemolysis. Shift in the circulation at birth. The stomoderm and the branchial derivatives. The trachea, lungs, and diaphragm. The gastrointestinal system. The nephroi and the extrarenal passages. The reproductive system. I. Development of the indifferent state. The reproductive system. II. Differentiation of the male from the indifferent state. The reproductive system. III. Differentiation of the female from the indifferent state. The central nervous system. The peripheral nervous system. Development of the eye. Development of the ear. Development of the nose. Development of the skeletal system. Development of the muscular system. Development of the integument.

Note: A text for first courses in the subject in medical colleges. To keep the book concise, topics such as experimental embryology and evolution have been omitted. References to pertinent literature are appended to the chapters.

MURPHY, DOUGLAS POWER

Congenital malformations: a study of parental characteristics with special reference to the reproductive process. Philadelphia: University of Pennsylvania Press, 1940. 98 p. illus. 23 cm. \$2.00. 1810a

Contents: Materials and methods. Frequency of malformations. Non-reproductive characteristics of parents. Maternal characteristics related to childbearing. Defective child pregnancy. Characteristics of offspring. Etiology of congenital malformations. Discussions and summary. Bibliography.

Note: A study of 890 deaths of defective individuals over a period of five years (1929-1933) in Philadelphia, which reveals that malformations arise solely from influences which affect the germ cells prior to fertilization.

Embryology

Human Embryology

Human Anatomy

1811

WINDLE, WILLIAM FREDERICK

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Physiology of the fetus: origin and extent of function in prenatal life. Philadelphia: W. B. Saunders Company, 1940. 249 p. illus. 24 cm. \$4.50.

1811

Contents: Introduction. Fetal heart and circulation. Blood of fetus. Fetal respiration, respiratory movements, digestive system, kidney and fluids, skin, and muscles. Genesis of function in nervous system. Conditions regulating fetal nervous activity. Fetal motor reactions and reflexes. Fetal senses. Fetal endocrine glands. Fetal nutrition and metabolism. Index.

Note: This book is of interest to both clinician and research worker, and physiologists, biologists, neurologists, obstetricians,

anatomists, pediatricians, psychologists, and medical students will find in it information bearing on their respective fields. The aim of the work is to present, rather concisely, the facts on which a thorough, yet practical, understanding of fetal physiology is based. Particular attention has been paid to correlation of material and it will be found that the author has related functional systems to each other as well as to the maternal organism. The discussion of circulation, conditions of respiration, and of the nervous system are worthy of note. In taking up the latter, the author has presented it not as an independent unit, but in its functional relationship to other systems. The importance of anoxemia and asphyxia in altering behavioral manifestations in prenatal life has been considered, and there is described the many functional changes occurring in the fetus at birth. Facts are stressed that bear on asphyxia and resuscitation at birth and which particularly concern the obstetrician. Bibliographic references are placed at the end of each chapter.

PHYSIOLOGY

General

ADOLPH, EDWARD FREDERICK

Physiological regulations. Lancaster, Pa.: The Jaques Cattell Press, 1943. 502 p. illus. 25 cm. \$7.50. 1812

612
Ad 72A
Contents: Preface. Abstract. Introduction. Water exchanges of dog. Other types of water increment (dog). Variabilities of water relations (dog). Water relations of man. Water relations of frog. Water relations of other species. Equilibrations in parts of organisms. General features of water exchanges. Some other correlatives of water content (dog). Some other correlatives of water content (in other species). Further correlatives of water content and exchanges. Water balances and exchanges. Recapitulations. Heat. Diverse components. Uniformities and comparisons among components. Interrelations among components. Choosing physiological variables. Physiological regulations. Some speculations concerning regulations. Conclusions. References. Index.

Note: This work is a textbook and a reference book for students, physiologists, biologists, and other science workers interested in metabolism. The major fields of the study include water exchanges in animals, rates of certain classes of physiological processes, quantitative comparison of like functions in diverse species and individuals, organ and tissue exchanges, and similarities and contrasts in the metabolisms of diverse components. Physiology is viewed as a systematic account of how organisms are endowed to preserve their properties automatically. An extensive bibliography is included.

612
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ANNUAL REVIEW OF PHYSIOLOGY. Vol. VI, 1944.

James Murray Luck, editor. Victor E. Hall, associate editor. Stanford University, Calif.: Annual Reviews, Inc., 1944. 630 p. 23 cm. \$5.00. 1813

Contents: Developmental physiology, by V. Hamburger. Growth; neoplastic growth, by J. Furth. Physiological effects of heat and cold, by J. Field, 2nd, and V. E. Hall. Tissue water and electrolyte, by D. C. Darrow. Energy metabolism, by M. Kleiber. Respiration, by T. Bernthal. The physiology of the skin, by S. Rothman and P. Fleisch. Digestive system, by B. Slutzky and A. C. Andersen. Liver and bile, by L. A. Crandall, Jr. Kidney, by E. Braun-Menendez. Blood, by A. J. Quick. Heart, by R. Ashman. Conduction and synaptic transmission in the nervous system, by D. P. C. Lloyd. Visceral functions of the nervous system, by B. A. McSwiney. Vision, by F. W. Weymouth. Metabolic functions of the endocrine system, by F. G. Young. Reproduction and its endocrine control, by A. S. Parkes. Physiological psychology, by W. Freeman and J. W. Watts. Industrial physiology, by E. Simonson. Indexes.

Note: This review has been published annually since 1939. The international literature on widely varying subjects coming under the heading of physiology is critically reviewed by a selected group of authors. The topics vary with each issue. The publication is intended for physiologists and physicians in general.

612
C 1642
CANNON, WALTER BRADFORD

The wisdom of the body. Revised and enlarged edition. New York: W. W. Norton and Company, Inc., 1939. 333 p. illus. 22 cm. \$4.00. 1814

Contents: Preface. Preface to the second edition. Introduction. The fluid matrix of the body. The safe-guarding of an effective fluid matrix. Thirst and hunger as a means of assuring supplies. The constancy of the water content of the blood. The homeostasis of blood sugar. The homeostasis of blood proteins. The homeostasis of blood fat. The homeostasis of blood calcium. The

maintenance of an adequate oxygen supply. The homeostasis of neutrality in the blood. The constancy of body temperature. The aging of homeostatic mechanisms. Natural defenses of the organism. The margin of safety in bodily structure and functions. The general functions of the two grand divisions of the nervous system. The role of the sympathico-adrenal system in homeostasis. The general features of bodily stabilization. Epilogue: Relations of biological and social homeostasis. A list of publications from the physiological laboratory in Harvard University, on which the present account is based. Index.

Note: The first presentation for the general reader of the stabilizing devices by which our bodies are kept normal—a process the author calls homeostasis. This revised and enlarged edition incorporates new facts and developments in the seven years since the publication of the first edition. Also the chapter on the effects of age on homeostatic mechanisms has been added.

CHILD, CHARLES MANNING

Patterns and problems of development. Chicago: The University of Chicago Press, 1941. 811 p. illus. 24 cm. \$8.00. 1815

612
C 438
Contents: Problems and material. General characterization of developmental patterns. Concerning methods of physiological analysis. Physiological characteristics of axiate patterns in differential modification of development, coelenterates and flatworms, echinoderms, other animal groups. Gradients and fields, determination, differentiation, and dedifferentiation. Physiological integration, dominance and physiological isolation. Physiological dominance and organization in reconstitution. Reconstitutive patterns in relation to experimental conditions. Inductors and so-called "organizers" in embryonic development. Certain embryonic reconstitutions in relation to pre-existing pattern. Cleavage and developmental pattern. Questions of origin of certain agamic patterns under natural conditions. Origin and nature of embryonic patterns: the problems and the evidence. Physiological integration, differentiation, and growth in the progress of development. Appendixes. Bibliography. Index.

Note: The author of this work holds that any adequate theory of development must have a broader basis than development from the egg alone. He is more interested in questions of origin and the nature of developmental patterns than in the structural characteristics of patterns or organizations already present. He brings together many lines of experimental evidence which support his view that developmental patterns in their most general terms are behavior patterns in protoplasmic of specific genetic constitutions. His view has aroused both enthusiasm and controversy for many years. The bibliography lists more than 1000 titles.

CLENDENING, LOGAN

The human body. Illustrations by W. C. Shepard and Dale Beronius and from photographs. Third edition, corrected, enlarged, and rewritten. New York: A. A. Knopf, 1937. 443 p. illus. 24 cm. \$3.75. 1815a

Contents (abridged): Part I, The human body as a unit: Definition. Knowledge of the human body as a factor in civilization. Height, weight, physique and span of life. Heredity and environment. Part II, The human body as an organism for the conversion of food and air into energy and tissue. Part III, The human body as an organism for the reproduction of its own kind. Part IV, The human body and disease: The nature of disease processes. Repair, healing and inflammation. Infections. Immunity. Hypersensitiveness. Pathologic tissue changes from various causes. Neoplasms, tumors, cancer, etc. De senectute and death. Index.

Note: A readable and scientifically reliable book designed for the general reader. It is used also as supplementary reading in college courses in biology and physiology. In the third edition, material was added on sulfa drugs, penicillin, and other recent discoveries.

COWDRY, EDMUND VINCENT, EDITOR

Problems of ageing; biological and medical aspects. Contributors: Edgar Allen, Lewellys F. Barker, W. B. Cannon [and others]. Second edition. Baltimore: The Williams & Wilkins Company, 1942. 936 p. illus. 23 cm. \$10.00. 1816

Contents: Ageing in plants, by William Crocker. Senescence and death in Protozoa and invertebrates, by H. S. Jennings. Ageing of insects, by L. O. Howard. Ageing of vertebrates, by T. Wingate Todd. Human cultural levels, by Clark Wissler. Longevity in retrospect and in prospect, by Louis I. Dublin. Cardiovascular system and blood, by Alfred E. Cohn. Lymphatic tissue, by E. B. Krumbhaar. Respiratory system, by C. C. Macklin and Madge T. Macklin. Digestive system, by I. C. Ivy. Urinary system, by Jean R. Oliver. Skeleton and locomotor system, by T. Wingate Todd. Teeth and jaws, by Hamilton B. G. Robinson, Leroy R. Boling and Benno E. Lischer. Ageing of the skin, by F. D. Weidman. The thyroid, pancreatic islets, parathyroids, adrenals, thymus and pituitary, by A. J. Carlson. Female reproductive system, by Edgar Allen. Testes and hormones, by Earl T. Engle. Male secondary sexual organs, by Robert A. Moore. Ageing of the nervous system, by Macdonald Critchley. The eye, by Jonas S. Friedenwald. The ear, by Stacy R. Guild. Ageing of homeostatic mechanisms, by Walter B. Cannon. Of tissue fluids, by E. V. Cowdry. Of individual cells, by E. V. Cowdry. Ageing processes considered in relation to tissue susceptibility and resistance, by Wm. deB. MacNider. Chemical aspects and the effect of diet upon ageing, by C. M. McCay. Histochemical changes in ageing, by Oliver H. Lowry and A. Baird Hastings. Psychological aspects of ageing, by Walter R. Miles. Psychological guidance for older persons, by George Lawton. Changes in personality and psycho-sexual phenomena with age, by C. V. Hamilton. Ageing from point of view of clinician, by Lewellys F. Barker. Diagnosis, prophylaxis and treatment in old age, by Albert Mueller-Deham. Social urgency for research, by Edw. J. Stieglitz. Historical retrospect (quotations), by C. M. McCay.

Note: What is known about the ageing process is presented in this symposium by investigators from a wide variety of fields. The book is a publication of the Josiah Macy, Jr., Foundation. In this second edition nine new chapters have been added, while the original chapters have been revised and, to a certain extent, abbreviated.

DILL, DAVID BRUCE

Life, heat, and altitude; physiological effects of hot climates and great heights. Cambridge, Mass.: Harvard University Press, 1938. 211 p. illus. 20 cm. \$2.50. 1816a

Contents: Energy exchange and environment. Perspiration. Thirst. Man in hot climates, wet and dry. Animal life in deserts. Animal life in great heights. Man in high altitudes. High altitude flight. Index.

Note: A discussion in monographic form of some of the investigations carried out in the Fatigue Laboratory of Harvard University and of the literature related to the physiological responses of living organisms to stress. The author shows that studies of life in hot climates and high altitudes reveal the superior adaptability of some species and demonstrate concretely the extent to which the variations in adaptability in man depend on his physiological endowments. Bibliographic references appear in footnotes. The material is based on eight lectures by the author given at the Lowell Institute.

DUKES, HENRY HUGH, AND OTHERS

The physiology of domestic animals, by H. H. Dukes. With a chapter on The physico-chemical basis of physiological phenomena by E. A. Hewitt, a part on The endocrine organs and reproduction, revised by S. A. Asdell, and a foreword by H. D. Bergman. Fifth edition, revised. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1942. 721 p. illus. 23 cm. \$6.00. 1817

Contents (abridged): Introductory: the circulating fluids of the body. The circulation of the blood. Respiration. Digestion and absorption. The kidneys and urine; the skin. Metabolism and heat regulation. Muscle and nerve. The central nervous system. The special senses. The endocrine organs and reproduction. Index.

Note: Represents an attempt to provide students of veterinary medicine with a suitable textbook for their courses in animal physiology. The work is also useful to students of animal husbandry and to practitioners of veterinary medicine as a reference source. The material is based largely on the knowledge derived from researches made on laboratory mammals and published in the literature of the field. There are rather extensive lists of references following each section. The fifth edition contains new material on the digestion in the chicken, the respiration of birds, reproduction in the fowl, physiological oxidations, urine in the chicken, and the physiology of the endocrine glands in the animal, as well as new references and additional illustrations.

HAGGARD, HOWARD WILCOX

Man and his body; with an introduction by Yandell Henderson. New York: Harper and Brothers, 1938. 594 p. illus. 22 cm. \$4.00. 1818

Contents: The human machine and the source of its energy. Digestion and its derangements. Food, work, and heat. The complete normal diet. The circulation and its disturbances. The heart and its disorders. The lymphatic system. Respiration and vital combustion. The lungs and their diseases. Gases, dusts, and poisons. The urinary system and its disorders. The skin and its infections. Parasites and the diseases they carry. The nervous system, its service and failures. The eye and ear and their defects. Posture and mechanics of bones and joints. Muscular activity and fatigue. Temperature of the body and its regulation. Climate and air conditioning. Reproduction and the organs of sex. Growth, development, and longevity. The principles of heredity. Cancer. The principles of infection, immunity, and allergy. Certain infectious diseases. Appendix. Index.

Note: This book discusses the basic concepts of human physiology and personal health. This edition has been revised to incorporate new information developed since the publication of the first edition. The treatment is primarily for lay readers, particularly employers and engineers in charge of labor, but the book is used also as an elementary text in medical and general college courses. The school edition is published with the title, *The science of health and disease*.

JACOBSON, EDMUND

Progressive relaxation; a physiological and clinical investigation of muscular states and their significance in psychology and medical practice. Second edition. Chicago: The University of Chicago Press, 1938. 493 p. illus. 23 cm. (The University of Chicago monographs in medicine) \$5.00. 1819

Contents: Rest and relaxation in the practice of medicine. General features of neuromuscular hypertension. Neuromuscular hypertension in various diseases. General features of progressive relaxation. The technique of progressive relaxation—general form. Nature and technique of differential relaxation. Early history of present method. Influence of relaxation upon flexion reflex, knee-jerk, mental activities. Related psychological factors. Emotions and the neuromuscular element. Tonus and nervous regulation of muscular contraction. Augmentation and related phenomena. Explanatory principles of relaxation. Electrical measurements of muscle contraction and relaxation. Electrophysiology of mental activities. Cultivation of quick relaxation and of slow progressive relaxation. Spastic esophagus and mucous colitis. Progressive relaxation in divers medical conditions—illustrative cases. Therapeutic use of relaxation. Bibliography. Author index, subject index.

Note: A systematic analysis of neuromuscular states in man, and their significance in medical diagnosis and practice. It includes the author's method of treating the emotionally maladjusted and his physiological method of quieting the nervous system, including the mind. In this edition three chapters have been added concerning the electrical measurement of nervous and muscular states. There is an excellent bibliography.

KLEITMAN, NATHANIEL

Sleep and wakefulness as alternating phases in the cycle of existence. Chicago: The University of Chicago Press, 1939. 638 p. illus. 23 cm. (The University of Chicago monographs in medicine) \$5.00. 1820

Contents (abridged): Functional differences between wakefulness and sleep. The course of events during the sleep phase. Periodicity. Interference with the sleep-wakefulness cycle. Spontaneous changes in the sleep-wakefulness cycle. Means of influencing the sleep-wakefulness cycle. States resembling sleep. Theories of sleep. Bibliography.

Note: A review and critical digest of the literature on sleep of the last 25 years; a summary of the work of the Physiological Laboratory at the University of Chicago; and a presentation of the author's theory of sleep and wakefulness as alternating phases in the cycle of existence.

LUYET, BASILE JOSEPH, AND P. M. GEHENIO

Life and death at low temperatures. Normandy, Mo.: Biodynamica, 1940. 341 p. illus. 25 cm. (A series of monographs on general physiology, edited by B. J. Luyet. No. 1) \$4.50. 1820a

Contents: Part I, The lower limit of vital temperatures: Definitions and preliminary remarks. Infracellulars. Monocellulars. Germ cells, spores and seeds. Isolated cells and tissues. Metaphyta. Metazoa. Part II, The physical states of protoplasm at low temperatures: Fundamental principles of heat conduction. Freezing, the frozen state and melting. Supercooling and the supercooled state. The vitreous state, vitrification, devitrification, and vitromelting. Part III, The mechanism of injury and death by low temperature: Action of cold without ice formation. Action of cold accompanied by ice formation. General bibliography. Indexes.

Note: The problems discussed in this monograph are primarily those of the preservation of life and of the mechanism of death at low temperature. On account of their immediate connection with the questions of the structure of living matter and of the nature of life, these problems are stated mainly in terms of their philosophical significance and none of the practical applications of low temperature research are considered except insofar as they directly involve some phase of the main topic, which is concerned with how organisms are killed or otherwise physically affected by the action of cold. Separate bibliographies follow each chapter and there is a general list of 382 references. The material has been reprinted from *Biodynamica*, No. 33, 1938; No. 48, 1939; and No. 60, 1940.

MACLEOD, JOHN JAMES RICKARD

Macleod's Physiology in modern medicine, edited by Philip Bard, with the collaboration of Henry C. Bazett, George R. Cowgill [and others]. Ninth edition. St. Louis: The C. V. Mosby Company, 1941. 1256 p. illus. (part col.) 25 cm. \$10.00. 1821

Contents (abridged): The neuromuscular and central nervous systems, by Philip Bard, with chapters on Electrical excitation and the relation of stimulus to response, and The nerve impulse, by Howard J. Curtis. The special senses, by J. M. D. Olmsted. The circulation, by H. C. Bazett, with a chapter on Coagulation of the blood, by Harry Eagle. The respiration, by Carl F. Schmidt. Metabolism and nutrition, by Chalmers L. Gemmill, with chapter on Regulation of body temperature, by Philip Bard. Physiology of the alimentary tract, by George R. Cowgill. The endocrine glands, by R. G. Moskins. Distribution and regulation of water in the body, by Magnus I. Gregersen. The kidney, by Magnus I. Gregersen, with chapter on The urinary bladder, by Walter S. Root. References. Index.

Note: This work on the clinical application of physiology, first published in 1918 under the title *Physiology and biochemistry in modern medicine*, is meant to serve as a textbook for students and as a reference book for practitioners of medicine. Each of the sections is written by an author chosen for the task, and the authors of the ninth edition are the same as those of the eighth, except for the addition to the list of Howard J. Curtis and Walter S. Root. In this edition certain parts have been reorganized and many chapters have been completely rewritten, while a few new chapters have been added. The author has also written with R. J. Seymour *Fundamentals of human physiology*, St. Louis: The C. V. Mosby Company, 1936, 424 p., \$2.50, which is a textbook for introductory courses offered to college students who are not specializing in physiology or medicine.

MALISOFF, WILLIAM MARIAS

The span of life. Philadelphia: J. B. Lippincott Company, 1937. 339 p. 21 cm. \$2.50. 1822

Contents: Introduction. Methuselahs all. The portrait of old age. Fixing the life span. The phenomena of life. Aging and its theories. Life prolongation and rejuvenescence. Projects in optimism. Possibilities. Glossary. Index.

Note: A scientific and cautiously optimistic treatment of the entire problem of longevity. The various theories of aging are covered from the primitive, through the pseudo-scientific, to the modern critical and scientific viewpoints. The theories and practices which have been advocated for rejuvenation and prolongation of life are examined and evaluated. For general readers.

PATTERSON, THOMAS LEON

Comparative physiology of the gastric hunger mechanism. New York: New York Academy of Sciences, 1933. 226 p. illus. 23 cm. (New York Academy of Sciences. Annals. Vol. xxxiv, p. 55-272, 277-284) Paper, \$2.25. 1822b

Contents: Introduction. The biological significance of hunger: Hunger in the Protozoa. Hunger in the simpler Metazoa. Hunger in plants. Hunger in the higher animals. The theories of hunger. Methods of experimentation. Comparative physiology of gastric motility in vertebrate and invertebrate animals. Types of Invertebrata studied: Arthropoda. Mollusca. Types of Vertebrata studied: Chordata: Cyclostomes. Pisces. Amphibia. Reptilia. Aves. Mammalia. The gastro-neuro-muscular mechanism: The nature of the gastric response. The influence of stimulation of the sciatic. The influence of stimulation of the vagus. The influence of stimulation of the splanchnic. The oculo-gastric reflex from compression of the eyeball. Man (*Homo sapiens*). Discussion and conclusion. Bibliography. Index.

Note: A comprehensive analysis of the hunger problem by means of a series of physiological experiments upon such diverse vertebrates and invertebrates as the crab, clam, dogfish, frog, turtle, pigeon, monkey, and man. Its purpose is to study comparatively the hunger mechanism throughout the animal kingdom in order to be able better to interpret the mechanism of the human stomach.

PETERS, JOHN PUNNETT

Body water; the exchange of fluids in man. Springfield, Ill.: Charles C. Thomas, 1935. 405 p. illus. 23 cm. \$4.00. 1823

Contents: Chemical forces which control exchanges of fluid and solutes. The nature and movements of interstitial fluid and lymph. Exchanges between blood and interstitial fluids. Serous fluids and transudates. Exchanges between blood cells and serum. Exchanges between tissue cells and interstitial fluids. Water of oxidation and the losses of water and solutes through skin and respiratory passages. Alimentary exchanges. The general nature of renal activity. Renal excretion of filtrable organic solutes. Renal excretion of water and inorganic salts. Nervous and hormonal control of urine excretion. Bibliography and author index (875 items). Subject index.

Note: The first half of this book is concerned with the exchange of water between the blood, the tissues, and the interstitial fluid. The second half deals chiefly with renal activity. The author has devoted many years to experimental work on the distribution of solutes and water in the human body. This volume attempts to assemble his ideas in the form of a coherent story of an extremely difficult subject. The uncertainties and apparent contradictions that characterize our present state of knowledge of lymph formation and urine excretion are frankly recognized and the author makes an attempt to throw light upon difficult problems instead of merely evading them. The book is more than a review of the movement of fluid and electrolytes and the nature of restraints the vital membranes of the body impose upon them. It is a judicious and scholarly attempt to construct a background for a more rational analysis of the functional pathology of various clinical and pathologic disturbances. Some 875 critically selected references are correlated and cited.

SANDERS, BARKEV SAHAK

Environment and growth. Baltimore: Warwick and York, Inc., 1934. 375 p. 23 cm. \$4.00, plus postage. 1824

Contents: Part I, Introduction: The problem. Heredity and environment. Part II, Differential growth in socio-economic groups: Differential growth. Differential growth of the fetus. Differential growth in infancy. Differential growth of preschool children. Differential size of school children and adults. Part III, Conclusions. Bibliography. Index.

Note: A Ph.D. thesis which presents a study of the evidence bearing on the relative contributions of heredity and environment to physical growth and development, and a rigid determination of the tenability of the deductions from correlation studies. The study attempts to show that the deductions of the Pearson school of biometricians, who deny the importance of environment on ontogenic traits, are untenable not merely in respect to growth but in all other spheres of the social sciences where extreme hereditarianism is made a basis of evaluation. The author emphasizes the importance of both heredity and environment and does not favor one to the exclusion of the other. The bibliography, which is limited to citations appearing in the text, contains about 1,250 references to the world literature of the subject.

SMITH, HOMER WILLIAM

Lectures on the kidney. Lawrence, Kan.: University Extension Division, University of Kansas, 1943. 134 p. illus. 26 cm. \$1.00. 1824a

Contents: The evolution of the kidney. Newer methods of study of renal function in man. The renal blood flow in normal subjects. Renal physiology between two wars. Application of saturation methods to the study of glomerular and tubular function in the human kidney. Bibliography.

Note: This book combines the Porter Lectures, Series ix, presented by the author at the University of Kansas School of Medicine in 1939 with the Welch Lectures, presented at the Mount Sinai Hospital in the city of New York in 1943. Although these five lectures do not cover all aspects of renal physiology, they nevertheless cover most of the advances concerned with clearance techniques. The book is of interest to the medical profession, and is especially valuable as a supplementary text for physiology classes in medical schools. A bibliography is appended to each lecture.

TRUSLOW, WALTER

Body poise. Baltimore: The Williams & Wilkins Company, 1943. 312 p. illus. 23 cm. \$4.50. 1825

Contents: Introduction and general principles. Part I, The human frame, anatomy and kinesiology: Fundamental standing position. Other fundamental gymnastic positions. Part II, Some pathological deviations from the normal involving posture mechanism and treatment: Weak feet, flat feet, metatarsalgia. Faulty posture, functional antero-posterior and functional lateral deviations of the spine. Rotary lateral curvature of the spine, scoliosis. Part III, Body poise in games, sports and athletics: Sports and contests having little or no tendencies to poor posture; mild tendency to faulty body poise; greater tendency to horizontal disproportion of muscular and structural development and lateral asymmetry. Glossary of anatomical terms. Index.

Note: A book for the student of physical education or the physical director in schools and colleges, outlining the basic principles of correct body poise and its relation to general health and physical fitness. The mechanism of good posture, together with a sketch of human skeletal and muscular structure, is discussed and illustrated, followed by a description of pathological conditions with the exercises recommended for each case. The final section deals with the physical technique or kinesiology of sports and suggests corrective exercises where overtraining of specialized muscles has proved detrimental to the participants. The glossary is helpful for the non-specialist reader.

VAN LIERE, EDWARD JERALD

Anoxia, its effect on the body. Chicago: The University of Chicago Press, 1942. 269 p. illus. 23 cm. \$3.00. 1826

Contents: Historical. Definition of terms. Classification of anoxia. Expression of the degree of anoxia. Experimental methods of producing anoxia. General considerations. Effect of anoxia on the blood. Chemical changes in the blood during anoxia. Effect of anoxia on the heart and circulation, on blood pressure, on the lymph, on respiration. Mountain sickness and altitude sickness. Acclimatization. Effect of anoxia on the alimentary tract. Anoxia and the secretion of urine. Effect of anoxia on the endocrine glands. Metabolism and anoxia. Anoxia and heat regulation. Anoxia and nutrition. Effect of anoxia on water distribution in the body. Effect of anoxia on the nervous system. Index.

Note: Lack of oxygen, a subject of increasing importance due to aviation, is here considered systematically in connection with all the physiologic processes of the body. Anoxemia is also recognized more and more as a concomitant symptom of many diseases.

Textbooks

AMBERSON, WILLIAM RUTHRAUFF, AND DITTRICH C. SMITH

Outline of physiology. Illustrations by Norris Jones. Baltimore: The Williams & Wilkins Company, 1939. 412 p. illus. 26 cm. \$4.00. 1827

Contents: The living cell. Basic phenomena of life. Nervous integration of physiological function. Circulation, respiration and metabolism. Digestion and excretion. The endocrine glands and reproduction. Index.

Note: Primarily a mammalian physiology, this book is designed as a beginning text for the general, or arts college, student. It lays a groundwork of basic biochemical and biophysical conceptions as preparation for the later more strictly physiological discussions. Historical material is introduced to give desirable perspective and to increase student interest. The authors treat modern physical and chemical concepts briefly and simply.

BAITSELL, GEORGE ALFRED

Human biology. New York: McGraw-Hill Book Company, Inc., 1940. 621 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences; A. F. Shull, consulting editor) \$3.75. 1828

Contents: Structure and function in the world of life. The organization of the human body. The biology of nutrition. The biology of respiration. The biology of secretion. The biology of excretion. The biology of the vascular system. Biology of the muscular system. Biology of the skeletal system. Biology of the nervous system. The biology of growth and reproduction. The biology of inheritance. Human heredity. The web of life. Biology of disease.

Note: A textbook in which structural and functional features of man, rather than those of lower animals, are used as the basis of discussion. Thus the text makes use of the human organism as the basic type for a detailed consideration of structure and function in the vertebrate mammalian organism and also for the presentation of important biological principles applicable throughout the living world. A special feature of the book is reproductions of original drawings of human structures by Armin Hemberger of the Yale Medical School.

BARNES, THOMAS CUNLIFFE

Textbook of general physiology. Philadelphia: The Blakiston Co., 1937. 554 p. illus. 23 cm. \$4.50. 1829

Contents: Diffusion, osmosis, and electrolytes. Surface action in liquids. Colloids. Water. Physical and chemical models of living cells. The nature of living matter. Permeability. Amoeboid and ciliary movement. Muscular contraction. Animal behavior. Nervous action. Bioelectrical potential. Temperature characteristics. Biological oxidations and respiratory pigments. General physiology of the heart. Chemical regulation by hormones. Appendix. Index.

Note: A college textbook on the general physiology of cold-blooded animals, designed for seniors who have received preliminary training in physics, chemistry, and zoology. The subject of water metabolism and physical models of living systems are given special attention. A departure from the more conventional pedagogical method is found in the considerable number of brief allusions to recent research. A bibliography of 1,000 references to the world literature on physiology and related subjects is included. The author has also prepared a *Laboratory manual of general physiology*, Philadelphia: The Blakiston Co., 1937, 116 p., paper, \$1.00, containing directions for 177 experiments.

BEST, CHARLES HERBERT, AND NORMAN BURKE TAYLOR

The living body; a text in human physiology. Revised edition. New York: Henry Holt and Company, 1944. 571 p. illus. (part col.) 22 cm. \$3.90. 1830

Contents: Protoplasm. The cell. The tissues. The blood, lymph, and tissue fluids. The spleen and the reticulo-endothelial systems. The circulation. Respiration. The physiology of the kidney. Mic-turition. Digestion. Metabolism and nutrition. The endocrine glands. The physiology of nerve and muscle. The nervous systems. The special senses. The physiology of reproduction. Index.

Note: A comprehensive book designed for use in first courses in physiology for liberal arts, pre-medical, and nursing students. The discussions assume that the student will have an elementary knowledge of chemistry and physics.

BEST, CHARLES HERBERT, AND NORMAN BURKE TAYLOR

The physiological basis of medical practice; a University of Toronto text in applied physiology. Third edition. Baltimore: The Williams & Wilkins Company, 1943. 1942 p. illus. (part col.) 23 cm. \$10.00. 1831

Contents (abridged): Section I, Blood and lymph. II, Circulation of blood. III, Respiration. IV, Excretion of urine. V, Digestion. VI, Metabolism and nutrition. VII, Ductless glands or endocrines. VIII, Nervous system. IX, Special senses. References. Index.

Note: Written primarily for use as a textbook for medical students and practitioners. The aim of the authors is to link the laboratory with the clinic in order to promote the continuity of physiological teaching throughout the pre-clinical and clinical years of the undergraduate course. They point out that the study of morbid physiology has in great part taken the place previously occupied by morbid anatomy and pre-clinical research, and that this trend should be reflected in the teaching of medical students. In each section a brief description of morphology, sometimes including the nerve and blood supply, precedes the functional consideration. In the present edition alterations, additions, and deletions have been made. Some chapters have been revised, several sections rewritten. The section on "intracellular respiration, respiratory enzymes and energy liberation," contributed by Professor A. M. Wynne, has been entirely rewritten.

CARLSON, ANTON JULIUS, AND VICTOR JOHNSON

The machinery of the body. Revised edition. Chicago: The University of Chicago Press, 1941. 620 p. illus. 23 cm. \$4.00. 1832

Contents: The science of physiology. The unit of structure and function—the cell. Blood and the internal environment. The work of the heart. Blood flow and blood pressure. Mechanisms and functions of breathing. The work of the alimentary canal. The history of foods in the body. The action of muscle and nerve. Mechanisms of correlation. The spinal cord and brain. Sensory mechanisms. Chemical correlation—the glands of internal secretion. Body defenses against disease. Reproduction and early development.

Note: A University of Chicago "new plan" text for elementary or intermediate physiology and survey courses in human biology. The organization of the book differentiates between elementary and advanced material. In this edition a new chapter discusses reproduction and early development, and 17 new illustrations have been added.

CRANDALL, LATHAN AUGUSTUS

An introduction to human physiology. Third edition, revised. Philadelphia: W. B. Saunders Company, 1942. 388 p. illus. 20 cm. \$2.25. 1833

Contents (abridged): The physical and chemical background of physiology. The blood, heart, nerves. Hemodynamics. Respiration. Digestion. Bile and pancreatic juice. Small intestine and colon. Liver and spleen. Urine secretion and micturition. Skin. Metabolism. Nutrition. Glands of internal secretion. Physiology of muscle and nerve. Reflex action. Spinal cord. Brain. Autonomic nervous system. Senses and sense organs. Reproduction. Selected references, glossary and appendix.

Note: This text is designed for college elementary students and for schools of nursing where the subjects of anatomy and physiology are taught separately. The author gives a survey of the field of physiology, stressing how the body functions and how this knowledge is applied. Physiologic processes are demonstrated by examples from everyday life and illustrated by diagrammatic pictures which portray the workings of complex body systems. In revamping the text for the third edition, a new chapter was added on nutrition and vitamins; new material was included on metabolism and on the problems of respiration, especially in relation to high altitude flying.

GERARD, RALPH WALDO

The body functions; physiology. New York: John Wiley & Sons, Inc., 1941. 289 p. illus. 22 cm. (The sciences; a survey course for colleges, edited by Gerald Wendt) \$2.25. 1834

Contents: Part I, Muscle and other effectors. Nerves and the nerve impulse. Stimulus and sensation. Internal integration. Part II, Circulation. Gas exchange. Foods and wastes. Protection and production. Behavior and mind. Appendix. Bibliography. Glossary. Index.

Note: This work is a concise survey of physiology as the basis of the medical sciences, in line with the present-day emphasis upon function rather than anatomy. Respiration, nutrition, and reproduction are analyzed into their simple component processes, and are established as the basis of health. The informal, conversational style makes the book suitable for the layman, as well as for students beginning a study of the subject.

HEILBRUNN, LEWIS VICTOR

An outline of general physiology. Second edition, revised. Philadelphia: W. B. Saunders Company, 1943. 748 p. illus. 24 cm. \$6.00. 1835

Contents (abridged): Nature of subject. Morphology of living substance. Chemical constituents of living substance. Chemistry of proteins. Carbohydrates and lipids. Identification of chemical compounds in protoplasm; physical properties; colloid chemistry. Protoplasmic surface. Osmotic relations of living cells. Permeability of cell membrane—methods; results. Food requirements of organisms. Vitamins. Intake of food. Digestion; enzymes. Absorption and assimilation. Growth. Respiration. Protoplasmic oxidation. Intermediary metabolism, secretion and excretion. Energy exchange, heat production. Types of movement. Physical and chemical aspects of muscular contraction. Production of electricity. Bioluminescence. Environmental conditions. Acclimatization. Irritability concept. Theories of stimulation and anesthesia. Conduction. Tropisms. Receptors. Age and death. Reproduction—cell division. Author index. Subject index.

Note: This book is essentially for advanced students of the subject and is so designed as to provide a scientific outline—the basic concepts, so to speak—of modern physiological thought. It is well documented and, while avoiding over-simplification, is aimed at presenting facts as now known in order and fashion found resultful by the author in his own classes. It is assumed that users of this text will have had some background in physical chemistry. For the second edition, the entire book was revised and revamped. New sections have been added on the electron microscope, localization of enzymes in cells, colloid chemistry of the nucleus, tracer elements, and carbon dioxide synthesis. The chapters on enzymes, vitamins and protoplasmic oxidation have been greatly expanded.

HOWELL, WILLIAM HENRY

A textbook of physiology. Fourteenth edition, thoroughly revised. Philadelphia: W. B. Saunders Company, 1940. 1117 p. illus. (part col.) 24 cm. \$7.50. 1836

Contents (abridged): Physiology of muscle and nerve. Physiology of the central nervous system. The special senses. Blood and lymph. Physiology of the organs of circulation of blood and lymph. Physiology of respiration. Physiology of digestion and secretion. Nutrition and heat production and regulation. Physiology of reproduction. Appendix: Proteins and their classification. Index.

Note: Howell's book is of interest to all concerned with study and research in physiology. Its principal purpose is to serve as a text for medical students. The author has endeavored to make the student realize that physiology is a growing subject, continually widening its knowledge and readjusting its theories. To emphasize this fact, short historical résumés have been introduced from time to time. References have been included as footnotes. For the fourteenth edition, new and revised subjects include, among others, lipids, the motor area, sympathetic nervous system, vitamins, secretion of urine, origin and regeneration of hemoglobin, evolution of clotting, prothrombin, chemical composition of enzymes, riboflavin, carbohydrates and fats, secretion of ductless glands, proteins of the blood plasma, and influence of tissue extract upon coagulation.

LUCAS, MIRIAM (SCOTT)

Elements of human physiology. Illustrated with 158 engravings, 12 in color. Philadelphia:

Lea & Febiger, 1940. 400 p. illus. (part col.) 24 cm. \$4.50. 1837

Contents: Part I, Movement and support. Part II, Integration of the body. Part III, Metabolism and water balance. Part IV, Reproduction and endocrine function. Index.

Note: This textbook for medical and pre-medical students is written from the point of view of the student and teacher of physiology rather than from that of the physiology specialist. Its scope is human physiology but numerous references are made to animal experimentation. Cells and tissues are considered in relation to their functional importance rather than as separate entities. The author has included some controversial matter designed to arouse in the student's mind an interest in scientific investigation.

MITCHELL, PHILIP HENRY

A textbook of general physiology for colleges. Third edition. New York: McGraw-Hill Book Company, Inc., 1938. 853 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences; A. F. Shull, consulting editor) \$6.00. 1838

Contents: Introduction. Excitation and inhibition. Physiology of contraction. The functional units of nervous systems: neurones and protoneurones. Reflexes and tropisms. The correlating action of the nervous system. Receptors. The organic constituents of living matter. The inorganic constituents of living matter. The biological significance of water and other electrolytes. The physiological significance of hydrogen and hydroxyl ions. Surface action. The colloidal state. The physico-chemical structure of living matter. Diffusion and osmosis, osmotic pressure. The permeability of membranes and living cells. Synthetic processes in plants and animals. Catalysis and enzymes. Digestion. The chemistry of the blood and lymph. The circulation of the blood. Respiration. Physiological oxidations. Animal heat regulation. Excretion and protein metabolism. Dietetics. Vitamins. Chemical regulation by the internal secretions.

Note: In this book physiological processes are emphasized rather than the physiology of organs. The relationships, of physical and chemical phenomena, such as the electronic structure of matter, the theory of chemical reactions, and the behavior of colloids, to the problems of living matter are discussed at some length. The author has written jointly with I. R. Taylor the *Laboratory manual of general physiology*, New York: McGraw-Hill Book Company, 1938, \$1.50, for use with this book and generally in laboratory courses in physiology.

ROGERS, CHARLES GARDNER

Textbook of comparative physiology. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 715 p. illus. (part col.) 23 cm. (McGraw-Hill publications in the zoological sciences; A. F. Shull, consulting editor) \$5.50. 1838a

Contents: Introduction. Solutions. Diffusion and osmosis. Protoplasm. The cell. The general phenomena of life. The transport system. Circulation of body fluids. Respiration. Enzymes and digestion. Secretion. The nutrition of animals. Absorption. Utilization of food materials in the body. Physiology of movement. Excretion. The physiology of coordination, adjustment, and regulation. The physiology of reproduction.

Note: A comparative survey of the principal physiological functions of animals of all groups, especially of the invertebrates. In the second edition the text was rearranged and rewritten to facilitate its use as a textbook as well as a handbook for technicians. The same publisher offers the author's *Laboratory outlines in comparative physiology*, second edition, 1938, 180 p., \$1.50, for use with this text.

WIGGERS, CARL JOHN

Physiology in health and disease. Fourth edition, thoroughly revised. Illustrated with 247 engravings. Philadelphia: Lea and Febiger, 1944. 1174 p. illus. 24 cm. \$10.00. 1838b

Contents (abridged): Muscular contraction and associated phenomena. Physiology of peripheral and central nervous systems. The blood. Respiration. Heart and circulation. Physiology of alimentary tract. Metabolism and nutrition. Excretion and body

fluids. Endocrine organs. Sexual functions and their hormonal control. Physiology of pregnancy, labor and lactation. Index.

Note: An exhaustive treatise designed for use of medical students, clinicians, practitioners, and investigators. Its special use is to correlate physiology and clinical medicine. The author has made a special effort to include data on both sides of debatable questions. References are placed in footnotes on each page, bibliographies at the ends of chapters. The fourth edition represents an extensive revision, with much new illustrative and textual material.

ZOETHOUT, WILLIAM DOUWES, AND W. W. TUTTLE

Textbook of physiology. Eighth edition. With 308 text illustrations and three color plates. St. Louis: The C. V. Mosby Company, 1943. 728 p. illus. (part col.) 22 cm. \$4.75. 1838c

Contents: Protoplasm and life processes. Enzymes or ferments. The tissues. Translocation of materials. Control of tissue activity. Contractility: muscle physiology. Conductivity: nerve physiology. Blood: the middleman. Mechanical factors of blood circulation. The heart. Vasomotor control. Capillaries and tissue fluid formation. Gas exchange: respiration. Foods. Digestion. Absorption. Movements of the alimentary canal. Protein metabolism. Carbohydrate and fat metabolism. Water and mineral metabolism. Energy metabolism. Food requirements of the body. Reflex actions: the spinal cord. The brain. The autonomic nervous system. Reproduction. Glossary.

Note: A comprehensive, well organized textbook. In this edition there is revision of the chapter on protoplasm, rearrangement of the headings in the chapters covering the circulatory system, and elaboration of the material on renal hypertension, hemorrhage, traumatic and gravitational shock, blood banks, and hormonal control of the reproductive system. Much of the advanced chemistry and anatomy may be omitted without destroying continuity. The same publisher offers for use with this text *An introduction to experimental human physiology*, by W. W. Tuttle and G. C. Knowlton, 1939, 138 p., \$1.50.

Tissue Culture

BUCHSBAUM, RALPH MORRIS, AND CLAYTON G. LOOSLI

Methods of tissue culture in vitro, and Outlines of histological methods, with special reference to tissue culture by Clayton G. Loosli. Chicago, Ill.: The University of Chicago Press, 1936. 81 p. illus. 23 cm. \$1.00. 1839

Contents (abridged): Part I, Methods of tissue culture in vitro: Introduction. General principles. Laboratory rooms. Washing glassware and instruments. Asepsis and sterilization. Media. Preparation of cultures. Explanation. Subculturing. Washing cultures. Pure strains of cells. Observation and study. Appendix. Bibliography. Part II, Outlines of histological technique: Preparation of reagents. Fixing, dehydrating, and embedding control tissues. Decalcification of bone. Celloidin block mounting. Microtome and knife. Celloidin serial sections. Staining. Bibliography.

Note: A brief handbook in outline form for laboratory technicians and investigators, presenting simplified methods for tissue culture and histological technique. The bibliography of part I contains 74 entries, that of part II, six.

PARKER, RAYMOND CRANDALL

Methods of tissue culture; with a foreword by Alexis Carrel. With 109 illustrations. New York: P. B. Hoeber, Inc., 1938. 292 p. illus. 24 cm. \$5.00. 1840

Contents: Foreword by Alexis Carrel. Introduction. The laboratory. Special equipment. Cleansing and sterilizing procedures. Salt solutions, pH determinations and osmotic pressure. Preparation of plasma and serum. Preparation of tissue extracts. Preparation of synthetic media. Hanging-drop cultures. Carrel flask cultures. Special flask procedures for the study of blood. Special flask procedures for adult tissue in fluid media. Growth measurements and their interpretation. Histological procedures. Photo-

micrography and microcinematography. Some applications of tissue culture to experimental biology and medicine. Selected references.

Note: This book for biologists, pathologists, and medical and laboratory workers describes the basic procedures used in the Rockefeller Institute laboratories and elsewhere. Examples are given of the manner in which the techniques have been applied in experimental morphology and in the study of tumors, viruses, hypersensitivity, and immunity.

Blood

SCHIFF, FRITZ, AND WILLIAM C. BOYD

Blood grouping technic; a manual for clinicians, serologists, anthropologists, and students of legal and military medicine, with a foreword by Karl Landsteiner. New York: Interscience Publishers, Inc., 1942. 248 p. illus. 23 cm. \$5.00. 1842

Contents (abridged): Theoretical foundations. General technic of blood group investigation. Special applications of blood grouping technics.

Note: Gives clear and concise directions for carrying out blood grouping tests, not only as a preliminary to transfusion, but also in connection with cases of disputed parentage and other forensic applications, and in anthropological studies. Indirect as well as direct methods are considered. To aid the beginner in understanding the principles underlying the procedures, the theoretical basis of blood grouping is presented. In connection with transfusion a number of points, such as the use of preserved blood, blood substitutes and transfusion accidents, are taken up. The donor problem is discussed from several angles. This work is based on F. Schiff's *Die Technik der Blutgruppenuntersuchung*, 3. Aufl., Berlin, 1932. Bibliographies are included.

WIENER, ALEXANDER SOLOMON

Blood groups and transfusion. Third edition. Springfield, Ill.: Charles C. Thomas, 1943. 438 p. illus. 26 cm. \$7.50. 1843

Contents: Introduction. The four blood groups. Sources of error in blood grouping. History of blood transfusion. Selection of donors, survival of transfused blood cells. Indications for and results of transfusion. Technic of transfusion of fresh blood. Reactions and complications following blood transfusion. Transfusion of stored blood, plasma and serum. Some fundamental principles of genetics and biometrics. Heredity of the blood groups. The subgroups of group A and group AB. The agglutinogens M and N of Landsteiner and Levine. Heredity of the agglutinogens M and N. Factors Rh and Anti-Rh of human blood. Further individual differences in human blood. Group-specific substances in organs and body fluids; studies on their chemical nature. Anthropological investigations on the blood groups. Evolution of the human blood groups; individual differences in animal blood. Blood groups and disease; tissue transplantation. Rh factor and erythroblastosis fetalis. Medicolegal application of blood tests in disputed parentage. Individual identification of stains in forensic cases. General bibliography. Appendix. Subject index.

Note: This third edition summarizes present knowledge of the theory and technique of blood grouping. It points out the applications in clinical, legal, and veterinary medicine, and also in anthropology. The essential facts concerning the transfusion of whole blood, plasma, and serum are assembled and integrated. Two new chapters: Chapter ix deals with the transfusion of stored blood and blood substitutes; Chapter xv covers the recently discovered Rh factor and its role in erythroblastosis fetalis. The remaining 20 chapters were either completely rewritten or extensively revised. This edition was reset from new type. There are 69 figures and 106 tables, and a good index.

Vascular System

ABRAMSON, DAVID IRVIN

Vascular responses in the extremities of man in health and disease. Chicago: The University of Chicago Press, 1944. 412 p. illus. 23 cm. \$5.00. 1844

Contents (abridged): General considerations of the circulation in the extremities. Methods utilized in the study of the vessels and the rate of peripheral blood flow. Physiologic responses of blood vessels in different portions of the extremities. Responses of peripheral blood vessels to various pharmacologic agents. Blood flow in abnormal states and in systemic diseases. Blood flow in peripheral vascular disease. Evaluation of methods used in the treatment of peripheral vascular disease.

Note: In this book the author surveys the advances made by himself and others in the fields of peripheral vascular physiology and disease. Emphasis is placed on subjects which are of current interest in war medicine. Data are based predominantly on human experimentation. The book was published under the auspices of the University of Chicago Committee on Publications in Biology and Medicine.

NEDZEL, ALEXANDER JOHN

Vascular spasm, experimental studies (with 161 figures). Urbana, Ill.: University of Illinois Press, 1943. 151 p. illus. 27 cm. (Illinois medical and dental monographs. Vol. III, nos. 3-4) Paper, \$2.25; cloth, \$2.75. 1845

Contents: Introduction. Vascular spasm. Splanchnoperipheral balance (experiments): Gastrointestinal tract. Liver. Respiratory tract. Kidneys. Drug action. Discussion. Pitressin: First series of experiments. Second series of experiments. Discussion. Endocarditis (experiments): Response of valvular endothelium. Localization of particulate matter and microorganisms. Spontaneous bacterial endocarditis. Non-bacterial endocarditis. Sub-endothelial changes. Injections of pitressin and particulate matter. Death rate from pitressin. Discussion. Gastric ulcer (experiments): Direct observation. Histologic findings. Seasons and gastric ulcer. Discussion. Liver and kidneys: Experiments. Discussion. Multiple sclerosis: Etiology of multiple sclerosis. Transient vascular spasms in the central nervous system. Experiments. Discussion. Localization of bacteria in the central nervous system. Summary. Bibliography.

Note: The author shows experimentally that a purely functional disturbance, in this case induced vascular spasm in dogs, can in itself precipitate diseases which are very different clinically in their localization and manifestations. Valvular disease, gastric and duodenal ulcers, lesions in the central nervous system, and liver and kidney involvement were shown to have the same etiological basis, namely, vascular, spasm under identical experimental conditions.

Lymphatic System

DRINKER, CECIL KENT

Lane medical lectures: The lymphatic system, its part in regulating composition and volume of tissue fluid. Stanford University, Calif.: Stanford University Press, 1942. 101 p. illus. 26 cm. (Stanford University publications. University series. Medical sciences. Vol. IV, no. 2) \$2.25. 1846

Contents: Physiological principles displayed in the evolution of the mammalian circulation. Establishment and characteristics of the capillary circulation. Appearance and elaboration of lymphatic vessels. Blood, tissue fluid, and lymph as illustrated by experiments upon the heart and lungs. Relations of the lymphatic system to practical problems in surgery and medicine. Bibliography.

Note: The author gives the following description of the contents of his book: "I have tried my hand at developing the reasons why mammals have lymphatics; why the lymphatic system has been slowly turned from a casually organized accessory of the blood circulation into a physiological entity, complementing this first system and joining with it in the task of keeping the composition and volume of the mammalian tissue fluid at a steady normal level. First, there is a brief account of the gradual evolution of the closed circulatory system of the blood as against the primitive types of arrangement, which permit free and direct entrance of external fluids into the body. Next, it was interesting to proceed historically and to show how the discovery of blood and lymph capillaries in vertebrates led slowly to a realization of the interdependence of the blood and lymph circulations, so vital for mammalian activity. Finally, I have thought it possible to conclude with a description of the manner in which the blood

and lymph circulations take part in the healing of wounds and in the development of lung fibrosis following inhalation of dusts, choosing these common surgical and medical experiences to make my case." The volume is intended for students and practitioners of medicine and for physiologists.

DRINKER, CECIL KENT

612.72
D33-1
Lymphatics, lymph, and lymphoid tissue; their physiological and clinical significance. Cambridge: Harvard University Press, 1941. 406 p. illus. 24 cm. (Harvard University monographs in medicine and public health) \$4.00. 1847

Contents: Anatomical and physiological organization of the lymphatic apparatus. Permeability of blood capillaries and its relation to lymph formation. Permeability of lymphatics. Lymph flow and lymph pressure. Chemical composition and physical characteristics of lymph. Biological significance of lymphoid tissue. Cell content of lymph. The lymphocyte. Practical considerations. Bibliography and indexes.

Note: The primary purpose of this book is to picture the physiological and, with it, the clinical significance of the lymphatic apparatus in mammals. The monograph concludes with a chapter devoted to clinical problems involving the lymphatic system.

Nutrition and Food

AMERICAN MEDICAL ASSOCIATION. COUNCIL ON FOODS AND NUTRITION

612.39
Am 33-1
Handbook of nutrition; a symposium prepared under the auspices of the Council on Foods and Nutrition of the American Medical Association. Chicago: American Medical Association, 1943. 586 p. illus. 21 cm. \$2.50. 1848

Contents: Introduction, by James S. McLester. Proteins in nutrition, by Howard B. Lewis. Role of fat in the diet, by W. R. Bloor. Calories in medical practice, by Eugene F. Du Bois and William H. Chambers. Water and salt requirements in health and disease, by John H. Talbott. Principal mineral elements in nutrition, by Icie G. Macy. Iron in nutrition, by Clark W. Heath. Iodine in nutrition, by George M. Curtis and Mildred B. Fertman. The trace elements in nutrition, by Maurice E. Shils and E. V. McCollum. The fat-soluble vitamins, by Hugh R. Butt. The water-soluble vitamins, by C. A. Elvehjem. Foods of plant origin, by Leonard A. Maynard. Foods of animal origin, by H. C. Sherman. Unusual foods of high nutritive value, by Russell M. Wilder and Thomas E. Keys. The preservation of the nutritive value of foods in processing, by Edward F. Kohman. Improving the quality of cheap staple foods, by George R. Kowgill. Recommended dietary allowances. The feeding of healthy infants and children, by Philip C. Jeans. Feeding the aged, by Edward L. Tuohy. Nutritive requirements in pregnancy and lactation, by J. Harry Ebbs. Adequacy of American diets, by Hazel K. Stiebeling. Medical evaluation of nutritional status, by H. D. Kruse. Nutrition in preventive medicine, by W. H. Sebrell. Conditioned malnutrition, by Norman Jolliffe. Principles of diet in the treatment of disease, by Tom D. Spies. Index.

Note: The most fertile field in the world of medical research today is nutrition. The object of this series of special articles is to weigh critically the values obtained in this field, to correlate them, examine them in respect to their relation to medical practice and human welfare, and then in the light of the information thus gained, to revise present-day knowledge. The handbook is intended for physicians and students of medicine, and all persons interested in nutrition from various standpoints.

CHATFIELD, CHARLOTTE, AND GEORGIAN ADAMS

636.8
Am 32
Proximate composition of American food materials. Washington, D.C.: Government Printing Office, 1940. 91 p. illus. 23 cm. (United States. Department of Agriculture. Circular no. 549) \$0.15. 1849

Contents: Introduction. Sources of data. Derivation of data. Explanation of table and meaning of terms. Notes on certain classes of foods and on use of data. Proximate composition of American food materials. Literature cited.

Note: The table on food values which covers 73 pages of this circular is intended to serve as a satisfactory working basis for dietary estimates. Information given about the foods listed in this table include nature of sample and refuse, percentage of water, protein, fat, ash, carbohydrates (total, fiber, sugars, starch), acid, and fuel value expressed in calories per 100 grams and calories per pound. Vitamin content is not included. The introductory pages tell how the table was prepared.

COMBINED FOOD BOARD (UNITED STATES, UNITED KINGDOM, AND CANADA)

Food consumption levels in the United States, Canada, and the United Kingdom. (Report of a special joint committee set up by the Combined Food Board.) Issued by the United States Department of Agriculture, War Food Administration. Washington, D.C.: Government Printing Office, 1944. 121 p. illus. 23 cm. \$0.20. 1850

Contents: Introduction. Summary of report. Conclusions. Need for continuing work. Part I, General problems and methods in an international food consumption level inquiry: Methods of estimating civilian food supplies. Methods of estimating nutrient supplies and requirements. General dietary needs. Food economy in relation to supplies and requirements. Part II, Food consumption levels in the United States, Canada, and the United Kingdom: Comparison of nutrient supplies and their relation to requirements. Commodity supplies in relation to dietary needs. Trends of supplies. Appendices: Statistical methods. Supplies moving into civilian consumption. Estimated nutrient requirements. Notes on nutrient conversion factors. Nutrients available for civilian consumption.

Note: This report deals mainly with the levels of food supplies moving into civilian consumption in the United States, Canada, and the United Kingdom in the year 1943 and in the pre-war period (defined for the United Kingdom as 1934 to 1938 and for the United States and Canada as 1935 to 1939).

CUMMINGS, RICHARD OSBORN

The American and his food; a history of food habits in the United States. Second revised edition. Chicago: The University of Chicago Press, 1941. 291 p. illus. 21 cm. \$2.50. 1850a

Contents: Introduction. Food on the farm (1789-1840). Menus in the city (1789-1840). Prejudices and reformers (1830-40). Health by rail (1841-80). "And roast beef" (1840-80). The fight against germs (1881-1916). An indefinable loss (1881-1916). The concept of "scientific" eating (1881-1916). Waging a war (1917-29). Unequal degrees of protection (1917-29). Depression and nutrition (1929-39). Education and food costs (1929-39). Federal feeding programs (1935-40). Standards for defense (1940-41). Conclusion.

Note: A collection of material and references on American food and its relation to public health. The historic treatment of colonial menus and domestic economy is accompanied by illustrations of the period. In this revised edition two new chapters are provided, "Standards for defense (1940-41)" and "Conclusion." The former gives a brief account of activities of the National Research Council and agencies of the Federal government to meet increased nutrition needs under the defense program.

DRUMMOND, JACK CECIL

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Lane medical lectures: Biochemical studies of nutritional problems. Stanford University, Calif.: Stanford University Press, 1934. 106 p. illus. 25 cm. (Stanford University publications. University series. Medical sciences. Vol. III, no. 2) \$1.50. 1851

Contents: The character of modern problems of nutrition. The "protein factor" in nutrition. The nutritional value of fats. The fat-soluble vitamins in nutrition. The water-soluble vitamins in nutrition.

Note: Five lectures delivered in 1933 on aspects of nutrition and their relations to disease.

FISHBEIN, MORRIS

The national nutrition. Indianapolis: The Bobbs-Merrill Company, 1942. 192 p. illus. 20 cm. \$1.75. 1851a

Contents: Preface—the campaign for improved nutrition. What is national nutrition? Hollow hunger and hidden hunger. Essential food materials. Common sense and the family food. Review of vitamin facts and follies. Common sense and your weight. Meat eating vs. vegetarianism. The hygiene of food. Food and the war.

Note: A popular book written to impress upon the public the importance of good nutrition in wartime. Dr. Fishbein has worked closely with the National Nutrition Conference for Defense and his book, in addition to exploding many of the prevalent health fads and food follies, plans a sound program for healthful nutrition.

GLASSTONE, SAMUEL, AND VIOLETTE GLASS-TONE

The food you eat, a practical guide to home nutrition. Norman: University of Oklahoma Press, 1943. 277 p. illus. 22 cm. \$2.25. 1852

Contents: Health, hunger, and nutrition. The human machine. Digestion. Mineral elements and water. Vitamins. Food products. Planning the menu. Practical nutrition in outline: Daily food essentials. Typical balanced menu. Budget for a moderate-cost diet. Sources of vitamins, minerals, proteins, fats. Illustrated meat charts for cuts and economy. Index.

Note: This book is intended for laymen who have an intelligent interest in food and nutrition. Along with other essential information, it offers sound advice on substitute foods and on obtaining adequate nutrition at low cost. The authors are prominent scientists.

GRAUBARD, MARK AARON

Man's food, its rhyme or reason. New York: The Macmillan Company, 1943. 213 p. 22 cm. \$2.50. 1852a

Contents (abridged): Introduction. Why a nutrition movement? How food habits concern us. Food and the health of populations. Remember the food groups. Citrus fruit, cabbage, tomatoes and other vegetables; bread, milk, eggs, meat, fish, vegetables, legumes, nuts, fats and oil, sugar. Condiments and spices—an episode in human folly. Stimulants and intoxicants—the futility of harsh laws. Table manners. Food and the nature of man. Food and morale. Postscript on freedom from want in food. Index.

Note: This volume, sponsored by the American Association for the Advancement of Science, deals with man's attitude toward food throughout history and the change from superstition to science in man's dietary conduct. Dietary notions and practices of the past are analyzed in the light of nutrition. The role of food in the present war is surveyed, stressing the value of a nutrition movement in improving food habits. There is a discussion of the means whereby science and democratic organization may achieve freedom from want in food, also a possible solution to the problem of feeding the post-war world.

GRAVES, LULU GRACE, AND CLARENCE WILBUR TABER

A dictionary of food and nutrition. Philadelphia: F. A. Davis Company, 1938. 423 p. 18 cm. \$3.50. 1852b

Note: A compendium of terms related to the science of nutrition and dietetics for physicians, dietitians, home economists, food producers, nurses, and interested laymen. Only definitely established data and methods have been included. Technical and scientific terms pertaining to digestion, its processes and disorders, nutrition, chemical and physiological subjects have for the most part been taken from Taber's *Cyclopedic medical dictionary*, Philadelphia, 1942 (see Index). Many fruits and vegetables new to the American market in 1938 are included. Diets,

indications, and contraindications for the use of any particular food in a specific disease have been omitted owing to the diverse opinions among experts. There is a bibliography of about 150 books on physiology, nutrition, and cooking, as well as a table giving the nutritive value of many commonly used foods.

GRAVES, LULU GRACE

Foods in health and disease. New York: The Macmillan Company, 1932. 390 p. illus. 22 cm. \$3.50. 1852c

Contents: Food elements. Function of food and factors which influence nutrition. Vegetables. Fruits. Sugars. Nuts. Animal foods. Fats and oils. Beverages. Food accessories. Preservation of foods. Therapeutic diets. Overweight and underweight. Infectious diseases. Nephritis—gout and arthritis—epilepsy. Gastro-intestinal diseases. Diabetes. Deficiency diseases. Diseases of the circulation. Infant feeding. Food allergies and food infections. Appendix: Table of household measurements. Table of vitamins. Table of edible organic nutrients. Index of authors. Index of subjects.

Note: This book is designed both for non-professional persons (housewives, parents, food producers and distributors) and for persons concerned with nutrition and health (doctors, dietitians, nurses, and home economics workers). It covers the practical points regarding food materials, their production and transportation, their care in the home and in the market; the dietetic value of the well-known foods and of others not as well-known as they deserve to be. The chapters on food preservation and food infections are outstanding features.

HAWLEY, ESTELLE ELIZABETH, AND GRACE CARDEN

The art and science of nutrition; a textbook on the theory and application of nutrition. With 139 illustrations including 11 in color. St. Louis: The C. V. Mosby Company, 1944. 668 p. illus. (part col.) 22 cm. \$3.75. 1853

Contents (abridged): Digestion. Metabolism. The blood and lymph. The endocrines and their role in nutrition. Classification of foods. The proteins. The fats. The carbohydrates. The vitamins and vitamin deficiencies. Minerals and mineral metabolism. Water balance. Roughage. Food hazards, food fads, and food protection. The essentials of an adequate diet. Planning the family diet. Weight control. Nutritional needs in normal pregnancy. Lactation. The feeding of infants. Food for children. The diet of old age. General suggestions for diet therapy and the feeding of invalids. Diabetes mellitus. Gout. The dietary management of fevers. Addison's disease. Gastrointestinal tract diseases. Diseases of the liver and gall bladder. Celiac disease. The nephritides. Circulatory disturbances. The anemias. Food allergy. Diet and skin disorders. The diet of surgical cases. The choice, preparation, and serving of foods. References. Appendix.

Note: A comprehensive, detailed text written to meet the needs of the layman and dietitian. The terminology is non-technical. The bibliography is extensive and is grouped by subject. Several special features in the appendix include sample diets, tables of food composition, and a list of the caloric content of foods.

LUSK, GRAHAM

Nutrition. With 13 illustrations. New York: P. B. Hoeber, Inc., 1933. 142 p. illus. 17 cm. (Clio medica; a series of primers on the history of medicine . . . x) \$1.50. 1854

Contents: The ancient world. The Middle Ages. The seventeenth century. The eighteenth century. Dietetics. The nineteenth century: French era. German era. The modern phase. Bibliography. Indexes.

Note: One of a series of medical history primers, this volume deals with the history and development of a single idea: the laws governing animal metabolism. The author shows how these laws were gradually revealed by the labors of a dozen men working during the eighteenth and nineteenth centuries. Among the special merits of the book are the revelation of these pioneers as living figures, the reality of their problems and the genius of their solutions. The book is of interest not only to the medical and nutrition professions but to the lay reader as well. The bibliography lists 79 books and articles from the world literature of general medicine.

McCOLLUM, ELMER VERNER, AND OTHERS

613.2
The newer knowledge of nutrition, by E. V. McCollum, Elsa Orent-Keiles, and Harry G. Day. Fifth edition, entirely rewritten. New York: The Macmillan Company, 1939. 701 p. illus. 22 cm. \$5.00. 1855

Contents: The science of nutrition, early history, and development of concepts. Nutritive requirements of the body, the modern concept of dietary essentials. Carbohydrates in nutrition. Lipids in nutrition. General nature of proteins and amino acids and their significance in nutrition. Nutritional value of proteins and the effects of variations in the level of dietary protein. Calcium, phosphorus, and magnesium. Sodium, potassium, and chlorine. Iron, copper, and nutritional anemias. Iodine and its relation to thyroid function. "Trace" inorganic elements. Chemical nature of vitamin A. Nutritional significance of vitamin A. Chemical nature of vitamin D. Significance of vitamin D in rickets and related diseases. Chemical nature of ascorbic acid (vitamin C). Nutritional significance of ascorbic acid. Chemical nature of thiamin (vitamin B₁). Nutritional significance of thiamin. Riboflavin. Pellagra and animal deficiency diseases related to pellagra. Other vitamin factors. Vitamin E. Dietary properties of foodstuffs. Appetite, normal and perverted. Dietary habits of man in different parts of the world. Diet in relation to the teeth. Diet in relation to healthful longevity. Appendix. Index.

Note: This book offers a concise survey of the entire field of nutrition, for physicians, dentists, nurses, teachers, and students of nutrition. The fourth edition appeared ten years ago and the wealth of new material necessitated a complete rewriting. Following the plan of previous editions, the historical setting is first presented and the development of modern concepts traced, the known nutrients being then considered separately. Emphasis is placed on the newer knowledge, only such references to the older literature being included as are needed for a clear understanding; but each chapter presents all of the essential information, making the volume useful as a textbook. The authors have themselves made important contributions to the knowledge of minerals in nutrition and have included a considerable amount of information on this subject from their own investigations. The chapter on riboflavin is also of special value for its exposition of the nomenclature of the vitamin-B complex. References are listed by chapters.

MACY, ICIE GERTRUDE Vol 2, 1946, 8/1000

612.71
Nutrition and chemical growth in childhood. Volume 1: Evaluation. By Icie G. Macy, director, Research Laboratory, Children's Fund of Michigan. With a foreword by Hugo A. Freund. Springfield, Ill.: Charles C. Thomas, 1942. 432 p. illus. 23 cm. \$5.00. 1855a

Contents: Foreword. Preface. List of illustrations. List of tables. Introduction. General considerations in metabolic balance studies. Organization of an extensive metabolic investigation. Satisfying appetite and meeting recommended dietary allowances. Some physiological aspects of digestion and excretion. Some chemical aspects of digestion and excretion. Energy metabolism in childhood. Metabolic balances. Hematochemical studies. Methods. Food, urine and feces. Cytometric and hematochemical. Polarographic. Compilation and treatment of data. References cited. Publications of the Research Laboratory, Children's Fund of Michigan. Author index. Subject index.

Note: The publication of this work was undertaken so that physicians and research workers alike may have at their disposal not only a reference work on normal values relating to growth and nutrition in childhood, but also integrated information useful for practical applications. In the present volume, emphasis has been placed upon details of technique and the average and range of performance by normal children at different age levels in respect to nutrition and growth. It is planned to consider in Volume II, the nutrition and growth of individual children, together with the synergic and cumulative aspects of nutriment assimilation, and the chemistry of growth.

NATIONAL RESEARCH COUNCIL

612.71
The problem of changing food habits; report of the Committee on Food Habits, 1941-1943. Carl E. Guthe, chairman; Margaret Mead, executive secretary. Washington, D.C.: The Na-

tional Research Council of the National Academy of Sciences, 1943. 177 p. illus. 25 cm. (Bulletin of the National Research Council. No. 108, October, 1943) Gratis. 1856

Contents (abridged): Part I, Introduction: History of the Committee on Food Habits, by Carl E. Guthe. The problem of changing food habits, by Margaret Mead. Part II, Demonstration and research conducted under Committee auspices: Forces behind food habits and methods of change, by Kurt Lewin. Adjustment to dietary changes in various somatic disorders, by Hilde Bruch and Marjorie Janis. A study of the use of the friendship pattern in nutrition education, by Earl L. Koos. A study of the effect of odd-shifts upon the food habits of war workers, by Gladys Engel-Frisch. Qualitative attitude analysis, by Rhoda Métraux. Summary of methods of a field work class, by Hortense Powdermaker. Food habits of selected subcultures in the United States, by Natalie F. Joffe. Tests of acceptability of emergency rations, by Natalie F. Joffe. Summary of some personality factors in block leaders in low income groups. Part III, Related research: Outline of studies on food habits in the rural Southeast, by Margaret T. Cussler and Mary L. de Givie. Social process and dietary change, by Herbert Passin and John W. Bennett. Part IV: Summaries of committee conferences. Index.

Note: This report contains a summary of the activities of the Committee on Food Habits of the National Research Council during the period indicated, and deals with the psychological and cultural pattern, drawing together existing knowledge bearing on food likes and dislikes and the processes of their formation and change. In addition to the individual papers listed in the table of contents above, there are summaries in Part IV of the researches and contributions in the fields of food habits, market conditions, child development, local food habits, the wartime roles of the nutritionist, rationing and morale, feeding liberated countries and nutrition education, impact of the war on local food habits, and other related problems of food supply and food habits as influenced by World War II.

NATIONAL RESEARCH COUNCIL. COMMITTEE ON DIAGNOSIS AND PATHOLOGY OF NUTRITIONAL DEFICIENCIES

Inadequate diets and nutritional deficiencies in the United States, their prevalence and significance. Report of the Committee on Diagnosis and Pathology of Nutritional Deficiencies, Food and Nutrition Board, H. D. Kruse, chairman. Washington, D.C.: The National Research Council, National Academy of Sciences, 1943. 56 p. 24 cm. (Bulletin of National Research Council. No. 109, Nov., 1943) Paper, \$0.50. 1857

Contents: Prevalence of inadequate diets as shown by surveys. Deficiency states: their causes, forms, and detection. Prevalence of deficiency states. Significance of deficiency states and optimum nutrition. Summary and conclusions. References.

Note: This publication brings together the results of dietary surveys and nutritional appraisal among the population of the United States which have been reported at irregular intervals in widely scattered journals during the decade 1933-1943. In addition, this review contains a considerable amount of previously unpublished material, and much of the earlier data has been recalculated and reclassified on a uniform, authoritative and comparable scale. The Committee concludes from the study of the numerous surveys among persons of all ages in many localities that inadequate diets are widespread in the nation, and that adequate nutrition is an individual matter related to the conditioning factors of physical exertion, light, trauma of several kinds, and disease. The repeated or protracted operation of faulty diet or various conditioning factors is held to lead to cumulative effects in deficiency states, which, according to the present report, are rife throughout the nation.

PETERSON, WILLIAM HAROLD, AND OTHERS 612.79

Elements of food biochemistry, by William H. Peterson, John T. Skinner and Frank M. Strong. New York: Prentice-Hall, Inc., 1943. 291 p. illus. 23 cm. \$4.00. 1857a

Contents (abridged): Carbohydrates. Definition, occurrence, and importance. Pectin. Immuno-polysaccharides. Glycogenesis and glycogenolysis. Metabolism of carbohydrates. Fermentation food-products. Modern bread-yeast. Biochemistry of yeast fermentation. Fermentation equations and intermediates. Food and temperature requirements. Nature and condition of fermentation. Bacterial fermentation in the intestinal tract. Acidity. Molar solutions. Normal solutions. Analysis of biological materials. Hydrogen-ion concentration. Measurement of pH. Lipides. Properties of esters. True fats. Fatty acids. Glycerides of common fats. Determination of fat. Sterols, cholesterol, sitosterol, ergosterol. Metabolism of fats. Proteins. Number and kind of amino acids. Metabolism of proteins. Utilization of N-free residues. Mineral elements in nutrition. Calcium. Iron. Phosphorus. Copper. Iodine. Water. Function. Metabolic water. Vitamins. Physiological function. Sources. Requirements. Chemical nature. Enzymes: occurrence. Chemical nature. Activation. Inactivation. Oxidation in tissues. Appendix. Index.

Note: An advanced text covering the chemical changes of food during metabolism. Three previous editions, appearing in photo-offset, were used for a score of years at the University of Wisconsin. The present edition has been completely revised and a new chapter on acidity added. Tables show occurrence of mineral elements and vitamins.

RITZMAN, ERNEST GEORGE, AND FRANCIS G. BENEDICT

Nutritional physiology of the adult ruminant. Washington, D.C.: Carnegie Institution of Washington, 1938. 200 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 494) Paper, \$2.00; cloth, \$2.50. 1858

Contents (abridged): The physiology of digestion, absorption, and elimination of waste products by the ruminant. Metabolism. Evaluation of feeds. Tables.

Note: A study based primarily on observations of ten adult cows of the Holstein and Jersey strains. Published reports based on experiments with other animals are used for comparison to supplement the direct observations.

ROSE, MARY DAVIES (SWARTZ)

Feeding the family. Fourth edition. New York: The Macmillan Company, 1940. 421 p. illus. 22 cm. \$3.75. 1858a

Contents: The significance of food. Care of the digestive mechanism. The cost of food. The making of menus. Food for the adult man. Food for the adult woman. Food for the baby. Food for the two-year-old child. Food for the children three and four years old. Food for the children five to seven years old. Food for children eight to twelve years old. Food in adolescence and youth. Food after fifty. Food for the family group. Food for the sick and convalescent. Appendix: Nutritive values of foods. Dietary recipes. Fuel values in relation to cost. Height and weight tables. Index.

Note: A book for the housewife and mother and a standard textbook for students of home economics, showing how the use of suitable proportions of common foods such as milk, cereals and bread stuffs, fruits and vegetables, fats, sugars, and meats, will provide all the healthy members of the family group with food for optimum nutrition. A study of the protein, fat, vitamin, and caloric content of food and of the laws which govern nutrition is followed by the listing of different diets for various age groups and occupations, and for the sick and convalescent. The fourth edition is substantially the same as earlier editions except for increased emphasis on the vitamins and a new section on allergy.

ROSE, MARY DAVIES (SWARTZ)

A laboratory handbook for dietetics. Fourth edition. New York: The Macmillan Company, 1937. 322 p. illus. 22 cm. \$3.00. 1858b

Contents (abridged): Part I, Food values and food requirements: The composition of food materials. The functions of food. Food requirements. Part II, Problems in dietary calculation. Part III, Reference tables. Appendix: Bibliography of sources of information regarding composition of foods. The equipment of a dietetics laboratory. Index.

Note: This laboratory guide for college courses is widely used in the United States. It covers problems involved in the calculation of food values and food requirements and in the construction of dietaries, and furnishes tables which reduce the labor involved in such work.

ROSE, MARY DAVIES (SWARTZ)

Rose's Foundations of nutrition. Fourth edition, revised by Grace MacLeod and Clara Mae Taylor. New York: The Macmillan Company, 1944. 594 p. illus. (part col.) 22 cm. \$3.75. 1859

Contents: Historical introduction. The basal metabolism and factors affecting it. The energy requirement of adults. The energy requirement of children. Food as the source of energy for the body. Shortage and surplus of calories. Water. Protein as body building material. Mineral elements. Phosphorus and calcium. Iron, copper, and iodine. Vitamin a. Thiamine (vitamin b). Ascorbic acid (vitamin c). Vitamin d. Riboflavin (vitamin g). Nicotinic acid or niacin. Other vitamins. Contributions to the diet made by various types of food materials. Milk. The foods derived from grains. Vegetables and fruits. Eggs, cheese, nuts, meat, and other flesh foods. Fats, sugars, and other sweets. The construction of an adequate diet: diets for adults. Special food needs of mothers and babies. Food needs of pre-school and kindergarten children. Food needs of elementary and high school boys and girls. Adequate diets for family groups. Appendix.

Note: A standard text for use in courses of college grade. It is useful also as a practical reference book. In this edition, chapters on dietaries for adults, children, and family groups have been rewritten to present newer and simpler methods of planning and evaluating diets. An additional chapter on vitamins has been included to cover the new discoveries in this field. The daily allowances recommended by the Committee on Foods and Nutrition of the National Research Council in 1943 have been expressed in tables in both shares and weights. Emphasis throughout the book is on the practical applications of the science of nutrition, and full tables of the nutritive values of foods are given, both in Rose shares and in standard weights, for the quick calculation of diets and daily menus.

SHERMAN, HENRY CLAPP

Chemistry of food and nutrition. Sixth edition. New York: The Macmillan Company, 1941. 611 p. illus. 22 cm. \$3.25. 1859a

Contents (abridged): Carbohydrates. Fat and lipoids. General chemistry of the proteins and their amino acids. Enzymes and digestion. The basal energy metabolism, regulation of body temperature, and specific dynamic action. Quantitative aspects of protein needs and values. Mineral elements in foods and nutrition. Nutritional aspects of acid-base balance. Iodine in nutrition—simple goiter as a nutritional problem. Ascorbic acid (vitamin C). Thiamin (vitamin B₁). Riboflavin. Nicotinic acid and the pellagra problem. The vitamin D. The nutritional chemistry of reproduction and lactation. Some chemical aspects of growth and development. Dietary standards. Food economics in the light of the newer chemistry of nutrition. Nutritional chemistry and human progress. Appendixes: Factors for caloric values of various materials when burned in oxy-calorimeter. Proximate composition and energy values of foods. Vitamin values of foods. Index.

Note: A standard textbook for college courses. It is also of value as a reference book. This edition has been extensively revised. Three new chapters on vitamins and deficiency diseases have been added.

SHERMAN, HENRY CLAPP, AND CAROLINE SHERMAN LANFORD

Essentials of nutrition. Second edition. New York: The Macmillan Company, 1943. 442 p. illus. 22 cm. \$3.50. 1860

Contents: The nutritional improvement of life. The more abundant nutrients in foods. What happens to food in the body: digestion and metabolism. Energy aspects of nutrition. How to meet the energy need and have the body weight you want. How to meet the need for protein. Mineral elements and regulatory processes in nutrition. Phosphorus and calcium. Iron and the nutrition of the blood. Iodine. Ascorbic acid (vitamin C). Thiamin (vitamin B or B₁). Riboflavin, nicotinic acid, and the pellagra problem. Other water-soluble vitamins. Vitamin A and its precursors. Rickets and the vitamins D. Other fat-soluble vitamins. Some relations of food to the teeth. Nutritional characteristics of the chief types of food. Food costs and values: nutritional guidance in food economics. How to make nutritional knowledge more effective ("Nutrition policy": public and personal). Appendixes: Fatty acids. Digestive enzymes. Composition and nutritive values of foods. Recommended daily allowances for specific nutrients. Directions for simple statistical cal-

culations and interpretations. The planning of diets in terms of twelve food groups. Glossary.

Note: A textbook for introductory college courses. It is designed for students who have had no previous training in chemistry and physiology. An effort is made to show the student the application of the principles of nutrition to his own health.

SHERMAN, HENRY CLAPP, AND CAROLINE SHERMAN LANFORD

An introduction to foods and nutrition. New York: The Macmillan Company, 1943. 292 p. illus. 21 cm. \$2.50. 1860a

Contents: I, Individual and national importance of nutrition: The relation of nutrition to the physical fitness and success of the individual. The national nutrition problem. II, The maintenance of good family nutrition: Differences in need due to age, sex, and occupation. Calories and proteins. Calcium, iron, and iodine. Fat-soluble vitamins. Water-soluble vitamins. III, Foods—their properties, preservation, and preparation: Milk and its products. Meats, fish, poultry, eggs, and nuts. Fruits and vegetables. Breadstuffs and cereals, fats and sweets, food adjuncts. Preparation of food to retain nutritive values. IV, Planning of meals and management of food supplies: Meal planning. The budgeting and purchase of food. Good nutrition at different economic levels and during wartime shortages. Family planning and management in relation to foods. Community problems—individual and public nutrition policy. Appendix. Subject index.

Note: An elementary book for college students not majoring in foods and nutrition, and for the general reader.

SHERMAN, HENRY CLAPP, AND CONSTANCE S. PEARSON

Modern bread from the viewpoint of nutrition. New York: The Macmillan Company, 1942. 118 p. illus. 21 cm. \$1.75. 1861

Contents: Progress brings new bread problems. Fundamental characteristics of bread as food. Proteins. Mineral elements of wheat and bread. Vitamin values. Quantitative place of bread in the diet. Present trends and future problems. Summary. Bibliography. Index.

Note: Concerned with the problem of increasing the nutritive value of food. The book will be of special interest to persons who have to do with food values and the planning of diets. It devotes a chapter to each of the most important constituents of bread, proteins, mineral elements, and vitamins, and in addition gives an account of the history of bread-making from the earliest known beginnings and of the evolution of modern wheat production, milling, and baking; and gives a résumé of recent experiments directed toward the determination of the nutritive values of milk, etc., and a discussion of the relative merits of the several methods suggested for enriching bread.

SHERMAN, HENRY CLAPP

The science of nutrition. New York: Columbia University Press, 1943. 253 p. 22 cm. \$2.75. 1862

Contents: The modern view of food and nutrition. Food as fuel and the body as a machine. Advances in our knowledge of the materials of bodily structure. A fruitful broadening of experimental method: introducing the vitamins. Short story of scurvy and vitamin C (ascorbic acid). The outstanding vitamins of the B group. Fat-soluble vitamins A and D. How the body manages its nutritional resources. Nutritional characteristics of the chief groups of foods. "Are we well fed?" The nutritional improvement of life. Nutrition for realization of the potentialities of youth and of maturity. Nutritional guidance for "The backward art of spending money." Nutrition policy. Scientific critique of the "offer" of higher health and longer life. Appendix. Bibliography. Index.

Note: The first part of the book tells the story of the science of nutrition, its experiments and its results, and summarizes the actual nutritional knowledge which is now at our command. The second part discusses means of making this knowledge more effective, means which include educational programs, governmental action, and economic measures. The book is intended for readers with scientific curiosity, but without special training in nutrition.

TAYLOR, CLARA MAE

Food values in shares and weights. New York: The Macmillan Company, 1942. 92 p. illus. (part col.) 25 cm. \$1.50. 1862a

Contents: Part I, Food values in shares—explanation of the share system: Table I, Recommended daily allowances for specific nutrients in shares. Table II, Food values in shares. Graphic presentation. Form for recording food intake for one day. Form for calculation of food intake for one day in shares. Graphic comparison of food intake with recommended daily allowances. Part II, Food values in weights—discussion of food values in weights: Table III, Recommended daily allowances for specific nutrients in weights. Table IV, Food values in weights. Form for recording food intake for one day. Form for calculation of food intake for one day in weights. Bibliography.

Note: These new tables provide up-to-date and convenient information for appraising or calculating the nutritive values of foods and diets for dietitians, teachers, and students of foods and nutrition—to all who plan or supervise regular meals or special diets. They give the nutritive content of 500 common foods—both raw and cooked—and show the nutritive values both in the convenient Rose shares and in standard weights. The book also contains the tables of the recommended daily allowances for specific nutrients suggested by the Committee on Foods and Nutrition of the National Research Council in May, 1941; methods of graphically illustrating the different values of foods; and sample record sheets for making dietary studies.

UNITED STATES. DEPARTMENT OF AGRICULTURE

Food and life. Washington, D.C.: Government Printing Office, 1939. 1165 p. illus. 23 cm. (United States. Department of Agriculture. Yearbook of agriculture, 1939) \$1.50. 1863

Contents: Foreword, by Henry A. Wallace. Yearbook committee on nutrition. Food and life—a summary, by Gove Hambridge. Part 1, Human nutrition: From tradition to science. Food functions and the relation of food to health. Food habits, old and new. Can food habits be changed? Food facts, facts, and fancies. The white rat as a contributor to science. Human food requirements—carbohydrates, fats, energy. Protein requirements of man. Mineral needs of man. Vitamin needs of man. Food composition. Vitamin content of foods. Present-day diets in the United States. Planning for good nutrition. Micro-organisms in foods and food preservation. Enzymes in foods and food preservation. United States meat inspection. Supervision and inspection of milk. Food grades and the consumer. What the modern homemaker needs to know. Better nutrition as a national goal. Part 2, Animal nutrition: Sources and cycles of the nutritive elements. The digestive processes in domestic animals. Factors affecting maintenance nutrition, feed utilization, and health of farm animals. Growth, fattening, and meat production. Some effects of nutritional levels. The relation of diet to reproduction. Relation of nutrition to the production of hides and wool. The nutrition of very young animals. Nutritional requirements of beef and dual-purpose cattle. Practices in the feeding of beef and dual-purpose cattle. The feeding of dairy cows for intensive milk production in practice. Figuring the rations of dairy cows. Practical feeding and nutritional requirements of young dairy stock. Variations in the composition of milk. Utilization of feed energy and feed protein in milk secretion. The vitamins in milk and in milk production. Glands, hormones, and blood constituents—their relation to milk secretion. Milk in nutritional research—a sketch of progress. Nutritive requirements of swine. Practices in swine feeding. Feeding problems with sheep. Feeding problems with goats. Nutrition of horses and mules. Practical nutritive requirements of poultry. Practical feeding of poultry. Nutritional requirements of dogs. Feeding dogs. Nutrition of fur animals. Feeding requirements of gallinaceous upland game birds. Pasture and range in livestock feeding. The nutritive value of harvested forages. Losses in making hay and silage. Nutritive value of miscellaneous feeds. Deficient and excess minerals in forage in the United States. What do we need to know in livestock nutrition? Composition of the principal feed-stuffs used for livestock. Literature cited. Index.

Note: This volume contains technical and nontechnical material on the principles of nutrition, part 1 dealing with human nutrition, part 2 with animal nutrition. It is a collection of articles mainly by Department of Agriculture scientists planned to serve as a summary of present knowledge of the subject of nutrition in all its phases. It is intended for those on farms and elsewhere who are concerned with feeding human beings and animals and is also intended to serve as a basis for scientific advance in the field of nutrition. The comprehensive list of literature cited gives references to 1278 books and articles on nutrition.

WIRTSCHAFTER, ZOLTON TILLSON

Minerals in nutrition. New York: Reinhold Publishing Corporation, 1942. 175 p. illus. 19 cm. \$1.75. 1864

Contents: The minerals in the body. The action and distribution of minerals. What salt does in the body. Potassium. Calcium. Magnesium. Phosphorus. Sulfur. Iron. Iodine. Other minerals. Pregnancy. Lactation. Summary. Index.

Note: A concise survey of the knowledge of the functions of minerals in the body. It is written in non-technical language and is addressed to dietitians, pharmacists, and doctors, as well as to laymen. Tables showing the mineral contents of common foodstuffs.

Metabolism

BENEDICT, FRANCIS GANO, AND ROBERT C. LEE

Hibernation and marmot physiology. Washington, D.C.: Carnegie Institution of Washington, 1938. 239 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 497) Paper, \$2.00; cloth, \$2.50. 1865

Contents (abridged): Techniques employed. Physiology of the non-hibernating marmot. Physiology of the non-hibernating marmot during prolonged fasting. Physiology of the marmot when entering hibernation. Physiology of the marmot in hibernation. Physiology of the marmot when awakening from hibernation. Approaches to artificial hibernation. The causes and theories of hibernation.

Note: An investigation of hibernation centered around the main theme of vital energetics, with emphasis upon heat production and to a less extent upon heat loss. Comparisons are made between the heat production of the marmot in non-hibernating condition and that of the hibernating animal. Respiration, metabolism, and changes in body weight are also studied on the basis of laboratory data.

BENEDICT, FRANCIS GANO, AND ROBERT C. LEE

Lipogenesis in the animal body, with special reference to the physiology of the goose. Washington, D.C.: Carnegie Institution of Washington, 1937. 232 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 489) Paper, \$2.00; cloth, \$2.50. 1866

Contents (abridged): Techniques employed. Physiology of the normal goose: Body weight and composition. Rectal temperature. Heart rate. Respiration rate. Basal metabolism. Water-vapor output. Physiology of the goose during prolonged fasting: Length of life. Loss in body weight. Changes in body composition during fasting. Heat production. Physiology of the goose during surfet feeding: Kinds and amount of food. Rectal temperature. Heart rate. Water-vapor output. Carbon-dioxide production. Cleavage carbon dioxide. Character of gain in body weight. Energy relations in the transformation of carbohydrate into fat.

Note: A study of the transformation of food carbohydrate into body fat, or animal lipogenesis, as observed in experiments using a normal goose as subject because of that animal's marked disposition to convert carbohydrate readily into fat. The data secured from heat production and respiratory exchange measurements have not only physiological value but likewise are potentially of great economic value in the feeding of domestic animals.

BENEDICT, FRANCIS GANO, AND CORNELIA (GOLAY) BENEDICT

Mental effort in relation to gaseous exchange, heart rate, and mechanics of respiration. Washington, D.C.: Carnegie Institution of Washington, 1933. 83 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 446) Paper, \$1.00; cloth, \$1.50. 1867

Contents (abridged): Earlier investigations: cerebral, urinary, circulatory and gaseous metabolism studies. Plan of research. Techniques employed: respiration apparatus. Mechanics of respiration. Heart rate. Record of muscular activity. Results of experiments. General discussion: physiological normality of subject. Influence of body position. Mental effort and metabolism.

Note: A discussion of the effects of mental effort upon metabolism, based upon a review of previous literature and upon original experimental data. The findings of the present investigation in large part controvert the idea that the mental process has a significant dynamic effect upon the energy metabolism.

BENEDICT, FRANCIS GANO

Vital energetics; a study in comparative basal metabolism. Washington, D.C.: Carnegie Institution of Washington, 1938. 215 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 503) Paper, \$2.00; cloth, \$2.50. 1868

Contents (abridged): Physical conditions prerequisite for comparable measurements of heat production. Technical conditions for comparable measurements of heat production. Consideration of heat loss. Selection of metabolism data for comparative purposes. Bases for presenting metabolism data. Survey of the basal metabolism data for each animal species studied. Inter-specific comparisons of true basal metabolism of warm-blooded animals. Comparison of warm-blooded and cold-blooded animals. Suggestions as to uses of basal metabolism data. Consideration of the factors that may contribute to metabolic differences within and between species. Conclusions.

Note: A comparison of the heat processes of energy transformations occurring in different animals and in different humans. Although the work is mainly devoted to a study of heat production, which is considered the essential feature of life, an examination is also made of heat loss. The discussion is confined to the higher forms of life which are characterized by striking differences in structure and form demanded by the different environmental requirements of the organisms.

CARPENTER, THORNE MARTIN

Tables, factors, and formulas for computing respiratory exchange and biological transformations of energy. Third edition. Washington, D.C.: Carnegie Institution of Washington, 1939. 142 p. 25 cm. (Carnegie Institution of Washington. Publication no. 303) Paper, \$1.00; cloth, \$1.50. 1869

Contents: Introduction: Description and use of tables. Tables 1 through 44.

Note: The purpose of this publication is to make available to investigators the majority of tables and conversion factors needed in calculations of results from measurements obtained by the several types of respiratory-exchange apparatus, particularly the Gagnault-Reiset and the combination of spirometer, valves, and breathing appliance, and to make available the standards of normal metabolism. The introductory section gives the method of construction and calculation of the tables, with examples of their application. Among the tables are those giving logarithms of barometric pressure and temperature used in computing the reduction of gas volumes to 0° and 760 millimeters; oxygen-volume tables used in calculating the oxygen deficit of expired air; calorific values of oxygen and carbon dioxide for the calculation of heat derived from carbohydrate and fat in respiratory exchange measurements; the Lissauer formula for calculating body-surface of infants, and the DuBois formula for calculating body-surface of adults; basal heat-production and metabolism tables for both sexes; energy expenditure tables and other data on metabolism. In the third edition the few minor errors occurring in the second edition have been corrected, two tables have been revised, and seven new tables added.

SCHOENHEIMER, RUDOLF

The dynamic state of body constituents. Cambridge, Mass.: Harvard University Press, 1942. 78 p. 23 cm. (Harvard University monographs in medicine and public health. No. 3) \$1.75. 1870

Contents: The reactions of the body fats investigated with deuterium. The state of the body proteins. The role of structural elements in the formation of excretory products. Bibliography and general references. Index.

Note: The book consists of three Edward K. Dunham lectures for the promotion of medical science, 1941. The author's original investigations substantiate a "concept of metabolic 'regeneration,' wherein the central idea is the continual release and uptake of chemical substances by tissues to and from a circulating metabolic pool."

SHOHL, ALFRED THEODORE

Mineral metabolism. New York: Reinhold Publishing Corporation, 1939. 394 p. illus. 23 cm. (American Chemical Society monograph series. No. 82) \$5.00. 1871

Contents: Introduction. Mineral composition of the body. Secretions and excretions: General considerations. Alimentary secretions. External secretions. Excretions. Changes in volume and composition of body fluids. Internal secretions: Adrenal glands. Pituitary gland. Parathyroid glands. Thyroid gland. Other glands. Total base, chloride, ammonium and bicarbonate: Total base. Sodium. Potassium. Sodium and potassium. Chloride. Ammonium. Bicarbonate. Calcium and magnesium: Calcium in the blood. Calcification. Tetany. Magnesium. Phosphorus. Sulfur. Iron. Iodine. Traces. Water metabolism: Occurrence of water in the body. Water excretion. Water requirement. Control mechanisms. Relation of mineral intake to water metabolism. Water insufficiency and excess. Anion-cation relationships: Mechanism of acid-base equilibrium. Excretion of anions and cations. Storage and depletion. Positive and negative mineral intake. Mineral cationogen-excess balance. Fasting. Mineral intakes, balances and requirements: Mineral intake. Balance studies. Pregnancy and lactation. Mineral requirements. Indexes.

Note: A condensed treatise for biochemists, pharmacists, biologists, and others on the role of minerals in the structure and function of the human body. The author has assumed that the reader will have a knowledge of the fundamentals of biochemistry and physical chemistry. The bibliographies attached to the chapters contain many hundreds of reference to the literature but are not complete.

Animal Heat

BALDWIN, SAMUEL PRENTISS, AND S. CHARLES KENDEIGH

Physiology of the temperature of birds. Cleveland, O., 1932. 196 p. illus. 23 cm. (Scientific publications of the Cleveland Museum of Natural History. Vol. III) Paper, \$1.00; cloth, \$1.75. 1872

Contents (abridged): Historical account. Acknowledgments. Purpose of the study. Physiological point of view. Ecological point of view. Scientific names of birds included in this study. Methods of study: Research facilities. Instruments used. Body temperature of adult birds: Standard temperature. Normal temperature. Rate of respiratory movements at different body temperatures. Skin temperature. Body temperature of birds under natural conditions. Mechanism of temperature control. Body temperature of nestling birds: Development of temperature control in young birds. Survival time of young birds at high and low temperatures. Normal temperatures of young birds in the nest. Temperature of eggs and nest: Fluctuation of egg temperature in the nest. Temperature of incubation. Fluctuation in temperature of the nest. Summary and conclusions. Bibliography. Index.

Note: A summary of the whole field of temperature in birds and of the results obtained by observation and experiment. The work is designed to aid in orienting and correlating future studies of the problem. Stress is placed on the physiological aspect of the question, rather than on correlation with behavior. An attempt is made to determine the relation between body temperature of birds and the environmental conditions under which they live.

DU BOIS, EUGENE FLOYD

... Lane medical lectures: The mechanism of heat loss and temperature regulation. Stanford University, Calif.: Stanford University

Press, 1937. 95 p. illus. 25 cm. (Stanford University publications. University series. Medical sciences. Vol. III, no. 4) \$2.25. 1873

Note: These lectures discuss heat production, heat loss, and temperature regulation in the body. Suggestions are made for clinical control and treatment of chills and fevers.

Endocrinology

ASSOCIATION FOR RESEARCH IN NERVOUS AND MENTAL DISEASE

The pituitary gland; an investigation of the most recent advances; the proceedings of the Association, New York, December 28th and 29th, 1936; editorial board: Walter Timme, Angus M. Brantz, Clarence C. Hare; with 160 illustrations and 53 tables. Baltimore: The Williams & Wilkins Company, 1938. 764 p. illus. (part col.) 23 cm. \$10.00. 1874

Contents: Section I, Anatomy: Glands of the brain with especial reference to the pituitary gland, by Frederick Tinsley. Vascular supply of the hypophysis cerebri of the rhesus monkey and man, by George B. Walslocki. Cytology of the pituitary gland, by Aura E. Skveringhaus. Proportions of various subdivisions of normal adult human hypophysis cerebri, etc., by A. T. Rasmussen. Paths of secretion from the hypophysis, by D. McK. Roch. Section II, Physiology: Hypophyseal growth hormone—its separation from hormones stimulating the thyroid, etc., by Herbert M. Evans. Relation of anterior pituitary growth hormone to protein metabolism, by Milton O. Lee. Influence of anterior pituitary on cranial form and structure, etc., by Hector Martimer. Thyrotropic and adrenotropic hormones, by Hans Selye. Pituitary gonadotropic hormones, by Frederick L. Hsaw, H. L. Fjvold, and R. O. Creep. Anterior pituitary and metabolism of acetone bodies, by David Landsborough Thomson. Anti-hormones, by J. B. Collip. Relation of anterior pituitary to carbohydrate metabolism, by C. N. H. Long. Prolactin, by Oscar Riddle and Robert W. Bates. Relation of anterior pituitary gland to problems of puberty and of menstruation, by Earl T. Dingle. Relation of pituitary gland to pregnancy and labor, by Raphael Kurzrok. The menopause, by Raphael Kurzrok and P. E. Smith. Biologic differences between anterior pituitary sex hormones and gonadotropic substances from pregnant women, by C. F. Fluhmann. Influence of light upon pituitary activity, by Thomas Hume Bissonneite. Function of the pars tuberalis, by Wayne J. A. Well. Pituitary gland in relation to water exchange, by Curt P. Richter. Hypothalamico-hypophyseal mechanism in diabetes insipidus, by S. W. Benson, Charles Fisher, and W. R. Ingram. Relation of histological structure to active substances extracted from posterior lobe of hypophysis, by I. Cersb. Posterior lobe of the pituitary gland of the whale; and pituitrin and its fractions, pitressin and pitocin, by E. M. K. Geiling and L. L. Robbins. Studies on hypophysis cerebri by means of tissue cultures, by Margaret Reed Lewis. Influence of anterior lobe of pituitary on growth of sarcoma and carcinoma, by M. J. Sittenfeld. Hypophysis and resistance, by David Perla. Section III, General considerations: Distribution of pituitary syndromes in the United States, by Walter Timme. Influence of anterior pituitary gland upon brain body relations, by H. S. Rubinstein. Relation of anterior lobe to the specific dynamic action of protein, by Max A. Goldzieher. Pituitary disturbances in relation to personality, by Louis A. Lurie. Behavior changes produced in rat by hypophysectomy, by Curt P. Richter and John F. Eckert. Migraine: a critique of the hypophyseal theory, by Walter Timme. Pituitary basophilism of Cushing—syndrome of the basophilic adenoma, by Irving Pardee. Clinical features of hypophyseal cachexia (Simmonds disease), by W. W. Herrick. Constitutional and genetic reactions associated with modifications in pituitary gland, by Charles R. Stockard. Dystrophia adiposogenitalis (Fröhlich's syndrome), by Harvey G. Beck. Roentgen therapy of pituitary tumors, by Cornelius G. Dyke and Clarence C. Hare. Surgical treatment of pituitary tumors, by Gilbert Horrax. Pituitary dwarfism, by E. Kost Snelton. Role of pituitary gland in compensatory syndromes, by John McDowell McKinney and Irving H. Pardee. Acromegaly, by Tracy J. Putnam and Leo M. Davidson. Index.

Note: Volume XVII of the *Research publications* of this Association. In all chapters, pertinent literature is carefully reviewed, with special emphasis on recent experimental and clinical work. Complete bibliographies. Of interest to physiologists, neurologists, and others.

CORNER, GEORGE WASHINGTON

The hormones in human reproduction. Princeton: Princeton University Press, 1942. 265 p. illus. 22 cm. \$2.75. 1875

Contents: The place of the higher animals and of mankind in particular, in the general scheme of animal reproduction. The human egg and the organs that make and care for it. The ovary as timepiece. The hormone of preparation and maturity. A hormone for gestation. The menstrual cycle. Endocrine arithmetic. The hormones in pregnancy. The male hormone. Appendix: Chemical structure of the sex gland hormones. Index.

Note: An account of the nature and function of hormones in the processes of sex and reproduction. Intended for the general reader, it is also appropriate for the use of biologists, physicians, and biochemists. It represents, with additions, the substance of the Vanuxem lectures, given at Princeton University in February, 1942.

GROLLMAN, ARTHUR

Essentials of endocrinology. 74 illustrations. Philadelphia: J. B. Lippincott Company, 1941. 480 p. illus. 23 cm. \$6.00. 1876

Contents: Basic survey. Hypophysis. Pineal gland. The thyroid. The parathyroids. The thymus. The islet tissue of the pancreas. The adrenals. General biology of sex. Male reproductive system. Female reproductive system. The steroid hormones. Hormones of the gastrointestinal tract. Other presumptive hormones.

Note: A comprehensive volume which brings together and correlates the basic material concerning experimental and clinical endocrinology. It is written for medical students, workers in biological sciences, and general practitioners.

HOFFMAN, JACOB

Female endocrinology, including sections on the male. Philadelphia: W. B. Saunders Company, 1944. 788 p. illus. (part col.) 25 cm. \$10.00. 1877

Contents: Development of female reproductive organs. Endocrine role of the ovary: follicle, corpus luteum. Time of ovulation and "safe period." Endocrine factors in menstruation. Endocrine control of uterine motility. Endocrine role of uterus; placenta. Parturition. Physiology of breast, testis, and anterior hypophysis. Anterior hypophysis in growth and metabolism. Physiology of posterior hypophysis. Hypothalamico-hypophyseal system. Physiology of thyroid gland, suprarenal glands, parathyroids. Pancreas and gonads. Physiology of thymus gland and pineal body. Anti-hormones. Adolescence. Amenorrhea, oligomenorrhea, hypomenorrhea. Functional uterine bleeding. Dysmenorrhea. Sterility. Spontaneous and habitual abortion. Climacteric. Troublesome manifestations associated with menstrual cycle. Abnormal manifestations arising during gestation. Abnormalities of breast. Obesity. Constitutional types. Endocrinopathies. Cryptorchidism and male hypogonadism. Sex determination and differentiation of sex characters. Hermaphroditism. Diagnostic aids. Sex hormone findings in blood and urine. Hormonal preparations. Bibliographic index. Subject index.

Note: In writing this book for the practitioner, endocrinologist and gynecologist, the author has laid greatest stress on the clinical aspects, at the same time giving a working knowledge of the fundamentals of glandular physiology. Emphasis has been placed on disturbances of functional origin. Nervous and constitutional factors in etiology have been taken into account as well as the place of general physical and mental hygiene in therapy. Diagnostic aids adapted for use in endocrine disorders are described. Mention is made of the more important tests designed for the determination of the gonadal and gonadotropic hormones in the blood and urine. The hormonal preparations now available are given in tabular form and include data on sources, biologic effects, standardization, route of administration, commercial preparations by name and manufacturer, indications for use, and dosage. In addition to the bibliographic index, references are given after each chapter and more than 200 original illustrations have been included.

HOSKINS, ROY GRAHAM

Endocrinology; the glands and their functions. New York: W. W. Norton & Company, Inc., 1941. 388 p. illus. 22 cm. \$5.00. 1878

Contents: Preface. Hormones—the chemical regulators. The adrenal glands. The thyroid gland. The parathyroid glands. The hypophysis or pituitary gland. The male sex glands—the testes. The female sex glands—the ovaries. The placenta as an endocrine organ. The pineal gland. The thymus gland. Endocrine aspects of reproduction. Hormone regulation of the digestive functions. Insulin and diabetes. Some general aspects of endocrinology. Endocrinology of the future. The endocrine literature. Index.

Note: Presents the most significant aspects of the subject of the hormone secretions and their influence on human life. The book embodies investigations and new findings throughout the field. The treatment is for zoologists, psychologists, premedical students, and those practitioners of medicine who need a discussion of the subject which is not too technical. It is also for the general reader.

MATEER, FLORENCE

Glands and efficient behavior. New York: D. Appleton-Century Company, Incorporated, 1935. 243 p. 20 cm. \$2.50. 1879

Contents: Preface. Introduction, by Max A. Goldzieher. Efficient behavior. Determining efficiency. Increasing efficiency. Glands and efficiency. Evaluating gains in efficiency. Thyroid and efficiency in the subnormal. Thyroid and efficiency in the normal. Calcium and efficiency. Pituitary and efficiency in the subnormal. Pituitary and efficiency in the normal. Multiple gland disturbances: Isabel, the variable. Multiple gland disturbances: the Mongolian. Conclusions. Index.

Note: A book for the general reader on the relationship between the ductless glands and efficiency. The study attempts to answer some of the questions concerning gland therapy raised by adults without technical training in medicine or psychology.

MOULTON, FOREST RAY, EDITOR

The chemistry and physiology of hormones. Publication committee, Hans Jensen, F. C. Koch, Abraham White. Washington, D.C.: The American Association for the Advancement of Science, 1944. 242 p. illus. 26 cm. \$4.00. 1879a

Contents: The isolation and chemistry of anterior pituitary hormones influencing growth and metabolism, by Abraham White. The chemistry of gonadotrophins of pituitary origin, by Bacon F. Chow. The chemistry and physiology of the posterior lobe of the pituitary gland, by George W. Irving, Jr. The pituitary growth of hormone, by Walter Marx and Herbert M. Evans. The isolation and chemistry of the adrenal hormones, by Marvin H. Kuizenga. The chemistry of insulin, by H. Jensen. The physiological action of insulin, by F. D. W. Lukens. The physiological action of the adrenal hormones, by Dwight J. Ingle. Euthyroidism and thyroid dysfunction, by William T. Salter. Synthesis of the steroid hormones, by Erwin Schwenk. The isolation and chemistry of human chorionic and pregnant mare serum (equine) gonadotrophins, by Samuel Gurin. The gonadotropic function of the pituitary gland, by Harry L. Fevold. The physiology of the gonadotropic substances of blood, urine, and non-hypophyseal tissues, by Louis Levin. The hormones of the gastro-intestinal tract, by Harry Greengard. The present status of the anti-hormones problem, by Kenneth Wade Thompson. The excretion of steroid hormones in urine, by T. F. Gallagher. I, Concerning the biochemistry and the physiological and clinical significance of the sex hormones and 17 ketosteroids; II, Neo-endocrine and cyto-physiological aspects of adeno-hypophyseal function, by Harry B. Friedgood. References cited.

Note: Seventeen papers by leading professors of biology, physical chemistry, biochemistry, medicine, and related sciences, presented at a research conference of the American Association for the Advancement of Science and revised in the light of exchanges of opinion during the general discussion following the conference. The work represents a summary of the knowledge which seems to be thoroughly established in each of the specialized branches and is thoroughly documented with references to the authorities. There are about 1,200 entries in the combined bibliography given at the end of the book.

SUNDSTROEM, EDWARD SIGFRID, AND GEORGE MICHAELS

The adrenal cortex in adaptation to altitude, climate and cancer. Berkeley: University of

California Press, 1942. 409 p. illus. 33 cm. (Memoirs of the University of California. Editors: C. B. Lipman and E. R. Hedrick. Vol. 12, 1942) Paper, \$4.00. 1880

Contents (abridged): General organization and technical preparations for the project. Adaptive response of normal rats to atmospheric rarefaction: Manifestations; nature and control. Effect of reduced pressure on the viability of animal tumors: Morphology and behavior; chemistry and mechanism. Effects of reduced pressure on some nontumorous forms of disease. Adaptive relations between low pressure and cancer, and some other agents. Conclusions.

Note: The work here reported represents the combination of two separate investigations, one dealing with the response of tumors to diminished pressure, the other, with certain phases of the chemical blood picture in normal animals living under artificially produced altitude conditions. The scope of the latter investigation having been extended to include biochemical factors other than those of blood, and pathological conditions other than that of cancer having also been added, fusion of all these studies into a single project was feasible. The cortico-adrenal aspect formed the connecting link.

VAN DYKE, HARRY BENJAMIN

The physiology and pharmacology of the pituitary body. Chicago, Ill.: The University of Chicago Press, 1936-39. 2 v. illus. (part col.) 23 cm. (The University of Chicago monographs in medicine) Each volume, \$4.50. 1881

Contents: Vol. I. Anatomy of the pituitary body. Effects of hypophysectomy. Growth-promoting hormone. Gonadotropic effects of implants, extracts, and secretion of the pars glandularis. Gonadotropic substances occurring in urine, blood, tissues. Effects of hormones on secretion of milk. Pituitary and thyroid. Pars glandularis and the adrenals, pancreas, parathyroids and thymus. Pars intermedia and pars tuberalis; hormonal regulation of chromatophores. Active principles of pars neuralis. Effects of extracts of pars neuralis on the circulatory system and smooth muscle structures; effects on metabolism. Appendix—Scientific and commercial names of hormones and hormone preparations. Bibliography and index. Vol. II. Anatomy of the pituitary body. Regulation of growth of pituitary body. Gonadotropic hormones. Pars glandularis in relation to development of breasts and secretion of milk. Thyrotropic hormone. Pars glandularis and adrenal glands; influence of pars glandularis on metabolism of carbohydrates, lipoids, proteins, and minerals. Pituitary body and distribution of pigment in chromatophores. Chemistry and pharmacology of extracts of pars neuralis. Pars neuralis as a gland of internal secretion. Appendix—Structural formulas and principal actions of hormones of natural origin. Bibliography and index.

Note: In the first volume of this work the author gives a documented account of experimental work with the pituitary body during the years 1920-1934, and clinical observations are also discussed. About 3000 references are given in this volume. Volume two sums up knowledge of the pituitary gained during 1935-1938, and 1400 additional references are cited.

VAN DYKE, HARRY BENJAMIN, AND OTHERS

Protein hormones of the pituitary body. New York: New York Academy of Sciences, 1943. 174 p. illus. 22 cm. (New York Academy of Sciences. Annals. Vol. XLIII, p. 253-426) Paper, \$2.00. 1882

Contents: Introduction to the conference on protein hormones of the pituitary body, by H. B. Van Dyke. Criteria of purity of proteins, by Theodore Shedlovsky. Hormones of the posterior lobe of the pituitary gland, by George W. Irving, Jr., and Vincent du Vigneaud. The chemistry of thyliakentrin, the follicle-stimulating hormone of the anterior pituitary, by Bacon F. Chow. The luteinizing hormone of the anterior lobe of the pituitary, by H. L. Fevold. The lactogenic hormone and mammodgen, by Abraham White. The growth and metabolic hormones of the anterior pituitary, by C. N. H. Long.

Note: A collection of papers presented by the Section of Physics and Chemistry of the New York Academy of Sciences at a conference held January 9 and 10, 1942. The introduction contains a description of the pituitary body and a diagram of pituitary hormone physiology. References appear as footnotes throughout.

Nervous System

ASSOCIATION FOR RESEARCH IN NERVOUS AND MENTAL DISEASE

The hypothalamus and central levels of autonomic function; proceedings of the Association, New York, December 20 and 21, 1939; editorial board: John F. Fulton, S. Walter Ranson, Angus M. Frantz; with 319 illustrations and 35 tables. Baltimore: The Williams and Wilkins Company, 1940. 980 p. illus. (part col.) 23 cm. \$10.00. 1891

Contents: Introduction. Part I, Anatomy of the hypothalamus: A précis of preoptic, hypothalamic and hypophysial terminology, with atlas, by David McK. Rioch, George B. Wislocki, James L. O'Leary, Joseph C. Hinsey, and Donal Sheehan. The embryological development of the hypothalamic area in mammals, by James W. Papez. The comparative anatomy of the preoptic area and the hypothalamus, by Elizabeth C. Crosby and Russell T. Woodburne. Secretory cells within the hypothalamus, by Ernst Scharrer and Berta Scharrer. Nuclear organization and chief connections of the primate hypothalamus, by W. R. Ingram. Effects of hypophysectomy and hypophysial stalk resection on the hypothalamic nuclei of animals and man, by A. T. Rasmussen. Descending connections from the hypothalamus, by H. W. Magoun. Angio-architecture of the hypothalamus and its peculiarities, by Knox H. Finley. Measurements of vascularity in some hypothalamic nuclei of the albino rat, by E. Horne Craigie. Part II, Physiology of the hypothalamus: Role of the hypothalamus in cardiovascular regulation, by Detlev W. Bronk, R. F. Pitts and M. G. Larrabee. Regulation of body temperature, by S. W. Ranson. The hypothalamus and pilomotor regulation, by A. Earl Walker. Water metabolism: neurogenic factors, by Kendrick Hare. Water metabolism: endocrine factors, by I. Gersh. Hypothalamic control of water movement in response to environmental temperature, by Henry G. Barbour. Evidence for and against control of carbohydrate metabolism by the hypothalamus, by C. N. H. Long. The hypothalamus and fat metabolism, by Edwin F. Gildea and Evelyn B. Man. Relation of the hypothalamus to the gonadotropic functions of the hypophysis, by Chandler McK. Brooks. The hypothalamus and sexual behavior, by Philip Bard. Hypothalamic control of anterior pituitary function, by U. U. Uotila. The hypothalamus and gastro-intestinal regulation, by Donal Sheehan. The influence of suprasegmental levels on vesical activity, by Orthello Langworthy. Effects of analeptic drugs on the hypothalamus of the cat, by J. H. Masserman. The hypothalamus and sleep, by Frank Harrison. The hypothalamus and somatic responses, by Joseph C. Hinsey. Part III, Clinical symposium: Changes in the hypothalamus in organic disease, by A. R. Vonderahe. Tumors involving the hypothalamus and their clinical manifestations, by Percival Bailey. Personality and emotional disorders associated with hypothalamic lesions, by B. J. Alpers. Cell changes in hypothalamus in the major psychoses, by L. O. Morgan. Disturbances of temperature regulation in man, by Charles Davison. Temperature disturbances and the hypothalamus, by H. M. Zimmerman. Surgery of the hypothalamic region, by W. P. Van Wagenen. Autonomic discharge from stimulation of the hypothalamus in man, by James C. White. Medical syndromes of the hypothalamus, by Foster Kennedy. Bibliography. Index. List of members.

Note: Volume xx of the *Research publications* of this Association. The "Précis" with atlas was circulated a year before the papers were presented. Contributors made an effort to conform to the nomenclature there recommended, a step made desirable by the fact that much confusion had resulted from the following, by English and American writers, of three distinct methods of nomenclature used by earlier German writers. Comprehensive bibliographies follow each chapter.

CANNON, WALTER BRADFORD, AND ARTURO ROSENBLUETH

Autonomic neuro-effector systems. New York: The Macmillan Company, 1937. 229 p. illus. 22 cm. (Experimental biology monographs) \$4.00. 1892

Contents: Preface. The organization of the autonomic system. The effectors and their finer innervation. Steps in the development of evidence for chemical mediation of nerve impulses. Sources and indicators of the parasympathomimetic substance.

Acetylcholine as a mediator of impulses to skeletal muscles and sympathetic ganglia. Sources and indicators of the sympathomimetic substance. Production of the chemical mediators in natural conditions. The nature of chemical mediators. The theory of excitatory and inhibitory sympathins. Electrical phenomena in autonomic effectors. The excitability of autonomic effectors. The pharmacology of autonomic neuro-effector systems. The mode of action of the chemical mediators. Sensitization of autonomic effectors to the chemical mediators. References. Index.

Note: This monograph summarizes the evidence for the chemical step between the nerve impulse and the effector in the functioning of the autonomic nervous system. The conclusion based on this evidence is that when a sympathetic or parasympathetic nerve is stimulated it liberates a chemical deputy and this deputy exerts the influence on the effector cell formerly attributed directly to the nerve impulse. The authors chiefly emphasize the results of Dale and Loewi pointing to acetylcholine as the mediator or deputy in transmitting parasympathetic and motor nerve impulses, and the researches in the Harvard Medical School on sympathin as the mediator of sympathetic impulses.

ERLANGER, JOSEPH, AND HERBERT S. GASSER

Electrical signs of nervous activity. Philadelphia: University of Pennsylvania Press, 1937. 221 p. illus. 23 cm. (University of Pennsylvania. The Eldridge Reeves Johnson Foundation lectures. 1936) \$3.50. 1892a

Contents (abridged): Preface. By Joseph Erlanger: The analysis of compound action potential of nerve. The comparative physiological characteristics of nerve fibers. Some reactions of nerve fibers to electrical stimulation. By Herbert S. Gasser: Sequence of potential changes. The excitability cycle. References. Index.

Note: The third series of lectures under the auspices of the Eldridge Reeves Johnson Foundation for Research in Medical Physics. They represent the separate and individual approaches of two independent investigators, working in widely distant laboratories on the same problem.

FULTON, JOHN FARQUHAR

Physiology of the nervous system. Second edition, revised and reset. New York: Oxford University Press, 1943. 614 p. illus. 22 cm. (Outlines of physiology series. Oxford medical publications) \$9.00. 1893

Contents: The receptors. Dorsal spinal nerve roots and the dermatomes. The motor unit. Synapses and elementary reflexes. Central inhibition. The spinal cord: flexion reflex. The spinal cord: extension reflexes. The spinal cord: intersegmental reflexes. Spinal man. The medulla oblongata: decerebrate rigidity. The medulla oblongata and midbrain: postural reflexes. The pons and midbrain: optic reflexes. Autonomic nervous system. The hypothalamus: autonomic regulations. The thalamus. Cerebral cortex: architecture, intracortical connections, motor projections. Cerebral cortex: the olfactory system. Cerebral cortex: the occipital lobes and visual system. Cerebral cortex: the temporal lobes. Cerebral cortex: the parietal lobes and somatic sensation. Cerebral cortex: the motor areas and pyramidal system. Cerebral cortex: extrapyramidal and intracortical projections. Cerebral cortex: the frontal association areas. Cerebral cortex: autonomic representation. The extrapyramidal motor system: basal ganglia. The cerebellum. The nervous system as a whole: the conditioned reflex. Bibliography and author index. Subject index.

Note: The revisions in this new edition are extensive. More emphasis has been placed on material of interest to the neurologist and practitioner and particular emphasis has been put on such subjects as peripheral nerve and spinal cord injuries and consequences of injury at various levels of the cerebrospinal axis, which have practical applications to the problems of war. The bibliography has been brought up to date.

FULTON, JOHN FARQUHAR, AND ALLEN D. KELLER

The sign of Babinski; a study of the evolution of cortical dominance in primates. Springfield, Ill.: Charles C. Thomas, 1932. 165 p. illus. 26 cm. \$5.00. 1894

Contents: Babinski's original description of the pathological reflex. The monkey. The baboon. The gibbon. The chimpanzee.

The evolution of cortical dominance. Appendices: anaesthesia in primates, surgical technique, electrosurgical methods, surgical after-care. Bibliography. Index.

Note: This monograph considers the nature and clinical significance of the sign of Babinski and other pathological reflexes of the lower extremities in higher primates. The larger problem of the evolutionary background of the human nervous system is discussed; also the nature of spinal "shock" and the reflexes of the spinal animal. The monograph concludes with an appendix describing the technical problems involved in the use of monkeys and the higher apes for experimental studies on the nervous system.

GELLHORN, ERNST

Autonomic regulations, their significance for physiology, psychology and neuropsychiatry. With 80 illustrations and frontispiece. New York: Interscience Publishers, Inc., 1943. 373 p. illus. 23 cm. \$5.50. 1895

Contents: Anatomical and physiological foundations. Adjustment reactions to carbon dioxide, anoxia, asphyxia, hemorrhage, hypoglycemia. Nervous regulation of the hormones of the hypophysis. Vago-insulin and sympathetic-adrenal systems and the relation of the thyroid gland to the autonomic nervous system. Role of the parasympathetic and sympathetic systems in anoxia, hypoglycemia, and hemorrhage. Fundamental differences in the reaction of the autonomic and somatic nervous systems and their significance for adjustment reactions. Relation of the autonomic and somatic nervous system under physiological and pathological conditions and its significance for the problem of convulsions. Autonomic basis of emotion. Autonomic organization. Organismic physiology. Autonomic adjustment reactions in physiology and pathology and in general and spinal anesthesia. Autonomic nervous system and neuropsychiatry.

Note: This is a comprehensive study of the significance of the autonomic nervous system in physiology, psychology, and neuropsychiatry, in which the presentation is centered on the organism as a whole. The various chapters include a discussion of the relationship between hormones and the autonomic nervous system and of the autonomic basis of emotions. Emphasis is placed on the fact that autonomic centers differ fundamentally from the somatic centers, inasmuch as changes in the internal environment, which lead to a depression of the cerebrospinal system, are accompanied by an increased excitability of the vegetative centers. A comprehensive bibliography is included.

GELLHORN, ERNST, AND EDWARD H. LAMBERT

The vasomotor system in anoxia and asphyxia; a study of the adjustment reactions of the mammalian organism. (With 21 figures) Urbana: The University of Illinois Press, 1939. 71 p. illus. 28 cm. (Illinois medical and dental monographs. Vol. II, no. 3) \$1.50. 1896

Contents: Introduction. Methods. Results: Relation between respiratory and circulatory changes; carotid sinus reflexes in anoxia; synergism between the effects of oxygen deficiency and carbon dioxide excess on blood pressure; organization of the vasomotor center. Discussion: Mode of action of oxygen deficiency, of carbon dioxide on blood pressure; comparison of the chemical control of respiration and circulation; respiratory and circulatory adjustment to anoxia and the relationship between asphyxia and oxygen deficiency; carotid sinus reflexes in anoxia; synergistic action of carbon dioxide excess and low oxygen tension on blood pressure. Significance of the results from an organismic point of view. Summary. Bibliography.

Note: This treatise is a joint contribution from the Department of Physiology of the College of Medicine of the University of Illinois and the Psychiatric Institute of the State Department of Public Welfare. The investigation here reported was carried out in order to clarify the mechanism by which oxygen-deficient gas mixtures with and without carbon dioxide influence the central nervous system. To these investigations the authors have added a synthetic description which allows an insight into the physiologic activities of the organism as a unity. The volume is intended for physiologists, neurologists, and physicians.

JACOBSEN, CARLYLE FERDINAND, AND OTHERS
Studies of cerebral function in primates; by C. F. Jacobsen with the cooperation of J. H.

Elder and G. M. Haslerud. Baltimore: The Johns Hopkins Press, 1936. 68 p. illus. 25 cm. (Comparative psychology monographs. Vol. 13, serial no. 63, August 1936) \$1.25. 1897

Contents: The functions of the frontal association areas in monkeys, by C. F. Jacobsen. The effect of temporal lobe lesions on delayed responses in monkeys, by C. F. Jacobsen and J. H. Elder. The effect of motor and premotor area lesions on delayed response in monkeys, by C. F. Jacobsen and G. M. Haslerud.

Note: A report of a series of behavioral experiments with monkeys carried out at the Yale Laboratories of Primate Biology. Results of these experiments show: (1) Unilateral lesions caused no impairment of performance on any tests. There was no evidence of hemispherical dominance. (2) Complete bilateral lesions of the frontal association areas caused loss of ability to perform delayed responses, and subtotal lesions caused a shortening of the time through which memory was effective. Memory for simple response habits and visual discrimination habits was not impaired either with partial or complete lesion, nor was the ability to learn new tasks of a similar nature reduced. (3) Lesions in other cortical areas produced slight, if any changes.

KATZENELBOGEN, SOLOMON

The cerebrospinal fluid and its relation to the blood; a physiological and clinical study. Baltimore: The Johns Hopkins Press, 1935. 468 p. illus. 23 cm. \$5.00. 1898

Contents (abridged): The origin of the cerebrospinal fluid. The mode of formation. Circulation. The barrier between blood and cerebrospinal fluid. The distribution of chlorides between blood and cerebrospinal fluid. The sugar content and its relation to the blood sugar. The distribution of nitrogen components between the blood and the cerebrospinal fluid. Phosphorus in the cerebrospinal fluid and the blood. Magnesium in cerebrospinal fluid and blood. The concentration of potassium and sodium in blood and cerebrospinal fluid. The acid-base equilibrium between blood and cerebrospinal fluid (pH and CO₂). Cholesterol in the cerebrospinal fluid and its relation to cholesterol in the blood. Immunity processes. Examination of the function of the barrier between blood and cerebrospinal fluid. Influence of various physiological and pathological factors. Artificial alteration of the barrier permeability. Arsenotherapy. Bismuth therapy. Bibliography. Index.

Note: This reference book for neurologists, psychiatrists, and biochemists is divided into two main parts; the first three chapters deal with the cerebrospinal fluid as such, its origin, mode of formation, and circulation; the second and largest portion of the book studies more specifically the physicochemical constitution of the cerebrospinal fluid as compared to that of blood in physiological and pathological conditions. In this part, the role and composition of the cerebrospinal fluid and certain therapeutic procedures are discussed in the light of the present-day concept on the function of the barrier between blood and cerebrospinal fluid. The extensive bibliography contains about 900 references to the world literature on the subject.

McGraw, MYRTLE BYRAM

The neuromuscular maturation of the human infant. New York: Columbia University Press, 1943. 140 p. illus. 22 cm. \$2.00. 1899

Contents: Structural foundations of behavior. Neonatal behavior. Development of neuromotor activities. Some aspects of early sensory development. Individual development. Maturation and learning. Bibliography. Index.

Note: A contribution to the study of the relationship between neural structure and function, this volume comprises a summation of a series of studies which were begun more than a decade ago, under the inspiration of the pioneer work of Dr. Frederick Tilney. They are concerned primarily with sequential changes in specific functions, those functions being the motor activities common to the infant and young child. The detailed documentary descriptions of developmental change in overt behavior provides material for further study of the problem, and Dr. McGraw presents a useful and workable hypothesis in her interpretation of the material. The final chapter suggests how this study may be utilized for the improvement of pedagogical methods.

MERRITT, HIRAM HOUSTON, AND FRANK FREMONT-SMITH

The cerebrospinal fluid. With a foreword by

James B. Ayer. Philadelphia: W. B. Saunders Company, 1937. 333 p. illus. 24 cm. \$5.00. 1900

Contents: Introduction. Historical. Anatomy and physiology. Chemistry and pathologic physiology. Technic of lumbar and cistern puncture and routine examination of the fluid. Cerebrospinal fluid syndromes. Therapeutic use of lumbar puncture. Roentgenography of the ventriculosubarachnoid space, by T. J. C. von Storch. Methods, by Mary Dailey Irvine. Bibliography. Index of authors. Index of subjects.

Note: The appeal of this book is to the laboratory worker, the physician, surgeon, neurologist, syphilologist, and others. Its purpose is to present facts—to correlate recognized and well-tried tests, performed under standard and personally observed conditions. To make it soundly useful, the authors have selected innumerable cases which have come to a definite conclusion, in which the diagnoses have been proved or are apparent. They have set forth spinal fluid findings in such a way that the findings of a case under consideration can be matched with considerable accuracy. A feature of special value is the 133-page chapter on cerebrospinal syndromes, showing in detail the direct application of fluid examination in the diagnosis of over 100 disease entities. The chapter on technique of lumbar and cistern puncture includes indications, contraindications, position of patient, size and kind of needles, etc. Numerous tables are included, one of special note being of significant value in diagnostic procedure.

PAGE, IRVINE HEINLY

Chemistry of the brain. Springfield, Ill.: Charles C. Thomas, 1937. 444 p. illus. 26 cm. \$7.50. 1901

Contents: Thudichum and the genesis of brain chemistry. Sterols. Phosphatides. Fatty acid metabolism. Cerebrosides. Carbohydrates. Nitrogenous metabolism. Electrolytes and gases. Physical chemistry. Enzymes of the brain. Comparative and developmental neurochemistry. Metabolism of the central nervous system as measured by gas interchange. Pathological gaseous metabolism. Diet, vitamins, and degeneration of the nervous system. Oxidations in the brain, by J. H. Quastel. The brain and thought. Index.

Note: This book is not a mere compilation of facts concerning the chemical composition of the brain, but it treats the subject also from the broad biochemical and physiologic viewpoints. About one-third of the book is concerned with the various phases of lipid chemistry and metabolism, especially in so far as these concern nerve tissue. There are several comprehensive sections on carbohydrates and nitrogen metabolism and other phases of nerve tissue physiology. Encyclopedic in scope, the book is of greater use to readers with adequate technical training. Bibliographies and bibliographical footnotes are included.

PARKER, GEORGE HOWARD

Color changes of animals in relation to nervous activity. Philadelphia, Pa.: University of Pennsylvania Press, 1936. 74 p. illus. 23 cm. (University of Pennsylvania. Leidy memorial lectures) \$1.50. 1901a

Contents: Foreword. Preface. Introduction. The dogfish. The killifish. Neurohumors. The nervous system and chromatophores. References.

Note: This volume is a somewhat extended form of the Joseph Leidy memorial lecture in science delivered at the University of Pennsylvania March 3, 1936. In addition to the historical summaries, it consists largely of reports of studies by the author and his students on the means of activating color-cells in the higher animals and on the significance of these processes for the workings of the nervous system.

WALKER, ARTHUR EARL

The primate thalamus. Chicago: The University of Chicago Press, 1938. 321 p. illus. 23 cm. (The University of Chicago monographs in medicine) \$3.00. 1902

Contents (abridged): Historical introduction. Methods of study and experimental material. Gross and nuclear structure of the macaque thalamus. The afferent connections of the thalamus. The relation of the thalamus to the cerebral cortex. The relationship of the geniculate bodies to the cerebral cortex. The anatomical, physiological, and clinical significance of the thalamus.

Note: This book, which will interest anatomists, physiologists, neurologists, and physicians, deals with the thalamus of the rhesus monkey (*Macaca mulatta*) with enough work done on the chimpanzee to show that the results hold also for this primate and are directly applicable to man.

WILSON, FRANK NORMAN, AND OTHERS

The distribution of the currents of action and of injury displayed by heart muscle and other excitable tissues, by Frank N. Wilson, A. Garrard Macleod and Paul S. Barker. Ann Arbor: University of Michigan Press, 1933. 59 p. illus. 28 cm. (University of Michigan studies. Scientific series. Vol. x) \$1.50. 1902a

Note: The authors analyze the problem of the flow of current in a homogeneous medium with particular reference to currents of action and injury of the cardiac muscle. It is shown that the observed electrical phenomena can be simply explained on the hypothesis that the wave of excitation in the muscle is accompanied by an electrical source (positive) closely followed by a sink (negative) accompanying the wave of recovery, but inferences and experimental observations concerning it are developed in much less detail. The mathematical derivations of the equations used in the text are collected in an appendix. A bibliography concludes the volume.

Senses and Sensation

ADLER, FRANCIS HEED

Clinical physiology of the eye. New York: The Macmillan Company, 1933. 406 p. illus. (part col.) 22 cm. \$5.00. 1903

Contents (abridged): The protective mechanism of the eye. The iris and pupil. Accommodation. The lens and vitreous. Visual acuity. Visual pathways and visual fields. The objective changes in the retina due to light. The subjective characteristics of vision. Binocular vision. Entoptic and allied phenomena. The optic nerve. External ocular muscles. Aqueous humor. The intraocular pressure. Index.

Note: The lack of any book on the physiology of the eye written in the English language furnished the incentive for the writing of this volume. It is designed for use as an introduction to the subject and as a guide to the literature. The book is intended for both undergraduate and graduate students, and for practicing ophthalmologists as well. It is not an exhaustive treatise but an exposition, couched in simple terms, of the fundamental facts and generally accepted theories regarding the functioning of the eye. Methods of technique are omitted. References and additional bibliography are given at the end of each chapter.

ASSOCIATION FOR RESEARCH IN NERVOUS AND MENTAL DISEASE

Sensation: its mechanisms and disturbances; an investigation of the most recent advances; the proceedings of the Association, New York, December 27th and 28th, 1934; editorial board: Clarence A. Patten, M.D., Angus M. Frantz, M.D., and Clarence C. Hare, M.D.; with 153 illustrations and 31 tables. Baltimore: The Williams & Wilkins Company, 1935. 541 p. illus. 23 cm. \$7.50. 1904

Contents: Section I, Peripheral nerves and sensory nerve endings: Number, size and myelination of the sensory fibers in the cerebrospinal nerves, by S. W. Ranson, W. H. Droege Mueller, H. K. Davenport, and C. Risher. Conduction in nerves in relation to fiber types, by Herbert S. Gasser. Mechanism of sensory end organs, by D. W. Bronk. Methods of investigation of sensation in man and the theoretical value of results obtained, by Henry C. Bazett. An outline of the applications of certain technical advances to some problems of cutaneous innervation and sensation, by I. Maclaren Thompson. Section II, Visceral sensations: Anatomical relations of the sympathetic system to visceral sensation, by Joseph C. Hinsey. Neurological mechanism of cardio-

aortic pain, by James C. White. Visceral and referred pain, by Lewis J. Rollock and Loyal Davis. Mechanism of painful sensations, by Peter Heinbecker and George H. Bishop. Source of visceral impulses, by Charles H. Frazier, James W. Watts, and Charles A. W. Uhle. Section III, Sensory tracts and mechanisms in the cord and brain: Development of the sensory system in relation to the local sign, by G. E. Coghill and A. W. Angulo y Gonzalez. Central levels of sensory integration, by J. G. Dussier de Barenne. Cortical localization of somatic sensibility. Effect of precentral, postcentral and posterior parietal lesions upon performance of monkeys trained to discriminate weights, by Theodore C. Ruch and J. F. Fulton. A study of the sensory defects resulting from excision of cerebral substance in humans, by Joseph P. Evans. Summary of clinical and anatomical findings following lesions in the dorsal column system of macacus rhesus monkeys, by A. Ferraro and S. E. Barrera. Section IV, Clinical cases illustrating the general principles and mechanisms developed in the first three sessions: A contribution to the mechanism of intracranial pain, by Wilder Penfield. Experimental studies on headache. Observations on histamine headache, by Dean Clark, Heloise Hough, and H. G. Wolff. An experimental study of cutaneous innervation, by Lyle H. Lanier. Spontaneous pain and other subjective sensory disturbances. A clinicopathologic study, by Charles Davison and William Schick. Disturbance of the time relation to sensitivity in major trigeminal neuralgia, by F. H. Lewy and Charles H. Frazier. Index.

Note: Volume xv of the *Research publications* of this Association. This program was planned because of a realization of the lack of information regarding normal subjects, the types of errors they are apt to make in tests used in studying pathologic conditions, etc. Of interest to physiologists and neurologists, also to all persons engaged in scientific research. Bibliographies are given.

BARTLEY, SAMUEL HOWARD

Vision, a study of its basis; with an historical perspective by Edwin G. Boring. New York: D. Van Nostrand Company, Inc., 1941. 350 p. illus. 22 cm. \$3.50. 1905

Contents: Introduction. Forms of brightness discrimination. Entoptic stray light. Sense-cells and the retina. The blind spot. Repeated stimulation: flicker. Perception of movement. Adaptation phenomena. Neural interaction. Contour. The electroretinogram. The optic-nerve discharge. The cortical response. Conclusion. Name index. Subject index.

Note: This book combines a study of vision from the psychophysiological viewpoint, and a discussion of certain visio-sensory phenomena which require physiological explanations. Recent contributions of electrophysiology to an understanding of problems in the field of vision are discussed at some length, and an attempt is made to suggest to investigators in physiology the importance of the study of sensation as experience. Much of the material in the book is based on experimental work carried on in the Laboratory of Neuro-physiology at Washington University Medical School.

LUCKIESH, MATTHEW, AND FRANK K. MOSS

The science of seeing. New York: D. Van Nostrand Company, Inc., 1937. 548 p. illus. 22 cm. \$6.00. 1938 1906

Contents: Seeing. The human seeing-machine. Visual sensory processes. Visual thresholds. Visibility of objects. Physiological effects of seeing. Conservation and achievement. Light and lighting. Prescribing light. Quality of lighting. Spectral quality of light. Reading as a task. Eyesight and seeing. Index.

Note: This book presents studies of human vision made from the viewpoints of safe, certain, and efficient seeing. In the course of the studies, new methods of testing were invented and new concepts and criteria were developed. The application of the new methods, and of the data obtained by them, to practical questions is discussed. The book is of interest to educational administrators, factory managers, printers, publishers, physicians, architects, and illuminating engineers.

POLYAK, STEPHEN L.

The retina. The anatomy and the histology of the retina in man, ape, and monkey, including physiological considerations, the history of the physiological optics, and the histological laboratory technique. Chicago: University of Chicago Press, 1941. 608 p. illus. 27 cm. \$10.00. 1907

Contents: General outline of the vertebrate visual system. Part I, Methods of investigation of the retina and of the visual pathway. Part II, Historical survey of investigations of the faculty of vision, of the laws of optics, and of the structure of the eye. Part III, History of the investigations of the structure and function of the retina. Part IV, Minute structure of the retina. Part V, Structure of the retina and the visual functions. Bibliography. Index. One hundred detailed illustrations.

Note: This book is based on original research that tries to analyze the mechanisms upon which the various visual functions, such as space perception and perception of colors, depend. The author surveys all past investigations in the field, from the earliest beginnings in Greece through the Arabian and early western periods up to modern times. Includes an extensive bibliography.

SOUTHALL, JAMES POWELL COCKE

Introduction to physiological optics. New York: Oxford University Press, 1937. 426 p. illus. (part col.) 24 cm. \$5.50. 1908

Contents: The organ of vision. The optical system of the eye. Correction eye-glasses. Hyperopia, myopia, and astigmatism. Movement of the eyeball in its socket. Nature of binocular vision. Rod vision and cone vision. Color vision and colorimetry. Concerning theories of color vision. Temporal and spatial reactions of the organ of vision. Index.

Note: A general introduction to the broad science of light and vision, designed for use as a textbook in courses offered to undergraduates and to persons who are not specialists in the subject but who are desirous of obtaining knowledge of the eye and the sense of sight. The mathematics employed are not higher than

elementary geometry and algebra. Included is a discussion of ophthalmic lenses and the new science of spectacle optics. Bibliographic references are given in the body of the text.

STEVENS, STANLEY SMITH, AND HALLOWELL DAVIS

Hearing, its psychology and physiology. New York: John Wiley & Sons, Inc., 1938. 489 p. illus. 23 cm. \$4.50. 1909

Contents: The nature of the auditory stimulus. The sensitivity of the ear. Pitch. Loudness. The other attributes of tones. Auditory localization. Aural harmonics and combination-tones. Auditory masking, fatigue, and persistence. Modulation: vibrato and beats. The mechanics of the ear. Deafness and bone-conduction. Principles of neurophysiology. The microphonic action of the cochlea. Considerations as to the nature and origin of aural microphonics. The localization of frequency-reception on the basilar membrane. Auditory nerve-impulses. Nerve-impulses in response to tonal stimulation. Nerve-impulses in the higher auditory pathways. Appendixes: Formulas for modulation. Glossary. References. Index.

Note: Designed for advanced study in psychology (particularly the psychology of sensation), and physiology (particularly neurophysiology and the physiology of sense-organs), this work provides the fundamentals of the science of sound with a minimum of mathematics. The authors have endeavored to give a systematic and consistent picture of the auditory process. Three appendixes provide convenient reference to some mathematical developments of supplementary interest and a useful table for converting ratios of sound-pressure or voltage into decibels.

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BIOCHEMISTRY

General

ANDERSON, ARTHUR VON KROGH

Essentials of physiological chemistry. Second edition. New York: John Wiley & Sons, Inc., 1939. 323 p. illus. 23 cm. \$2.75. 1910

Contents: Introductory. Physical chemistry. Carbohydrates. Lipids. Proteins. Foods. Enzymes. Digestion in the mouth. Digestion in the stomach. Digestion in the intestine. Absorption. Carbohydrate metabolism. Fat metabolism. Protein metabolism. Calorimetry. Blood. Urine. Endocrine organs. Vitamins. Index.

Note: An elementary college textbook for brief courses. In this revised edition, material has been added in the sections on classification of the lipids, phospholipids, glycolipids, and sterols; the enzymes associated with oxidations and reductions; intestinal putrefaction and detoxication; carbohydrate metabolism; respiration; hormones; and vitamins. The chapter on the composition of tissues is new.

ANNUAL REVIEW OF BIOCHEMISTRY. Vol. XIII, 1944.

James Murray Luck, editor, and James H. C. Smith, associate editor. Stanford University P.O., Calif.: Annual Reviews, Inc., 1944. 795 p. 23 cm. Price, ? 1911

Contents: Biological oxidations and reductions, by D. E. Green and P. K. Stumpf. Non-oxidative enzymes, by T. Mann and C. Lutwak-Mann. The chemistry of the carbohydrates, by W. Z. Hassid. The chemistry of the lipids, by J. B. Brown. The chemistry of the proteins and amino acids, by H. Neurath and J. P. Greenstein. The chemistry and metabolism of the compounds of phosphorus, by A. A. Green and S. P. Colowick. Carbohydrate metabolism, by E. A. Evans, Jr. Fat metabolism, by R. H. Barnes and E. M. MacKay. The metabolism of proteins and amino acids, by C. P. Berg. The steroids, by F. C. Koch. The biochemistry of the nucleic acids, purines, and pyrimidines, by H. S. Loring. Mineral metabolism, by R. A. McCance and E. M. Widdowson. The chemistry of the hormones, by H. Jensen. The water-soluble vitamins, by J. C. Keresztesy. The fat-soluble vitamins, by W. C. Russell. Nutrition, by W. H. Sebrell. The nutritional deficiencies in farm mammals on natural feeds, by C. F. Muffman and C. W. Duncan. The biochemistry of malignant tissue, by D. Burk and R. J. Winzler. The alkaloids, by R. H. F. Manske. Synthetic drugs—antispasmodics, by F. F. Blicke. Photoperiodism in plants, by K. C. Hammer. Chloroplast pigments, by H. H. Strain. Mineral nutrition of plants, by F. J. Richards. Growth-regulating substances in plants, by J. van Overbeek. The biochemistry of fungi, by E. L. Tatum. Histochemistry, by D. Glick. Indexes.

Note: A collection of 26 technical papers covering the latest developments in the various fields of biochemistry and based on a critical summary of the latest available literature in the field. The present volume is the thirteenth of a series of yearly publications which attempt to review the most important contributions to the subject. The number of references listed after the various papers total close to 5,000.

BEARD, HOWARD H.

Creatine and creatinine metabolism. Brooklyn, N.Y.: Chemical Publishing Co., Inc., 1943. 376 p. illus. 22 cm. U.S., \$4.00; other countries, \$4.40. 1912

Contents (abridged): Introduction. Determination of creatine and creatinine in body tissues and fluids. Distribution of total, true, and apparent creatine in the body. Creatine-creatinine content of the blood. Formation and excretion of glycocyamine. Origin of creatine. Methylation of glycocyamine to creatine. Creatine-creatinine retention and excretion. Origin of creatinine. Biological relation between administered creatine and creatinine.

Creatinine coefficient and creatinine clearance. Creatine-creatinine metabolism and the hormones. Relation of creatine to potassium, phosphate and carbohydrate metabolism. Fuel of muscular exercise. Nutritional muscular dystrophy and creatine excretion. Metabolism in the human myopathies. Significance of the creatine content of the heart. Excretion of creatine and creatinine in various clinical conditions. Relation of amino acids, amines, and guanidine bases to tumor growth and regression. Bibliography. Author index. Subject index.

Note: This book attempts to sum up the advances made in the field of creatine and creatinine metabolism since A. Hunter's monograph on the subject appeared in 1926. The subject has been treated in its relationship to carbohydrate metabolism, muscular contraction, phosphate bond energy, phosphorylation and respiration, physical fitness, nutritional muscular dystrophy, the vitamins, and hormones with emphasis to diseases of the muscles and heart. Instructions are given for the determination of creatine and creatinine in body tissues and fluid by the newer techniques.

BLOOR, WALTER RAY

Biochemistry of the fatty acids and their compounds, the lipids. New York: Reinhold Publishing Corporation, 1943. 387 p. illus. 23 cm. (American Chemical Society monograph series. No. 93) \$6.00. 1913

Contents: General introduction. Preface. Chemistry, descriptive and analytical: Classification of the lipids. Compound lipids. Derived lipids. Physico-chemical conceptions of the lipids. Methods of examination of tissue lipids. Digestion and absorption: Nutritional availability of fats. Lipid-splitting enzymes. Fat digestion. Absorption of fats. Digestion and absorption of other lipids. Lipids of the blood: Introduction. Normal basal levels of blood lipids. Changes in the postabsorptive level produced by food. Variation in blood lipids in normal individuals. Effect of abnormal conditions on the blood lipids. Effect of the lipids of the blood on its properties. Summary. The lipids in tissue: Introduction. Data on tissue lipids. Tissue lipids in abnormal conditions. Nature and function of tissue lipids. Lipids of plants. Lipids of microorganisms. Lipid metabolism: Introduction. Physiological synthesis of the lipids. Intermediary metabolism and the role of the liver. Catabolism of the fats. Fat metabolism in the developing embryo. The vitamins in lipid metabolism. The lipids of secretions and excretions.

Note: An exhaustive critical review of the chemistry and functions of the important group of substances included in the term "fatty acids." A comprehensive bibliography of pertinent literature accompanies each chapter.

BODANSKY, MEYER

Introduction to physiological chemistry. Fourth edition. New York: John Wiley & Sons, Inc., 1938. 686 p. illus. 23 cm. \$4.00. 1914

Contents: Introduction. The carbohydrates. The fats and related compounds. The proteins. Sources and composition of food-stuffs. Chemistry of enzymes. Digestion. Absorption and intestinal residues. The blood and other body fluids, including the chemistry of respiration. Physiological oxidations. Intermediary metabolism of carbohydrates. Intermediary fat metabolism. Intermediary metabolism of protein. Excretion: the urine. Internal secretions or hormones. Animal calorimetry. Nutrition: Mineral requirements. The protein requirement in nutrition. The indispensability of fat. The role of vitamins in nutrition. The composition of milk and certain tissues. Author index. Subject index.

Note: A comprehensive textbook for college students in medicine and biochemistry. Graduate students may find it of value for its numerous bibliographical footnotes. Particular attention is given to the relationship of physiological chemistry to clinical medicine. The more important changes from earlier editions are in the treatment of enzymes and oxidation-reduction in greater detail, with separate chapters for each. Two chapters, those on the chemistry of enzymes and on physiological oxidations, were

contributed by Dr. Oscar Bodansky. A manual for use with this textbook and others is: M. Bodansky and M. Fay, *Laboratory manual of physiological chemistry*, fourth edition, New York: Wiley, 1938, 295 p., \$2.00.

BULL, HENRY BOLIVAR

The biochemistry of the lipids. New York: John Wiley & Sons, Inc., 1937. 169 p. illus. 23 cm. \$2.75. 1915

Contents: Introduction and classification. The fatty acids: The unsaturated fatty acids; the essential fatty acids; physical properties of the fatty acids. The soaps. Alcohols, waxes and hydrocarbons. The sterols and related compounds. Fats and oils: Hydrolysis; lipid analysis; chemical constants; separation and identification of individual fatty acids; natural fats and oils; hydrogenation of oils. Rancidity; drying oils; auto-oxidation. The phospholipids: Lecithinases; lecitho proteins; cephalin; sphingomyelin. Cerebrosides. Carbohydrate esters of the higher fatty acids. Emulsions: lipids and cell permeability; natural emulsions. Index.

Note: Here is a thorough discussion of the physical and organic chemistry of the fatty acids, soaps, alcohols, sterols, fats, oils, phospholipids and cerebrosides, with some mention of their biology. The treatment of the plant side of the subject is complete and constitutes a unique contribution to the literature. References are carefully chosen. Wherever possible, graphs are used in place of tables. The book has been prepared primarily for those seeking the doctor's degree in biochemistry, but it will also be of value to all students of the biological sciences as well as the pure chemists and the research workers.

BULL, HENRY BOLIVAR

Physical biochemistry. New York: John Wiley and Sons, Inc., 1943. 347 p. illus. 22 cm. \$3.75. 1916

Contents: Atoms and molecules. Energetics. Reaction kinetics. Electrostatics and dielectrics. Ions in solution. Electromotive force cells. Acids and bases. Oxidation-reduction. Electrical conductance. Electrokinetics. Surface activity. Colloidal solutions. Viscosity and the flow of liquids. Diffusion. The ultracentrifuge. Osmotic pressure. Membranes and cell penetration. Colloidal structures. Index.

Note: A book for biologists who actually intend to use physical chemistry to help in the solution of their problems. Many of the aspects of physical chemistry which enter into biological phenomena are discussed in direct application to biochemistry. An experimental viewpoint is maintained throughout the book, with many references to the literature. To summarize, the book offers a technical presentation of modern ideas on the whole subject of biochemistry with rather special emphasis upon the dynamics of electrochemical energy in living tissues.

CANTAROW, ABRAHAM

Calcium metabolism and calcium therapy. With a foreword by Hobart Amory Hare. Second edition, thoroughly revised. Philadelphia: Lea & Febiger, 1933. 252 p. illus. 20 cm. \$2.50. 1917

Contents: Part I, Normal calcium metabolism: Calcium requirement. Calcium excretion. Blood calcium. Factors involved in the maintenance of the normal serum calcium level and partition. Functions of calcium in the body. Part II, Abnormal calcium metabolism: Primary disorders of calcium metabolism. Disturbances of blood-calcium level and partition. Part III, Calcium therapy: Methods. Hypothyroidism and tetany. Non-specific calcium therapy.

Note: This book shows how to use calcium correctly and safely. The dangers which result from a disturbance of calcium metabolism are indicated, as is the physiological basis for its employment and a recognition of both the value and the limitations of calcium therapy.

CHITTENDEN, RUSSELL HENRY

The development of physiological chemistry in the United States. New York: Reinhold Publishing Corporation, 1930. 427 p. 23 cm. (American Chemical Society monograph series. No. 54) \$4.50. 1918

Note: In twelve chapters the author presents a history of the development of physiological chemistry in the United States since the establishment in 1874 of the Sheffield Laboratory at Yale University. The research carried on and the important scientific discoveries made are described by an analysis of actual work done by specific groups or individuals in laboratories all over the country. The subject matter includes such topics as: early position of biological chemistry; initial experimental work in nutrition; the oxidation-reduction systems and the composition of the brain and the blood; the tubercle bacillus; study of vitamins; and internal secretions. Critical analysis of the experimental accomplishments recorded has not been attempted.

EVERETT, MARK REUBEN

Medical biochemistry. New York: P. B. Hoeber, Inc., Medical Book Dept. of Harper & Brothers, 1942. 694 p. illus. 24 cm. \$5.75. 1919

Contents: Acid-base relations. Colloids, enzymes, and oxidation. Digestion. Lipides. Carbohydrates. Proteins. Prosthetic radicals of nucleoproteins and chromoproteins. Inorganic substances. Vitamins and avitaminoses. Hormones and endocrinoses. Addendum: Guide to biochemical literature. Indexes.

Note: A concise survey of biochemical knowledge for students of medicine and allied subjects. Includes the essential facts and data fundamental to a basic medical education while omitting controversial discussion of new theories. Each chapter is divided into separate sections which deal with chemistry, metabolism, and pathology, organized both for study by the beginner and for rapid review by the advanced student. The subject matter covers certain topics not generally found in contemporary texts, such as discussion of logarithms, vehicular function of plasma proteins, permeability of capillaries and placenta, colloid chemistry in histology, bacterial activities in the intestine, and other data. There are additional references at the end of each chapter.

GORTNER, ROSS AIKEN

Outlines of biochemistry; the organic chemistry and the physico-chemical reactions of biologically important compounds and systems. Second edition. New York: John Wiley & Sons, Inc., 1938. 1,017 p. illus. 23 cm. \$6.00. 1920

Contents: The colloidal state of matter. Proteins. Carbohydrates. Lignin and the tannins. Plant and animal pigments. The lipids and essential oils. The biocatalysts. Author index. Subject index.

Note: This book, designed for advanced students and chemists interested in biological problems, is concerned mainly with the basic facts and principles on which the science of biochemistry rests. A wide survey is given of the sciences of physical, colloid, and organic chemistry, with a thorough discussion of the physical chemistry underlying cell activity. New material in the second edition includes that on oxidation-reduction (contributed by H. B. Bull), on lignin, flavins, and hormones. L. S. Palmer contributed the chapter on vitamins.

GORTNER, ROSS AIKEN

Selected topics in colloid chemistry with especial reference to biochemical problems. Ithaca, N.Y.: Cornell University Press, 1937. 169 p. illus. 23 cm. (The George Fisher Baker Non-resident Lectureship in Chemistry at Cornell University. Vol. 16) \$2.50. 1921

Contents: Public lecture, "Scientific genealogy." The beginnings of science. What is colloid chemistry. Some basic concepts. Some fundamental properties of colloid systems. Electrokinetics. Surface tension, surface energy, interfacial tension, and molecular orientation. Adsorption. The water relationships of the biocolloids. Author index. Subject index.

Note: Based on lectures which were addressed primarily to advanced students and graduate biochemists, physiologists, and biologists. The basic phenomena characteristic of colloid systems are discussed.

HARROW, BENJAMIN

Textbook of biochemistry. Third edition, revised. Philadelphia: W. B. Saunders Company, 1943. 537 p. illus. 24 cm. \$4.00. 1922

Contents: Introduction. Carbohydrates. Lipids. Proteins. Nucleoproteins. Nucleic acid. Enzymes. Foods. Vitamins. Synthesis in the plant kingdom. Digestion. Detoxication. Absorption. Blood. Immunochemistry. Chemotherapy. Chemistry of respiration. Metabolism of carbohydrates. Metabolism of the lipids. Metabolism of proteins. Biological oxidation. Energy metabolism. Inorganic metabolism. Water. Chemistry of the tissues. Urine. Hormones. Chemistry of the nervous system. Appendix. Tabular matter on nutritive value of foods. Index.

Note: Designed for courses in biochemistry offered to medical, dental, agricultural, and general college students, this book also appeals to other workers in the field. The plan of approach is to give the student a brief outline of background material and then to present the fundamentals and the interpretation of this basic knowledge. References are given at the end of chapters. In the revision for the third edition, 16 new tables and 30 additional figures have been included. A new chapter on immunochemistry and chemotherapy has been incorporated and more emphasis has been placed on industrial, clinical, and other practical applications of biochemistry. The author and others have written *Laboratory manual of biochemistry*, second edition, Philadelphia: W. B. Saunders Company, 1944, 132 p., \$1.50, for use in conjunction with this text.

HAWK, PHILIP BOVIER, AND OTHERS

Practical physiological chemistry, by Philip B. Hawk and Olaf Bergeim in collaboration with Bernard L. Oser and Arthur G. Cole. Eleventh edition. Philadelphia: The Blakiston Company, 1937. 968 p. illus. (part col.) 24 cm. \$8.00. 1923

Contents (abridged): Some physico-chemical properties of solutions. Carbohydrates. Fats. Proteins: composition, structure, classification. Nucleic acids and nucleoproteins. Milk. Epithelial and connective tissue, teeth. Muscular tissue. Nervous tissue. Enzymes. Digestion: salivary, gastric, pancreatic, intestinal. Gastric analysis. Bile. Absorption. Putrefaction and detoxication. Feces. Blood and lymph. Blood and tissue analysis. Respiratory metabolism and neutrality regulation. Energy metabolism. Endocrine organs. Urine: characteristics; physiological and pathological constituents; sediments; calculi; quantitative analysis. Protein, carbohydrate, and fat metabolism. Inorganic metabolism. Vitamins and deficiency diseases. Appendix: Reagents and solutions; atomic weights; logarithm tables. Index.

Note: In this guide to the methods and materials in use in the modern biochemical laboratory, organic chemical reactions are systematically developed and their respective processes discussed. Modern microchemical methods are stressed. Hydrogen-ion concentration is given an important section and vitamins and methods for their assay are also treated extensively. In this edition the following chapters have been rewritten: those on vitamins and deficiency diseases, enzymes and their action, endocrine organs, protein, fat, and carbohydrate metabolism, inorganic metabolism, salivary, gastric, pancreatic, and intestinal digestion, bile, putrefaction and detoxication, blood and tissue analysis, and the section on teeth. The book is intended for biochemists and workers in biochemical laboratories.

JOHLIN, JACOB MARTIN

Introduction to physical biochemistry. With 10 illustrations. New York: Paul B. Hoeber, Inc., 1941. 231 p. illus. 24 cm. \$2.75. 1924

Contents: Introduction. The functions and composition of blood. The physical and chemical properties of water. Hemoglobin. The gas laws. The colligative properties of solutions. The characteristics of the colloidal state of matter. Chemical equilibrium and the law of mass action. Buffer systems. The properties of indicators. Oxidation-reduction potentials. The respiratory functions of blood. The acid-base balance of the blood. Oxidation-reduction systems. Appendix. Index.

Note: The material in this textbook has been selected to give the reader an understanding of the fundamental laws and processes underlying such biological phenomena as the water balance of the body, the respiratory functions of the blood, and the acid-base balance of the body. The text is concise, and the treatment is designed for advanced college students and graduate students of biology, biological chemistry, and medicine.

KOCH, FREDERICK CONRAD, AND MARTIN E. HANKE

Practical methods in biochemistry. Fourth edition, revised. Baltimore: The Williams &

Wilkins Company, 1943. 353 p. illus. 23 cm. \$2.25. 1925

Contents: Part I, Chemistry of cell constituents: Carbohydrates. Lipids. Proteins and amino acids. Nucleoproteins and nucleic acids. Hydrogen ion activity and pH. Part II, Chemistry of digestive tract: Salivary digestion. Gastric digestion. Intestinal digestion. Bile. Part III, Blood and urine: Blood and hemoglobin. Quantitative analysis of blood. Of urine. Chemical examination of urine for pathological conditions. Colorimetric methods for vitamins. Chemical tests for hormones. Appendix. Index.

Note: A laboratory manual for medical students, presenting the more important qualitative and quantitative chemical aspects of cell constituents, of cell activities, and of the composition of blood, secretions, and excretions. It contains considerable explanatory matter to help correlate theoretical and laboratory aspects of the subject. Features of the new edition are: simpler quantitative methods for a number of amino acids; treatment of the fundamental concepts of hydrogen ion activity, ionic strength, potentiometric methods for measuring pH, with specific experiments to show application; improved methods for the colorimetric estimation of amino nitrogen and cholesterol, and new chapters dealing with the colorimetric estimation of vitamins and color reactions of hormones.

MALISOFF, WILLIAM MARIAS, EDITOR

Dictionary of bio-chemistry and related subjects, editor-in-chief, William Marias Malisoff. New York: Philosophical Library, 1943. 579 p. 23 cm. \$7.50. 1926

Note: This dictionary gives the definitions of current words in the field of biochemistry and notes changes of meaning for obsolete terms. Longer signed articles explain the principal divisions of biochemistry. The methods of preparation of numerous substances with bibliographical citations are given and some therapeutic data is included.

MATTHEWS, ALBERT PRESCOTT

Principles of biochemistry. Baltimore: W. Wood & Company, 1936. 512 p. illus. 23 cm. \$2.50. 1927

Contents (abridged): Chemistry and metabolism of the glucides. Chemistry and metabolism of the lipides. Chemistry and metabolism of the proteins. The special chemistry of important tissues; blood and connective tissues. Catalytic agents of growth and development; vitamins and hormones. The income of energy. Index.

Note: A textbook for students of medicine in which the numerous facts are correlated and synthesized so that they will appear not as an inchoate assembly but as part of a great science which reveals the finer structure and coordinated chemistry of the human body. When in the process of synthesis the author has given interpretations which do not accord with those of other teachers, this is stated in the text so that the reader may have opportunity to hear more than one interpretation. There are no practical exercises in the book, since it is not a manual, and few references, because it is not a reference handbook.

MINNESOTA UNIVERSITY. MEDICAL SCHOOL

Chemistry and medicine; papers presented at the fiftieth anniversary of the founding of the Medical School of the University of Minnesota, edited by Maurice B. Visscher. Minneapolis: The University of Minnesota Press, 1940. 296 p. illus. 23 cm. \$4.50. 1927a

Contents: Part I, Progress in the application of physical chemistry to medicine: Some aspects of the colloid chemistry of membranes, by Herbert Freundlich. The performance of osmotic work in living systems, by M. B. Visscher. Some reactions by which solutes may be differentially concentrated by the kidney, by J. P. Peters. Part II, Some recent investigations in metabolism: Organic chemistry in the pursuit of vitamin research, by L. I. Smith. On the necessity of fats in the diet, by G. O. Burr. Heparin and thrombosis, by C. H. Best. Part III, Some aspects of immunity and chemotherapy: Recent chemical trends in the study of immunity, by Michael Heidelberger. The biology of animal viruses, by R. G. Green. The mode of action of sulfanilamide and its derivatives, by P. H. Long. Chemistry in urinary antisepsis, by H. F. Helmholz. Part IV, Some ap-

proaches to the nervous control of the organism: The physico-chemical approach to the mechanisms of convulsive reactivity, by Irvine McQuarrie. Methods of analysis of nervous action, by H. S. Gasser. The nervous regulation of visceral processes, by D. W. Bronk. The argument for chemical mediation of nerve impulses, by W. B. Cannon.

Note: Most of the papers in this collection are accompanied by short bibliographies.

MULDOON, HUGH CORNELIUS

A textbook of organic chemistry for students of the medical sciences. Second edition with 33 illustrations. Philadelphia: The Blakiston Company, 1936. 590 p. illus. 21 cm. \$3.00. 1928

Contents (abridged): Introductory. Ultimate qualitative analysis. Saturated, unsaturated hydrocarbons. Aliphatic halogen, oxygen derivatives. Unsaturated monohydroxy alcohols. Ethers. Aldehydes. Saturated, unsaturated monobasic acids. Acids derived from polyhydroxy alcohols. Esters. Carbohydrates. Fermentation. Aliphatic nitrogen compounds. Amino acids. Purine derivatives. Transitional compounds. Aromatic hydrocarbons, halogen compounds. Amino derivatives. Phenols. Aromatic alcohols, acids and their derivatives. Polynuclear compounds. Terpenes. Alkaloids. Coal-tar colors. Proteins. Certain biological products. Appendix. Index.

Note: This text presents material for a full year's course in organic chemistry for students beginning the subject. New material of biochemical interest dealing with hormones, vitamins, sterols, and related compounds is included in this edition.

PEARSON, WILLIAM ALEXANDER, AND JOSEPH S. HEPBURN

Physiological and clinical chemistry. Second edition, thoroughly revised. Illustrated with 46 engravings. Philadelphia: Lea & Febiger, 1938. 467 p. illus. 24 cm. \$5.50. 1929

Contents: Part I, Physiological chemistry: Physicochemical principles. Quantitative analysis. Brief survey of organic chemistry. The lipins. The carbohydrates. The proteins. Enzymes. Chemical composition of the tissues of the body. Part II, Foods and metabolism: Foods, their chemical composition and metabolism. Part III, Clinical chemistry: Salivary and gastric digestion. Intestinal digestion. The faeces. Blood. Urine. Milk. Water analysis. Index.

Note: This text is designed to give a knowledge of the essential facts of biological chemistry as a basis for study of modern physiology, bacteriology, immunology. For minute details, however, reference is given to special treatises. The laboratory experiments have been chosen with a two-fold purpose: to illustrate the chemical fact involved and at the same time fix in the mind of the student a practical laboratory method for future use. The authors were aided in the revision by colleagues at Hahnemann Medical College and Hospital of Philadelphia.

PETTIBONE, CHAUNCEY JOHN VALLETTE, AND J. F. MCCLENDON

Physiological chemistry. Sixth edition revised and enlarged. St. Louis: The C. V. Mosby Company, 1936. 454 p. illus. 22 cm. \$3.50. 1930

Contents: Part I, Introductory. Physical chemistry in its relations to physiological chemistry. Elements, inorganic salts, water. Fats, phospholipins, galactolipins, sterols. Carbohydrates. Proteins. Vitamins. Blood. Tissues. Foods. Speed of reaction. Enzymes. Digestion in the mouth, in the stomach, in the intestine. Absorption. Urine. Metabolism of proteins, fats, carbohydrates, and salts. Energy exchange. Internal secretions. Part II, Laboratory work. Volumetric and colorimetric methods and physical chemistry. The elements and inorganic salts. Fats and phospholipins. Carbohydrates. Proteins and other nitrogen compounds. International atomic weights. Glossary. References. Index.

Note: A textbook for college students covering the fundamental laws of the chemistry of the body. The metabolism of the inorganic elements is treated rather fully, as is the chemistry and metabolism of the fats, carbohydrates, and proteins. The tissues, especially blood, bone, and teeth, are chemically characterized, and those used as food are further treated. The laboratory work in Part II is intended to cover the field of the text. Volumetric and colorimetric methods are used in preference to gravimetric.

The sixth edition contains new sections on the teeth and a new treatment of physical chemistry, enzymes, energy exchange, and internal secretions, as well as many new drawings.

SAHYUN, MELVILLE, EDITOR

Outline of the amino acids and proteins. New York: Reinhold Publishing Corporation, 1944. 251 p. illus. 23 cm. \$4.00. 1931

Contents: Discovery of the amino acids, by Melville Sahyun. Proteins: occurrence, amino acid content and properties, by Carl L. A. Schmidt. Protein structure, by Henry B. Bull. Hydrolysis of proteins, by Melville Sahyun. Synthesis and isolation of certain amino acids, by Herbert E. Carter and Irving R. Hooper. Methods of analysis for amino acids and proteins, by David M. Greenberg. Relation of amino acids and their derivatives to immunity, by Michael Heidelberger. Relation of amino acids to biologically important products and the role of certain amino acids in detoxication, by Armand J. Quick. Metabolism of proteins and amino acids, by William M. Cahill. Intermediary metabolism of individual amino acids, by William M. Cahill. Nitrogen equilibrium and the biological value of protein, by William M. Cahill and Arthur H. Smith. Amino acid and proteins in nutrition, by Madelyn Womack and Charles F. Kade. Appendix. Index.

Note: A brief outline of the essentials of the chemistry and biochemistry of amino acids and proteins. Intended primarily for the use of biological science students, the volume represents the work of fourteen experts in the field. There is a bibliography at the end of each chapter and an appendix lists United States patents issued on amino acids and related organic compounds.

SALTER, WILLIAM THOMAS

The endocrine function of iodine. Cambridge, Mass.: Harvard University Press, 1940. 351 p. illus. 24 cm. (Harvard University monographs in medicine and public health. No. 1) \$3.50. 1932

Contents: Iodine balance and endocrine balance. Iodine stores in body tissues. Iodine compounds of biological importance. Circulating iodine. Thyroid activity. Endocrine balance. Iodine and the pituitary-ovarian axis. Neurological influence. Iodine balance. Radioactive iodine. Clinical problems. Appendix for laboratory workers: Estimation of iodine. Assay of thyrotropic hormone. Some properties of iodine. Bibliography. Indexes.

Note: This monograph presents material of interest to the surgeon, physiologist, pharmacologist, biochemist, the expert in nutrition, and also to the atomic physicist. Among recent developments discussed in the book, the following may be mentioned: radioactive iodine in man and animals; radioactive iodine and the new element No. 85 in studies of nutrition and goiter; the beneficial effect of iodized albumin in human myxedema; new blood iodine fractions (P, T, D, and I) in clinical thyroid disease; and recent reports on the chemical properties of thyroglobulin.

SCHMIDT, CARL LOUIS AUGUST, AND FRANK WORTHINGTON ALLEN

Fundamentals of biochemistry with laboratory experiments. New York: McGraw-Hill Book Company, Inc., 1938. 388 p. illus. 21 cm. (International chemical series, J. F. Norris, consulting editor) \$3.00. 1933

Contents: Purpose of laboratory training. General directions. Biological variation and the analysis of experimental results. Preparation of standardized solutions of acid and alkali. Hydrogen ion concentration. Neutrality regulation in the body. Enzymes. Mineral metabolism. Vitamins. The endocrines. The chemistry and metabolism of the lipids. Bile. The chemistry and metabolism of the carbohydrates. Chemistry of amino acids and proteins. The metabolism of proteins. Urine and blood analysis. Energy exchange.

Note: Designed both as a guide to lectures and as a laboratory manual, this book is divided into three parts: a discussion of the facts of biochemistry; laboratory experiments; and special experiments which may be assigned to groups of two or more students. Much controversial material has been omitted in the attempt to present the fundamentals in a straightforward manner.

STEEL, MATTHEW

Biological and clinical chemistry. Philadelphia: Lea & Febiger, 1937. 770 p. illus. 24 cm. \$8.00. 1934

Contents: Introduction. Part I, Chemistry of the organic constituents of the cell. Part II, Physical chemistry and biophysics of cells and tissues. Part III, The catalyzers of vital phenomena—enzymes, vitamins and hormones. Part IV, The circulatory system. Part V, Nutrition, metabolism and clinical chemistry. Author and subject indexes.

Note: This text blends theoretical and practical biochemistry and biophysics with chemical pathology and clinico-chemical methods. Part of the teaching technique is to have the student use himself as a clinical subject for analyses. The work is intended also for reference by practicing physicians.

WILLIAMS, ROGER JOHN

A textbook of biochemistry. Second edition. New York: D. Van Nostrand Company, Inc., 1942. 533 p. illus. 22 cm. \$4.00. 1935

Contents (abridged): Biochemical materials. Tissue composition. Food composition. Bodily mechanisms for promoting and regulating chemical change. Metabolism. Glossary of physiological and medical terms. Appendix. Index.

Note: A well organized college textbook. Noteworthy features are the comprehensive accounts of such topics as vitamins, hormones, the chemical aspects of nerve functioning, the biochemistry of embryology, and chemotherapy.

Enzymes

ADVANCES IN ENZYMOLOGY AND RELATED SUBJECTS OF BIOCHEMISTRY; edited by F. F. Nord and C. H. Werkman. Volume IV. New York: Interscience Publishers, Inc., 1944. 332 p. illus. 23 cm. \$5.50. 1936

Contents: The chemical formulation of gene structure and gene action, by Addison Gulick. Specificity, classification, and mechanism of action of the glycosidases, by William Ward Pigman. The transamination reaction, by Robert M. Herbst. Tyrosinase, by J. M. Nelson and C. R. Dawson. Gramicidin, tyrocidine, and tyrothricin, by Rollin D. Hotchkiss. Biological energy transformation and the cancer problem, by V. R. Potter. The influence of hormones on enzymatic reactions, by H. Jensen and Leon E. Tenenbaum. The absorption spectra of vitamins, hormones, and enzymes, by Wallace R. Brode. Author index. Subject index. Cumulative index, of Volumes I, II, III, and IV.

Note: This series began publication in 1941. Annually, it presents a number of papers representing important advances in enzymology and related subjects. The papers are long enough for full discussions of their topics, and they are accompanied by extensive bibliographies. The first volume had an international list of contributors including eight Americans, but in Volume IV all contributors are American.

ELVEHJEM, CONRAD ARNOLD, AND P. W. WILSON, EDITORS

Respiratory enzymes, by A. Arnold, A. E. Axelrod, C. A. Baumann [and others] of the University of Wisconsin, Madison, Wisconsin, under the direction of C. A. Elvehjem and P. W. Wilson. Minneapolis, Minn.: Burgess Publishing Company, 1939. 236 p. illus. 27 cm. Paper, \$3.25. 1936a

Contents: Preface. Historical introduction. Dehydrogenases. The oxidases, catalase, and peroxidase. Coenzymes. Carriers—cytochrome. Flavoproteins, ascorbic acid, glutathione, and adrenochrome. Inhibition of dehydrogenases and related systems. Hydrogen transport systems. Oxidation-reduction potentials and their applications. Physical chemical theory of enzyme reactions.

Note: This survey of cellular oxidation was brought together in book form as a result of a graduate seminar held in the Department of Biochemistry of the University of Wisconsin. The

primary purpose of the work is to supply a background for discussion of current literature in various phases of respiratory enzyme research. References to the literature appear at the end of each chapter.

MEYERHOF, OTTO, AND OTHERS

A symposium on respiratory enzymes. Contributors: Otto Meyerhof [and others]. Madison: The University of Wisconsin Press, 1942. 281 p. illus. 24 cm. \$3.00. 1937

Contents: Intermediate carbohydrate metabolism, by Otto Meyerhof. Oxidative mechanisms in animal tissues, by E. G. Ball. Discussion of hydrogen transport, by V. R. Potter, chairman. Pasteur effect, by Fritz Lipmann. Oxidases, peroxidases, and catalase, by K. G. Stern. Nicotinamide nucleotide enzymes, by Fritz Schlenk. The flavoproteins, by T. R. Hogness. Cytochromes, by Elmer Stotz. Phosphorylation of carbohydrates, by C. F. Cori. Discussion of phosphorylation, H. M. Kalckar, chairman. Metabolic cycles and decarboxylation, by E. A. Evans, Jr. Transamination, by P. P. Cohen. Discussion on tumor respiration, C. A. Baumann, chairman. Discussion on bacterial respiration, W. H. Peterson, chairman. Discussion of animal tissue respiration, C. A. Elvehjem, chairman.

Note: Papers delivered at the Symposium on the Respiratory Enzymes and the Biological Action of Vitamins, held in connection with the University of Chicago's fiftieth anniversary in September, 1941. The papers dealing with the biological actions of vitamins are published in a separate volume by the University of Chicago Press.

NORTHROP, JOHN HOWARD

Crystalline enzymes; the chemistry of pepsin, trypsin, and bacteriophage. New York: Columbia University Press, 1939. 176 p. illus. 23 cm. (Columbia biological series. No. XII) \$3.00. 1938

Contents: Preface. General chemistry of enzymes. Pepsin. Pepsinogen. Chymo-trypsinogen and chymo-trypsin. Trypsinogen, trypsin, and trypsin-inhibitor. Carboxypeptidase. Bacteriophage. Appendix: Preparation and crystallization of the enzymes. Literature. Index.

Note: This book contains the results of a series of investigations carried out in the author's laboratory at the Rockefeller Institute of Medical Research. Pepsin, trypsin, chymotrypsin and carboxypeptidase, as well as some of their inactive precursors, were purified and prepared as crystalline proteins. Bacteriophage was highly purified but not crystallized. Complete details for the preparation of these substances are given. Previous work on them is reviewed.

SUMNER, JAMES BATCHELLER, AND G. FRED SOMERS

Chemistry and methods of enzymes. New York: Academic Press, Inc., 1943. 365 p. illus. 23 cm. \$5.00. 1939

Contents: General properties of enzymes. Esterases. Carbohydrases. Enzymes of carbohydrate metabolism. Nucleases. Amidases. Proteolytic enzymes. Oxidizing enzymes. The iron enzymes. The copper enzymes. Dehydrogenases containing coenzymes 1 and 2. Oxidases which transfer hydrogen to cytochrome. The yellow enzymes. Nuclein desaminases. Miscellaneous oxidases. Desmolases. Hydrases and mutases. Carbohydrate metabolism.

Note: A general survey of enzyme chemistry for the research worker and advanced student, in which the author outlines the history, occurrence, action, specificity, activity measurement, activation and inactivation, properties, and preparation of most of the important enzymes. The final chapter on carbohydrate metabolism emphasizes glycolysis and alcohol fermentation, and aerobic oxidation. Extensive bibliographies are given at the end of each chapter. There are separate author and subject indexes.

TAUBER, HENRY

Enzyme chemistry. New York: John Wiley & Sons, Inc., 1937. 243 p. illus. 23 cm. \$3.00. 1940

Contents: Introduction and general considerations. Esterases. Proteolytic enzymes and peptidases. Amidases. Carbohydrases. Catalase. Oxidizing enzymes. The flavin oxidation system of

Warburg and Christian and its relation to other dyes. The zymase complex and alcoholic fermentation. Carbonic anhydrase. Luciferase. Index.

Note: A comprehensive summary of important achievements in the realm of enzyme chemistry. Special emphasis is placed on the chemical nature of enzymes, their specificity, and their mechanism of activation. The preparation of the crystalline enzymes is described in detail, as well as many other practical procedures. However, the book is in no sense a collection of laboratory tests. Experimental results, rather than theoretical considerations, are stressed. Especially in the cases of proteases and carbohydrases, certain groupings are attacked by specific enzymes and these relationships are pointed out in this book. An extensive bibliography follows each chapter. The book is designed for the use of specialists in the biological sciences, the enzyme chemist, the graduate student in biochemistry, and physicians and research workers in the field of digestion and pancreatic diseases.

TAUBER, HENRY

Enzyme technology. New York: John Wiley & Sons, Inc., 1943. 275 p. illus. 22 cm. \$3.50. 1941

Contents: Yeast production and utilization and the enzyme systems. Production of ethyl alcohol by fermentation. The role of enzymes in brewing. Mold fermentations. Bacterial fermentations. The production of enzymes and methods of their estimation. Enzymes for medicinal use. Enzymes of grains and malt and the role of enzymes in bread making. Enzymes in dairy products. Enzymes in the meat, egg, vegetable, and fruit industries. Pectin-decomposing enzymes and their use in the fruit juice, wine, and jelly industries. Vitamin-destroying enzymes. Enzymes in textile, paper, and related industries. The use of enzymes in the manufacture of leather. Enzymes in other industries. Microbiological methods for the estimation of vitamins. Author index. Subject index.

Note: A survey for physiological and biological chemists of the preparation of enzymes and their use in industry and medicine. An extensive bibliography, including the most important patents, follows each chapter.

Vitamins

BOOHER, LELA EVANGELINE, AND OTHERS

A compilation of the vitamin values of foods in relation to processing and other variants. A summary of the vitamin A, thiamin, ascorbic acid, vitamin D, and riboflavin values of foods in terms of International Units or absolute weights of these vitamins, as recorded in the literature through December, 1940. By Lela E. Booher, Eva R. Hartzler, and Elizabeth M. Hewston. Washington, D.C.: Government Printing Office, 1942. 244 p. illus. 23 cm. (United States. Department of Agriculture. Circular no. 638) \$0.25. 1942

Contents: Introduction. Explanation of the table. Table. Literature cited.

Note: This circular summarizes in tabular form the available data on the vitamin content of foods in relation to variety of plant or breed of animal, method of cultivation or feeding practice, place of production or source of material, method of cooking, processing, storage, variations in degree of maturity, and method of analysis, insofar as such information could be obtained from original published reports. The values of some recognized vitamins are not given because methods of analyses or measures of potencies were insufficiently developed at the time of publication. The table which forms the major portion of the circular gives the following for each food, including varieties and parts: description of sample, vitamin A value, thiamin (vitamin B₁), ascorbic acid (vitamin C), vitamin D, riboflavin, references.

BOOHER, LELA EVANGELINE, AND ROSEMARY LOUGHLIN MARSH

The vitamin A values of 128 foods as determined by the rat-growth method. Washington,

D.C.: Government Printing Office, 1941. 30 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 802) \$0.10. 1943

Contents: Introduction. Available methods for the measurement of vitamin A values: Colorimetric methods. Spectrophotometric methods. Biological assay methods. Method and materials used in this study. Growth response of assay rats on the vitamin-A-deficient ration plus liberal supplies of vitamin A. Method of calculating vitamin A values. Description and preparation of food samples. Experimental results. Literature cited.

Note: The introductory pages of this bulletin compare different methods of measuring vitamin A values. An eight-page statistical table gives the vitamin-A-assay values of 128 common food items. Other pages of the bulletin describe the rat-growth method by which they were assayed.

BOOHER, LELA EVANGELINE, AND EVA R. HARTZLER

The vitamin B₁ content of foods in terms of crystalline thiamin. Washington, D.C.: Government Printing Office, 1939. 20 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 707) \$0.05. 1944

Contents: Introduction. Review of recent literature. Methods used by different workers for the determination of vitamin B₁ values. Materials and method used in this study: Preparation of special ingredients used in experimental B₁-deficient ration. Selection and management of animals used in this study. Method of calculating vitamin B₁ values. Description and preparation of food samples. Experimental results: Growth rates of vitamin B₁ assay rats. Statistical analysis of results. Foods classified as sources of vitamin B₁. Literature cited.

Note: This bulletin presents the results of vitamin B₁ assays of the edible portions of 100 different common foods, including fruits, vegetables, cereals, meats, and dairy products. The vitamin B₁ contents of these foods were evaluated directly in terms of crystalline thiamin chloride hydrochloride used as a standard of reference in each assay.

BORSOOK, HENRY

Vitamins, what they are and how they can benefit you. New York: The Viking Press, 1940. 193 p. 21 cm. \$2.50. 1945

Contents: Introducing vitamins. Vitamins and more abundant health. Vitamin units. Vitamin A. The vitamin B complex, the Admirable Crichton of the vitamins. Vitamin C, the preventive of scurvy. Vitamin D, the preventive of rickets. Vitamins E, F, and K: birth, beauty, and death. Diet and dental health. Diets for children and adults. Buying vitamins. Epilogue. Appendix.

Note: A popular treatment of the subject for the layman, providing general information which can be absorbed in one reading and which may also serve as a reference for the housewife and dietitian in the planning of family meals. Diseases caused by deficiencies in the several vitamins are discussed, normal daily requirements are indicated, and tables are provided showing common sources of vitamins, a sample day's food for children and adults, restaurant menus, and vitamin content of common meats, fruits, and vegetables.

BUTT, HUGH ROLAND, AND ALBERT M. SNELL

Vitamin K. Philadelphia: W. B. Saunders Company, 1941. 172 p. illus. 22 cm. \$3.50. 1946

Contents: The antihemorrhagic vitamin. Coagulability of the blood. Products which exhibit vitamin K activity. The hemorrhagic diathesis of patients who have jaundice, biliary fistula or hepatic damage. The hemorrhagic diathesis accompanying certain intestinal disorders. The hemorrhagic diathesis of the newborn infant. Hemorrhagic diathesis not related to deficiency of prothrombin. References. Bibliographic index. Index of subjects.

Note: This monograph appeals to obstetricians, surgeons, biochemists, physiologists, and laboratory workers. It presents the knowledge necessary for proper evaluation of bleeding tendency, descriptions of technique for determination of prothrombin clotting time, and directions for interpretation of the findings. Worthy of special note is the discussion of hemorrhagic diathesis of patients who have jaundice, biliary fistula, and hepatic dam-

age, including incidence, manner of bleeding, treatment, and preoperative management. Also of interest is the series of 14 tables giving units of vitamin K in treatment, prothrombin clotting times at time hemorrhage occurred, effects of pre- and postoperative administration of vitamin K in a large number of cases of jaundice, dosage and methods of administration of compounds with vitamin K activity to pregnant women, and other useful facts.

EDDY, WALTER HOLLIS, AND GILBERT DALL-DORF

The avitaminoses; the chemical, clinical and pathological aspects of the vitamin deficiency diseases. Third edition. Baltimore: The Williams & Wilkins Company, 1944. 438 p. illus. 23 cm. \$4.50. 1947

Contents: Part one, The vitamins: Introduction. Chemical nature of the vitamins. Vitamin behavior. Vitamin requirements. The nature and function of: Vitamin A. Thiamine. Riboflavin. Niacin. Pyridoxine. The "Bios" nitrilites. Vitamin C. Vitamin D. Vitamin E. Vitamin K. Part two, The avitaminoses: Vitamins and disease. Vitamin A deficiency. Thiamine deficiency. Riboflavin deficiency. Niacin deficiency. The vitamin B complex. Vitamin C deficiency. Vitamin D deficiency. Vitamin E deficiency. Vitamin K deficiency. The vitamins and infectious diseases. Medical care of nutritional failure. Part three, Technical methods, vitamin assay and vitamin values: Vitamin assay methods. Laboratory tests useful in the diagnosis and study of the vitamin deficiency diseases. Bibliography. Appendix. Subject index.

Note: A survey of the present knowledge of the nature and function of vitamins, with the emphasis on the relationships between vitamin deficiencies and pathological conditions. The volume is intended for the general practitioner, pathologist, and others with a scientific interest in the subject. The bibliography is extensive. The vitamin content of a large number of foods is indicated in a useful table. This third edition has been re-arranged and shortened by eliminating duplication. Much material has been added.

EDDY, WALTER HOLLIS, AND GESSNER G. HAWLEY

We need vitamins. What are they? What do they do? New York: Reinhold Publishing Corporation, 1941. 102 p. illus. 19 cm. \$1.50. 1948

Contents: What are vitamins? Vitamin A. The B complex: vitamin B₁. The B complex: vitamin B₂ (riboflavin). Nicotinic acid (vitamin P-P). Pyridoxine (vitamin B₆). Pantothenic acid (filtrate factor). Other members of the B complex. Vitamin C, the antiscorvy vitamin. Vitamin D, the antirickets vitamin. Vitamin E, the fertility vitamin. Vitamin K, the coagulation vitamin. Vitamin P, citrin. Appendix. Table of vitamin content of food-stuffs.

Note: An outline of vitamins and their known functions written for the general public.

EDDY, WALTER HOLLIS

What are the vitamins? New York: Reinhold Publishing Corporation, 1941. 247 p. illus. 23 cm. \$2.50. 1949

Contents: Preface. What are the vitamins? What do the vitamins do? The properties of vitamin A. The properties of vitamin B₁ (thiamine). The functions of riboflavin (vitamin B₂ or G). The functions of nicotinic acid (vitamin P-P). The functions of vitamin B₆. The functions of other members of the B complex. The functions of vitamin C. The functions of vitamin P. The functions of vitamin D. The functions of vitamin E. The functions of vitamin K. The chemical nature of the vitamins. Table of vitamin values. Author index. Subject index.

Note: A non-clinical account of the nature, structure, and function of the vitamins. This book is intended for food and pharmaceutical chemists, biochemists, dietitians, dentists, and physicians.

EVANS, E. A., EDITOR

The biological action of vitamins, a symposium. Chicago: The University of Chicago Press, 1942. 227 p. illus. 23 cm. \$3.00. 1950

Contents: The biological action of the vitamins, by C. A. Elvehjem. Cocarboxylase, by S. Ochoa. Vitamin B₁, clinical aspects, by Norman Jolliffe. Riboflavin, by Paul György. Human riboflavin deficiency (ariboflavinosis), by W. H. Sebrell. The story of pellagra and its treatment with nicotinic acid, by D. T. Smith. Pyridoxine, by S. Lepkovsky. Pantothenic acid and the microbiological approach to the study of vitamins, by R. J. Williams. Pantothenic acid in human nutrition, by E. S. Gordon. Biotin, by Vincent du Vigneaud. Choline, by W. H. Griffith. The economy of phosphorus in the animal organism, by F. C. McLean. Vitamin K, by D. W. MacCorquodale. Vitamin K, clinical aspects, by H. P. Smith and E. D. Warner.

Note: These papers were delivered at the symposium on the respiratory enzymes and the biological action of vitamins, held in connection with the University of Chicago's fiftieth anniversary in September, 1941. Approximately one-third of the book is concerned with reports of laboratory research, and the remainder deals with the clinical aspects of human vitamin deficiencies. Of interest to the general medical practitioner, the nutritionist and food expert. The papers dealing with the respiratory enzymes are published in a separate volume by the University of Wisconsin Press.

HARRIS, ROBERT S., AND KENNETH V. THIMANN, EDITORS

Vitamins and hormones; advances in research and applications. Vol. II. New York: Academic Press, Inc., 1944. 514 p. illus. 23 cm. \$6.50. 1951

Contents: The role of vitamins in the anabolism of fats, by E. W. McHenry and Madeleine L. Cornett. The chemistry of biotin, by Donald B. Melville. The nutritional requirements of primates other than man, by Paul L. Day. Physiological action of vitamin E and its homologues, by Karl E. Mason. The chemistry and physiology of vitamin A, by I. M. Heilbron, W. E. Jones, and A. L. Bacharach. Para-aminobenzoic acid—experimental and clinical studies, by S. Ansbacher. A critique of the etiology of dental caries, by Gerald J. Cox. Vitamins and cancer, by Dean Burk and Richard J. Winzler. Effect of androgens and estrogens on birds, by A. S. Parkes and C. W. Emmens. Hormones in cancer, by E. C. Dodds. X-ray crystallography and sterol structures, by Dorothy Crowfoot. References. Indexes.

Note: The second of a series of annual publications, summarizing the latest knowledge on the vitamins and hormones, and representing both the British and American literature in this field. Each paper is largely a critical evaluation of the investigations of research workers and presents abstracts of their work based on their published writings. There are extensive bibliographies following each paper, totalling over 2,000 separate references to articles in journals and periodicals.

PATTEE, ALIDA FRANCES

Vitamins and minerals for everyone. Hazel E. Munsell, technical advisor. New York: G. P. Putnam's Sons, 1942. 242 p. illus. 21 cm. \$2.50. 1952

Contents: Foreword. Part I, Vitamins: Introduction to vitamins. Vitamin A. Vitamin B complex. Vitamin B₁ (thiamine). Vitamin G or B₂ (riboflavin). Vitamin B₆ (pyridoxine). Vitamin P-P (nicotinic acid). Filtrate factor (pantothenic acid). Vitamin C (ascorbic acid). Vitamin P (citrin). Vitamin D. Vitamin E (alpha-tocopherol). Vitamin K. Part II, Minerals: Introduction to minerals. Calcium. Phosphorus. Iron. Other minerals. Acid- and alkaline-ash foods. Part III, Appendix: Nutrients. Table of nutritive values in food. Weight-height-age table.

Note: An analysis of vitamins and minerals, telling what they are, what they do for us, and where we can get them. Daily dietary allowances of each vitamin and each mineral are presented as recommended by the Committee on Food and Nutrition of the National Research Council. Food tables are provided, showing the vitamin and mineral adequacy of a diet, for the use of the housewife in preparing menus. Vitamin concentrates are also discussed. The book is designed for both the professional dietitian and the layman. The scientific data are presented mostly in tabular form and is accompanied by a simple text.

REED, CARLOS ISAAC, AND OTHERS

Vitamin D; chemistry, physiology, pharmacology, pathology, experimental and clinical investigations by C. I. Reed, H. C. Struck, and I. E. Steck. Chicago: The University of Chicago

Press, 1939. 389 p. illus. 23 cm. (The University of Chicago monographs in medicine) \$4.50.

1953

Contents: Introduction. The chemistry of vitamin D and related compounds. The various forms of vitamin D and their relative potency. Assay methods and chemical tests for vitamin D. Vitamin D in rickets. The physiology of vitamin D. Relation of vitamin D to the parathyroid glands. The influence of vitamin D on energy metabolism. The toxic effects of vitamin D. The relation of vitamin D to resistance to infection. Effects of vitamin D on mineral metabolism. Effects of vitamin D on blood constituents. Vitamin D in the treatment of arthritis. Other therapeutic applications of vitamin D. Bibliography.

Note: A comprehensive treatment of the chemical nature, physiological action, and clinical uses of one of the most important members of the vitamin group. The volume will be of particular interest to those concerned with medicine, but the very practical data which are presented makes it of value to food technologists, chemists, veterinarians, and workers in animal husbandry. There is a 48-page bibliography.

ROSENBERG, HANS REINHARD

612.016
R-22
Chemistry and physiology of the vitamins. New York: Interscience Publishers, Inc., 1942. 674 p. illus. 23 cm. Photo-offset reprint, \$7.50.

1953a

Contents: Preface. The vitamins in general. The group of vitamins A. Vitamin B₁-thiamin. Vitamin B₂-riboflavin. Vitamin B₆-pyridoxin. Nicotinic acid-nicotinamide. Pantothenic acid. Inositol. Para-amino-benzoic acid. Vitamin C—ascorbic acid. The group of vitamins D. The group of vitamins E. Vitamin H—biotin. The group of vitamins K. Vitamin P. Non-identified vitamins. Appendix: The vitamins. Patent index. Author index. Subject index.

Note: This volume covers the whole field of vitamin chemistry and vitamin physiology. Nomenclature, historical development, and industrial methods of preparation are covered, in addition to chemistry and physiology of the different vitamins. The complete literature of the field is critically surveyed. The footnotes contain about 3000 bibliographical references. A feature of the volume is the 59-page patent index, containing lists and abstracts of patents in the vitamin field issued in the United States, Great Britain, Germany, and France.

SHERMAN, HENRY CLAPP, AND S. L. SMITH

612.016
X-22
The vitamins. Second edition. New York: Reinhold Publishing Corporation, 1931. 575 p. illus. 23 cm. (American Chemical Society monograph series) \$2.00.

1954

Contents (abridged): General introduction to the vitamin theory. Vitamin B (B₁): Antineuritic and growth-promoting functions. Chemical nature. Physiological properties and relation to nutrition and health. Quantitative determination. Physicochemical properties. Vitamin G (B₂): Differentiation from vitamin B. Concentration. Quantitative determination. Physicochemical properties. Vitamin C: Vitamin C requirements of different species. Quantitative determination. Occurrence and stability in foods. Chemical nature. Vitamin A: Physicochemical properties and progress toward isolation. Formation in nature. Measurement of vitamin A values. Occurrence in foods. Vitamin D: Antirachitic effects and relations to nutrition and health. Formation by irradiation. Chemical nature. Quantitative measurement. Food sources of vitamin D. Vitamin E: Distribution in foods. Relation to nutrition. Bibliography. Author index. Subject index.

Note: A summary of the vitamin literature down to the middle of the year 1930. The book is mainly valuable now for its long bibliography of the early literature.

WAISMAN, HARRY AARON, AND C. A. ELVEHJEM

641.12
W13v
The vitamin content of meat. Minneapolis, Minn.: Burgess Publishing Company, 1941. 210 p. 27 cm. \$3.00.

1954a

Contents: Foreword. Preface. Introduction. The nutritive value of meat. Vitamin A. Vitamin D. Vitamin E and vitamin K. Vitamin C. Preparation of the samples. Proximate analysis of the animal tissues. Thiamin (vitamin B₁). Riboflavin. Nicotinic acid. Pyridoxine (vitamin B₆). Pantothenic acid. Additional factors. Meats as a source of the vitamin B complex. Summary.

Note: A summary of the available information on the nutritive value of meat and meat products. The literature has been critically reviewed and only those results which appear to the authors to be most reliable have been included. Each of the more important nutrients has been treated, and the value of meat in supplying the daily average requirement of each has been considered.

WILLIAMS, ROBERT RUNNELS, AND TOM D. SPIES

612.39
U-27v
Vitamin B₁ (thiamin) and its use in medicine. New York: The Macmillan Company, 1938. 411 p. illus. 24 cm. (Macmillan medical monographs; G. B. Minot, editorial advisor) \$5.00.

1955

Contents: Part I, Vitamin B₁ (thiamin) in the practice of medicine: General clinical considerations. Vitamin B₁ and the polyneuritis of sundry diseases. Pathology and pathological physiology of vitamin B₁ deficiency in animals and human beings. Pharmacology of vitamin B₁. Human diets in relation to beriberi. Occidental diets. Part II, Historical and experimental: Discovery of the vitamins. Differentiation of vitamin B. Isolation of thiamin. Structure and synthesis of thiamin. Reactions, tests, and standards of thiamin. Functional groups of the thiamin molecule. Pyrimidines associated with thiamin. Thiazoles related to thiamin. Methods of assay of thiamin. Distribution of thiamin in foods. Storage and excretion. Thiamin requirement in relation to quantity of food. Thiamin requirement in relation to proportion of carbohydrate, fat and protein. Thiamin requirement in relation to weight. Thiamin requirement in relation to species. Disturbance of glycogen storage and blood sugar in thiamin deficiency. Thiamin in intermediate carbohydrate metabolism. The general role of thiamin in living things. Recapitulation. Index of names. Subject index.

Note: Because the chemical structure of vitamin B₁ is now known and its artificial synthesis achieved, the authors of this book felt that available knowledge of this important substance should be summarized. In the first portion of the book they have assembled, in concise form, the information of immediate value to the practice of medicine. Since the chief function of this vitamin seems to be the regulation of cell respiration, the most fundamental of all life processes, its role in clinical medicine can scarcely be overestimated. The second portion of the book deals with history and experimental evidence derived from laboratory work, and this material has been subjected to a critical survey with a view to selecting what is best established and to developing a consistent philosophy of the whole subject. The book is thus of interest to biochemists, biologists, and students of nutrition and plant physiology, as well as to clinicians.

BACTERIOLOGY

General

BELDING, DAVID LAWRENCE, AND OTHERS

616.96
B41A
A textbook of medical bacteriology, by David L. Belding and Alice T. Marston, in collaboration with the following members of the Department of Bacteriology, Public Health, and Preventive Medicine of Boston University School of Medicine: Sanford B. Hooker, Sidney C. Dalrymple, José P. Bill, Matthew A. Derow. New York: D. Appleton-Century Company, Incorporated, 1938. 592 p. illus. (part col.) 24 cm. \$5.00. 1942 1955a

Contents (abridged): General bacteriology: Scope. History. Classification. Morphology. Chemical composition and physical properties. Microscopical study. Cultivation. Reproduction and growth. Biological activities. Variability. Bacterial chart. Effect of physical agents. Effects of chemical agents. Medical bacteriology: Infection and resistance. Transmission of disease. Man, source of infection. Animal reservoirs of disease. Diagnosis. Animal experimentation. Pathogenic enbacteriales: Staphylococci. Streptococci. Pneumococcus. Gram-negative cocci. Anthrax. Clostridia. Hemophilic bacteria. Pasteurallae. Brucellae. Enterobacteriaceae. Shigellae. Vibrios and Spirilla. Miscellaneous bacteria. Pathogenic Actinomycetales: Actinomycetales. Diphtheric bacillus and Corynebacteria. Tubercle bacillus and other Mycobacteria. Glanders and other Actinobaccilli. Pathogenic Actinomycetaceae. Pathogenic Fungi: General considerations. Phycomycetes. Ascomycetes, order Endomycetales. Ascomycetes, order Plestascales. Fungi imperfecti. Spirochaetes: Spirochaetaeaceae. Blood Spirochaetes. Leptospirae. Treponemata of man. Viruses, Rickettsiae, bacteriophages: Ultramicroscopical viruses. Viral diseases of lower animals transmissible to man. Viral diseases transmitted by insects. Viral diseases with skin lesions. Viral diseases with catarrhal inflammation. Viral diseases with involvement of nerves. Bacteriophage. Rickettsiae. Immunity: Introduction. Isoantibodies. Inheritance of blood groups. Hetero-antibodies. Antibody-antigen reactions. Specificity. Precipitative, toxin-antitoxin reactions. Lytic reactions. Supersensitiveness. Sanitary and economic bacteriology. Air. Water. Sewage, trade wastes. Agricultural. Milk. Food. Industrial. Staining. Glossary. Index.

Note: This text for medical schools presupposes a general basic knowledge of bacteriology. Laboratory and public health aspects of the subject are both covered.

BIGGER, JOSEPH WARWICK

616.01
1348.m
Man against microbe. New York: The Macmillan Company, 1939. 304 p. illus. 20 cm. \$2.75. 1956

Contents: Prologue: Introducing the first microbiologist. The meaning of microbiology: what microbes are. Bacteria, viruses and protozoa. The tools of the microbiologist. The cultivation of microbes. How microbes are identified. What microbes do. How man acquires his microbes. The body versus the microbe. Immunity. The history of microbiology: Have microbes parents? How we learned to study microbes. Microbes as causes of disease. The spread of disease-producing microbes. The early days of immunity. How immunology became a science. Microbiology and mankind: Cui bono? Death at the table. Death in the air. Do not touch. The menace of animals. Winged death. Epilogue: Monumentum aere perennius. Glossary. Index.

Note: A résumé of microbiology—its technique, history, and importance to mankind—written for the layman. The history of man's battle with microbes is traced from the first discoveries in 1675 to the most recent developments in immunology. Emphasis is placed on the future possibilities of microbe control, when microbes will become the servants of man in the peaceful pursuits of agriculture and industry.

BIRKELAND, JORGEN MAURICE

Microbiology and man, being an account of the diverse properties and characteristics of microorganisms, a description of the various tools and techniques for their handling, and an inquiry into their subtle relationships to everyday life. Baltimore: The Williams & Wilkins Company, 1942. 478 p. illus. \$4.00. 1956a

Contents (abridged): Section I, Fundamentals of microbiology. Section II, Infection and resistance. Section III, Common infectious diseases. Section IV, Microbiology of food, milk, water, sewage, and soils. Appendix: The class Schizomycetes. Glossary. References. Index.

Note: An introductory college text in microbiology designed for the student who plans to take but one or two courses in the subject. Emphasis is placed on the methodology used to obtain information and on the inferences that can be drawn from the information obtained. The infectious diseases such as pneumonia, diphtheria, tuberculosis, leprosy, plague, syphilis, yellow fever, and cholera are described in terms of the manner of their transmission by the infectious agent. Public health aspects of food, water-supply, and sewage are also indicated.

FORD, WILLIAM WEBBER

Bacteriology. With 8 illustrations. New York: P. B. Hoeber, Inc., 1939. 207 p. illus. 17 cm. 616.01
F756
(Clio medica; a series of primers on the history of medicine. Editor: E. B. Krumbhaar. xxii) \$2.50. 1957

Contents: Early observations and theories which influenced the development of bacteriology. Development of knowledge concerning magnification. Discovery of the bacteria by Leeuwenhoek. Progress in 18th century in relation to spontaneous generation, origin of disease, and knowledge of bacteria. Progress in first part of 19th century up to Henle. Life and work of Pasteur, Lister and Tyndall. Rise of the German school of bacteriologists under Cohn. Life and work of Robert Koch. Pasteur's work on vaccination against anthrax, swine erysipelas and rabies. Bacterial toxins and antitoxins. Development of the subject of immunology. Later developments of bacteriology. Bibliography. Indexes.

Note: In presenting this history of bacteriology the author has discussed the growth of this science chronologically and has endeavored to indicate the knowledge of the subject during various epochs or periods of the world's history, thus gradually tracing its development up to the present time. Because the growth of bacteriology has been irregular and sporadic, it has been necessary also to interpret knowledge in various other fields of science and to make use of the historical development of medical thought. This has been done, within the limitations of the volume, and biographical details of important bacteriologists have been included in order to secure the proper interpretation of their work. The book is intended for the physician, the student, and the lay reader.

FRED, EDWIN BROWN, AND OTHERS

Root nodule bacteria and leguminous plants, by Edwin Brown Fred, Ira Lawrence Baldwin, and Elizabeth McCoy. Madison: The University of Wisconsin, 1932. 343 p. illus. 27 cm. (University of Wisconsin studies in science. No. 5) \$3.00. 1958

Contents: The history of the Leguminosae in agriculture. General description of the Leguminosae, their distribution and importance. The occurrence of root nodules. The isolation and study of the root nodule bacteria. The morphology and life cycle of the root nodule bacteria. Cultural and biochemical characteristics

of the root nodule bacteria. Some factors which influence the growth and longevity of the nodule bacteria. Species relationships. The formation of nodules, their histology and cytology. Relationship between leguminous plants and bacteria. Factors that influence nodule production. Economic importance of leguminous crops. Natural and artificial inoculation. Appendix: Directions for the use of artificial cultures. Inspection of artificial cultures. Methods of testing cultures of root nodule bacteria. Bibliography. Index.

Note: A complete account of the nitrifying bacteria found in the root nodules of the Leguminosae and of their importance in the raising of legumes. The last chapter deals with the inoculation of the soil with nodule-forming bacteria and the appendix contains directions for the use of artificial cultures. The bibliography is 66 pages in length. The work is intended for the practical agriculturist and agronomist as well as for the botanist, bacteriologist, and chemist. The same authors have written *Supplement to root nodule bacteria*, Madison: University of Wisconsin Press, 1939, 40 p., \$0.50.

HILL, JUSTINA HAMILTON

Germes and the man. New York: G. P. Putnam's Sons, 1940. 461 p. illus. (part col.) 22 cm. \$3.75. 1959

Contents (abridged): Part I, The enemy: Bacteriology. The wily streptococcus. The pneumococcus. The staphylococcus. The germs of tuberculosis and syphilis. The deadliest of the species. Part II, Ourselves and how we fight infection: Human patterns of cells and tissues. The skin. The mucous membranes. The phagocytes. Fluid defenses. Part III, How wounds heal: Control of hemorrhage. Repair and patchwork. Part IV, Artificial aids: Definition. Germicides. Antiseptics. Disinfectants. Part V, The use of disinfectants in ourselves: Local application of disinfectants. Drugs put into the blood stream. Drugs taken by mouth. Part VI, Onward and upward: Other methods of attack. The future. Bibliography. Index.

Note: A well-written popular survey of the relations between germs and the human body and of the methods and achievements of scientists in controlling bacteria. The account is scientifically accurate and is told in a lively style.

MOULTON, FOREST RAY, EDITOR

The genetics of pathogenic organisms. Washington, D.C.: American Association for the Advancement of Science, 1940. 90 p. illus. 26 cm. (American Association for the Advancement of Science. Publication no. 12) \$2.50. 1960

Contents: The need for research on the genetics of pathogenic organisms, by E. C. Stakman. Genetics of viruses pathogenic to animals, by E. A. Watson. Genetics of viruses pathogenic to plants, by L. O. Kunkel. Problems in the variation of pathogenic bacteria, by G. B. Reed. Influence of heredity and environment on pathogenicity in bacteria, by H. Kunst. Bacteria pathogenic on plants, by A. J. Riker. The genetics of the parasitic Protozoa, by William H. Taliaferro and Clay G. Huff. The influence of host constitution on the parasite, by Clay G. Huff. The origin of physiologic races of rust fungi through hybridization, by J. H. Craigie. The origin of physiologic races in the smut fungi by hybridization, by H. A. Rodenhiser. The origin of parasitic races of phytopathogenic fungi through mutation, by J. J. Christensen. Summary, by E. C. Stakman.

Note: These papers provide an exposition of what has been learned and what needs to be further investigated in relation to the genetics of pathogenic organisms. A list of references follows each paper.

PRESCOTT, SAMUEL CATE, AND CECIL GORDON DUNN

Industrial microbiology. New York: McGraw-Hill Book Company, Inc., 1940. 541 p. illus. 23 cm. \$5.00. 1961

Contents (abridged): Preface. Introduction. Part I, The yeasts: a study of their activities and industrial applications: The yeasts. The production of industrial alcohol by fermentation. Brewing. Wine. The distilling industries. The glycerol fermentation. Part II, The bacteria: a study of their activities and industrial applications: The bacteria. The acetone-butanol fermentation. The acetone-ethanol fermentation. The butyl alcohol-isopropyl alcohol fermentation. The production of lactic acid by fermentation. Sauerkraut. Pickles. Silage. Cheese. The propionic acid fermenta-

tion. Part III, The molds: a study of their activities and industrial applications: The molds. The citric acid fermentation. The production of lactic acid by molds. The gallic acid fermentation. Mannitol production by molds. Mold enzyme preparations: uses and products. The production of fat by molds. Part IV, Specialized activities of the molds, yeasts and bacteria: Textile microbiology. The microbiology of wood. Appendixes: Detergency, disinfection, and sterilization. The treatment and disposal of industrial microbiological wastes. Index.

Note: This text and reference book deals with the fundamentals of the utilization of yeasts, bacteria, and molds for the production of industrially important or potentially valuable products. The authors consider the organisms, methods of their cultivation, conditions of fermentation, end-products, and biochemistry of the fermentation. Bibliographic references are given under each chapter.

RAHN, OTTO

Mathematics in bacteriology. Minneapolis, Minn.: Burgess Publishing Company, 1939. 63 l. illus. 27 cm. \$1.75. 1962

Contents (abridged): Expression of mathematical formulas in curves. Unrestricted cell division: generation time, multiplication constant, etc. Growth of individual organisms. Unrestricted fermentation: fermenting capacity of the single cell, etc. Restricted multiplication. Restricted fermentation: the products curve, inhibition by accumulation of products, etc. Disinfection: death rate, effect of concentration of a disinfectant, effect of temperature, etc. Statistics in bacteriology: The probable error, estimation of cell number by dilution, probability of obtaining a pure culture by plating, etc. The use of graphs: for interpretation, interpolation, etc.

Note: The object of this textbook, the result of a series of lectures to classes in bacteriology, is to help the student acquire an understanding of the quantitative interrelationships of the various life functions of bacteria by solving problems. In the first chapter he is introduced to the use of calculus in this connection, and it is the author's hope that after studying this book the student will feel capable of reading a scientific treatise even though the subject matter is in mathematical form. Ample material has been provided for a class of students to practice formulas and equations.

RAHN, OTTO

Physiology of bacteria. With forty-two illustrations. Philadelphia: The Blakiston Company, 1932. 438 p. illus. 22 cm. \$3.00. 1962a

Contents: Endogenous catabolism. Energy supply of the cell: Physical considerations. Chemical considerations. The role of oxygen in all fermentations. The oxidation-reduction potential. The rate of fermentation. The endpoint of fermentation. Changes in type of fermentation. Growth: General considerations. Relations between growth and fermentation. The growth rate. The endpoint of growth. Mechanism of growth. Mechanism of death: Definition of a dead cell. Methods of measuring death. The logarithmic order of death. Death of dry bacteria. Death by freezing. Death by heat. Death by poisons. Death by surface tension depression. Death by light and other rays. Death through age. Death by starvation. Death by suffocation. Summary on death. Appendix. Indexes.

Note: A study of the various simple functions of life and their interrelations as manifested in the growth and decay of bacteria. By confining the discussion to the indispensable functions of the simplest forms of life, the author hopes to arouse an interest for this kind of work not only among bacteriologists but among plant and animal physiologists as well. While practically all the discussion refers to bacteria, the principles developed reach beyond the field of bacteriology and apply to biology generally. The work covers a number of unpublished experiments made by the author. A combined author index and bibliography lists about 270 works on the subject from the world literature.

Bibliography

MCCOY, ELIZABETH, AND L. S. MCCLUNG

The anaerobic bacteria and their activities in nature and disease; a subject bibliography. Berkeley: University of California Press, 1939. 2 v. 29 cm. \$10.00. 1963

— Supplement one. Literature for 1938/
39. Berkeley: University of California Press,
1941. 244 p. 28 cm. \$3.50. 1964

Contents (abridged): Volume I, Chronological author index: Instructions to users. Subject index outline, Key to abbreviations. Chronological list of all references. Volume II, Subject index: Instructions to users. Subject index outline. Subject index. List of species of anaerobic bacteria. Index.

Note: The material assembled in these three volumes consists of a subject index (approximately 125,000 entries) of about 11,000 original journal articles, monographs, or other published reports, nearly all of which have been examined in the original. The list, covering the period 1816 to 1939, is presented in two forms: first, in chronological order arranged alphabetically by senior author within each year, with complete cross-reference entries for each of the joint authors; and secondly, by subject. The latter grouping is broken down into the following main headings: habitat, culture methods, morphology, metabolism, products of metabolism, physiology, serological studies, disease relations, systematic classification, and special lists. Each of these topics in turn is further subdivided and coded, with entries arranged chronologically by author under each subject. The subject index outline greatly expedites the finding of a particular entry if author and date are not known. The Supplement follows the same general plan and may be purchased separately. There are no annotations to any of the entries.

Textbooks

ALLEN, PAUL WILLIAM, AND OTHERS

Microbes which help or destroy us, by Paul W. Allen, D. Frank Holtman, and Louise Allen McBee. With 102 text illustrations and 13 color plates. St. Louis: The C. V. Mosby Company, 1941. 540 p. illus. (part col.) 22 cm. \$3.50. 1965

Contents (abridged): Microbes and the age of science. The age of superstition. Smallpox. Surgeons and microbes. The use of disinfectants and antiseptics. Community health activities. Tuberculosis. The king of infections—pneumonia. A protected disease—syphilis. Gonorrhea. The filth disease—typhoid fever. Undulant fever. Dysenteries and diarrheas. Asiatic cholera. Diphtheria. Lockjaw or tetanus. Virus diseases. Influenza. Measles. Poliomyelitis. Rabies. Meningitis. Scarlet fever. Septic sore throat. Typhus fever. Rocky Mountain spotted fever. Leprosy. Plague. Yellow fever. Parrot fever. Whooping cough. The common cold. Mumps and chicken pox. Boils. Conjunctivitis. Arthritis. Appendicitis. Sleeping sickness. Malaria. Trench mouth. Athlete's foot. Food poisoning. Safe drinking water. Milk and milk products. Contagious abortion in cattle. Texas fever. Hog cholera. Anthrax. Infections and sanitations on fur farms. Disposal of sewage, garbage, and wastes. The bacteriophage. Bibliography. Index.

Note: An introductory textbook in bacteriology for students of first year college grade, presenting in more or less simplified form the basic facts of the relation of microbes to disease, the historical aspects of the various discoveries and experiments in the control of infections, and some of the pathological effects of bacterial action. The treatment leans somewhat to the popular form.

ALLEN, PAUL WILLIAM, AND GEORGE M. CAM-
1 RON

Microbiology laboratory manual. St. Louis:
The C. V. Mosby Company, 1940. 243 p. illus.
27 cm. \$2.00. 1966

Contents: Introduction to laboratory. Pasteur and spontaneous generation. The nature of microbes. The distribution of microbes over the earth. The roles of activities of microbes. Factors influencing growth. The morphology of bacteria. Staining. The physiology of bacteria. Diastatic action. Classification of microbes. Typhoid and dysentery in water. Bacteria in milk. Pathogenicity and resistance. Tuberculosis. Food preservation. Vinegar making and pickling. Microbiology of meat. Botulinus poisoning. Dental microbiology. Bacteriophage action. Nitrogen fixation. Sewage disposal. Infectious diseases of human beings. Diseases of animals transmissible to man. Bacterial diseases of plants. Food spoilage. Appendix.

Note: Material on each of the subjects listed above is arranged for laboratory study. The supplies needed, the procedure for instructor and for the class, tabular forms for recording of

observations, questions for further study, and bibliographic references are all given.

BUCHANAN, ESTELLE DENIS (FOGEL), AND
ROBERT EARLE BUCHANAN

Bacteriology for students in general and
household science. Fourth edition. New York:
The Macmillan Company, 1938. 548 p. illus. 22
cm. \$3.75. 1967

Contents: Introduction. Bacteriology and its beginnings. Morphology, classification, and distribution of microorganisms. Cultivation and observation of microorganisms. Physiology of microorganisms. Effects of organisms on their environment including fermentations. Microorganisms and health.

Note: A standard textbook for introductory college courses. In this edition an attempt has been made to maintain a balance between the treatment of established principles and discussions of new, experimental points of view. The student is shown that there exist many fields of microbiology which offer opportunities for further investigation. The first edition, published in 1913, was entitled *Household bacteriology*. A laboratory manual designed for use with this text is Max Levine, *An introduction to laboratory technique in bacteriology*, revised edition, The Macmillan Company, 1933, 289 p., \$1.90.

BURDON, KENNETH LIVINGSTON

Medical microbiology. New York: The Mac-
millan Company, 1939. 763 p. illus. (part col.)
22 cm. \$5.00. 1968

Contents (abridged): Fundamentals of microbiology. Laboratory study of micro-organisms. Infection and resistance. Microbiology of important infectious diseases. Appendices. Index.

Note: For medical students and students of microbiology who are planning to enter medicine or public health. This textbook emphasizes the medical applications of microbiology, presenting the fundamentals in comprehensive yet concise form. The student is introduced to all the types of micro-organisms and is oriented from the beginning in the study of microbiology as a whole. Part II gives an outline showing how the bacteriologist works in getting specimens for examination. The story of the relationship between microbes and diseases begins in Part III. Here the author surveys sources and modes of infection, and stresses the practical means of avoidance. In Part IV, there is an original grouping of bacterial diseases by region of the body affected instead of according to the theoretical classification traditionally used.

BURDON, KENNETH LIVINGSTON

A textbook of microbiology. Second edition of
"A textbook of bacteriology." New York: The
Macmillan Company, 1939. 638 p. illus. (part
col.) 22 cm. \$3.50. 1969

Contents (abridged): Fundamentals of microbiology. Laboratory study of micro-organisms. Methods of destroying micro-organisms and of controlling the spread of communicable diseases; sources and modes of infection. Infection and resistance. Microbiology of important infectious diseases. Appendices: Comparison of metric and English units of measure and Centigrade and Fahrenheit temperature scales. Formulae and methods for the preparation of common culture media, reagents, and stains. Sources of information about microbiology. Suggested laboratory exercises and demonstrations for the student nurses' courses in microbiology. Index.

Note: This book was written for use in nurses' training schools, normal schools, and in premedical courses in colleges. It offers a concise but fairly comprehensive presentation of the fundamentals of general and medical microbiology and the elementary phases of immunology and public health medicine. Throughout the book, stress has been laid on the practical applications of bacteriology in human affairs, and on the relation of bacteriological knowledge to the prevention of disease. The new features in this second edition are: a more complete description of all types of micro-organisms, introduction of the newer nomenclature, lists of the principal bacterial species, and condensation of topics not of special value to the student. In this edition, the subject matter has been rearranged in five sections, in conformance with recommendations of the Curriculum Guide for Schools of Nursing, and the text has been reset in a more readable type. Review questions are given at the end of each chapter.

FROBISHER, MARTIN

Fundamentals of bacteriology. Third edition, revised. With 326 illustrations. Philadelphia: W. B. Saunders Company, 1940. 824 p. illus. (part col.) 20 cm. \$4.00. 1970

Contents (abridged): The origin and discovery of bacteria. The place of bacteria in the organic world. How microorganisms are studied optically. Morphology and structure of bacteria. Effects of environmental factors upon bacteria. Sterilization and disinfection. Cultivation of microorganisms. Yeast and molds. Classification of bacteria. Methods of systematic study. Problems and phenomena of bacterial growth. Bacteria and disease. Relations of immunology to bacteriology. Enzymes as related to bacteriology. Bacterial metabolism. Discussions of different types of bacteria. Industrial applications of bacteriology. Index.

Note: This text is designed for elementary courses in bacteriology for pre-medical and general college students. It is planned to give the student the essential facts concerning bacteria in order to relate his knowledge of other subjects more closely to life, and to increase the practical value of his training in other fields. In preparing the third edition the author completely reorganized the material with a special view to unity and elimination of repetition. The new approach is functional. There is a new chapter on the principles of "electron microscopy" and a section on the fluorescent microscope. The material on viruses has been rewritten and expanded. There is new material on growth of bacteria, disinfection and sterilization, penicillin and gramicidin, etc. There are sixty new illustrations. Bibliographies conclude each chapter.

GREAVES, JOSEPH EAMES, AND ETHELYN O. GREAVES

Elementary bacteriology. Fourth edition, revised. Philadelphia: W. B. Saunders Company, 1940. 587 p. illus. (part col.) 20 cm. \$3.50. 1971

Contents (abridged): Bacteria; occurrence and function. Morphology. Yeasts, molds and actinomycetes. Classification. Bacterial variation. Studying bacteria; composition. Chemical activities, food requirements. Products of bacterial activity. Influence of environment and chemicals on bacteria. Carbon cycle. Nitrogen cycle. Nitrogen fixation: nonsymbiotic, symbiotic. Phosphorus and sulfur cycle. Bacteria in relation to other elements. Water. Bacteriology of sewage. Milk. Milk products. Other foods. Botulism. Food preservation. Bacteria in other arts and industries. Air. Intestinal bacteria. Bacteria as cause of disease. Immunity. Antitoxins and vaccines. Pyogenic cocci. Pneumonia. Tuberculosis. Diphtheria. Tetanus. Typhoid. Syphilis. Infections common to man and lower animals. Some insect-borne diseases. The bacteriophage. Viruses. Index.

Note: Intended for students of elementary bacteriology, this text narrates the doings of beneficial and injurious microbes, and man's struggle to obtain mastery over his microscopic friends and foes. Special attention is given to basic essentials and particular emphasis has been placed on the agricultural aspects of bacteriology. In the fourth edition there is an entirely new chapter on syphilis, a new description and classification of the common molds, and revised and enlarged chapters on the viruses, virus diseases, and bacteriophage. In addition, new material has been added to the chapters on occurrence and function of bacteria, influence of environment on bacteria, influence of chemicals on bacteria, bacteria in food, food preservation, bacteria as the cause of disease, and pneumonia. Many new illustrations have been added. Review questions are given after each chapter.

HENRICI, ARTHUR TRAUTWEIN

The biology of bacteria; an introduction to general microbiology. Second edition. Boston, New York: D. C. Heath & Company, 1939. 494 p. illus. (part col.) 23 cm. \$3.75. 1972

Contents: A brief history of bacteria. The microscope and microscopy. A survey of microbic life; the protozoa, the algae, the fungi, the bacteria, the ultramicrobes. The finer structure of bacterial cells. The growth and reproduction of bacteria. Heredity and variation in bacteria. The metabolism of bacteria. Ecology of bacteria: environmental factors. The cultivation of bacteria. Ecology of bacteria: habitats. The death of bacteria: disinfection. Infection. Immunity. Bacterial diseases of plants. Classification of bacteria. Eubacteriales: Nitrobacteriaceae, Rhizobiaceae, and Azotobacteriaceae. Eubacteriales: Acetobacteriaceae and

Pseudomonadaceae. Eubacteriales: Micrococcaceae and Neisseriaceae. Eubacteriales: Streptobacteriaceae. Eubacteriales: Parvobacteriaceae, Enterobacteriaceae and Bacteriaceae. Eubacteriales: the Bacillaceae. The actinomycetales. The molds. Yeast and yeast-like fungi. The pathogenic Protozoa. The spirochaetales. The rickettsia and virus diseases. Index.

Note: Intended for college students who will take but one course in microbiology. It has been the author's purpose to present the material as microbiology, not as agriculture or hygiene, and to stress the pure science aspects rather than the applications. Nevertheless applications are interpolated. The second edition differs from the original in deletion, restatement, or amplification of topics in almost every chapter. The nomenclature and classification have been changed to conform with the fifth edition of Bergey's *Manual*. Two new chapters have been added, dealing with the effect of environmental factors upon bacteria and with the distribution of bacteria in soil, water, milk, and the human body.

HILLIARD, CURTIS MORRISON

A textbook of bacteriology and its applications. Revised edition. Boston: Ginn and Company, 1936. 339 p. illus. (part col.) 22 cm. \$3.50. 1973

Contents: Introduction—History of microbiology. Microorganisms—molds. Yeasts. Bacteria. Classification of bacteria. Laboratory methods for study of bacteria. Nutrition and respiration of bacteria. Bacteria and physical environment. Bacteria and chemical environment. Enzymes—fermentation of carbon compounds. Fermentation of nitrogen compounds. Bacteriology of water. Bacteriology of milk. Milk products. Food preservation: drying; preservatives. Food preservation: refrigeration and canning. Mechanism of infection. Immunity. Respiratory diseases. Alimentary diseases. The public-health laboratory. Appendices: Important dates in bacteriology. Standard methods of milk analysis. Name index. Subject index.

Note: A general survey suitable for an introductory course in bacteriology. In this edition there are included discussions on the life cycle of bacteria, the process by which bacteria cause disease, bacteriophage, and the group of bacteria responsible for acute food-infection.

JORDAN, EDWIN OAKES, AND WILLIAM BULLOWS

Textbook of bacteriology. Thirteenth edition, revised. Philadelphia: W. B. Saunders Company, 1941. 731 p. illus. (part col.) 24 cm. \$6.00. 1974

Contents: History. Methods of study. Morphology, cell structure, growth and chemical composition. Effect of physical and chemical agents. Bacterial physiology. Heredity and variation. Classification. Relation of bacteria to disease. Transmission of infection. Bacteriology of water and sewage; of milk and food. Immunity—antigens, antibodies and antigen-antibody reaction. The immune state. Staphylococci. Streptococci. Pneumococci. Gram-negative pathogenic cocci: gonococcus and meningococcus. Bacterium coli; bacterium aerogenes; Friedlander's bacillus. Salmonella group. Dysentery bacilli. Brucella. Pasteurella. Hemophilic bacteria. Pseudomonas; proteus and Morgan's bacillus; bartonella, lactobacillus; non-spore-forming anaerobic bacilli; listerella. Anthrax bacillus. Clostridium. Corynebacterium. Mycobacterium. Glanders bacillus. Actinomycetes and related organisms. Cholera vibrio and related forms. Spirochetes. Yeasts. Molds. Parasitic Protozoa. Filterable virus. Virus diseases of man. Bacteriophage. Rickettsiae. Index.

Note: Bacteriology is here presented in keeping with the needs of the medical and college student requiring an advanced text. Significant is the attention given to the many applications to medicine and everyday life. References are given in the form of footnotes and 170 illustrations are included. The thirteenth edition is the result of a complete rewriting in which much old material has been deleted and replaced by more modern data. Rearrangements have been made resulting in more emphasis on the medical viewpoint. Physiological factors have been given great prominence in line with the modern trend. A new chapter has been added on transmission of disease; the section on immunity has been reorganized and expanded; the chapters on water and milk have been greatly changed, and a new approach has been adopted on "relation of bacteria to disease," including an analysis of resistance and virulence. The discussion of viruses has also been enlarged. Forty-seven of the pictures are new.

KNAYSI, GEORGES ABDALLAH

Elements of bacterial cytology. Ithaca, N.Y.:
Comstock Publishing Company, Inc., 1944. 209
p. illus. 24 cm. \$3.50. 1975

Contents: Introduction. Form and size of the bacterial cell. The cytoplasm and the nucleus. The cell-wall and slime-layer. Physico-chemical properties of the bacterial membranes. Cell division. Vacuoles and reserve material. The motion of bacteria. The spores of bacteria. Staining. Bacterial cultures. Cytology of the Actinomycetes. Cytology of the Spirochetes. Cytology of the Myxobacteria. Bibliography. Index.

Note: This new book presents a critical and comprehensive treatise on the structural make-up and microchemistry of the cells of bacteria, Actinomycetes, Spirochetes, and Myxobacteria. The author, from the experience of fifteen years of teaching and investigation, makes a special effort to avoid ambiguity of concept or expression. The literature of the subject is critically analyzed, classified, and evaluated, and much new unpublished material is included. This book can serve as a textbook on the cytology and morphology of bacteria and related microorganisms.

LEIFSON, EINAR

Bacteriology for students of medicine and
public health. New York: P. B. Hoeber, Inc.,
1942. 526 p. illus. 24 cm. \$5.00. 1976

Contents (abridged): General biology of bacteria. General aspects of bacterial invasion and host resistance. Systematic study of bacteria. Classification. Miscellaneous bacteria. Order Spirochaetales. Rickettsia and filtrable viruses. Bacteriology in relation to agriculture and industry. Biostatistics and epidemiology. Diseases of major medical importance. Fungi and Protozoa. Laboratory technique. Index.

Note: The various phases of the subject are brought together in separate sections in this textbook for the medical student so that the teacher may place as much or as little emphasis on each as he wishes. Attention is mainly directed to the fundamentals of the basic medical sciences, occasionally at the expense of some detailed practical knowledge which the author feels is less important in a survey course than a broad general knowledge of bacteriology. The general nature and physical, chemical, and biologic properties of bacteria are first discussed, followed by a study of bacterial virulence and immunity in its broader aspects. The classification of bacteria is presented in detail for reference use in laboratory work. The section on the major communicable diseases covers diagnosis, epidemiology, treatment, and control. References follow each chapter.

RICE, THURMAN BROOKS

A textbook of bacteriology. Third edition, re-
vised. Philadelphia: W. B. Saunders Company,
1942. 560 p. illus. 24 cm. \$5.00. 1980

Contents (abridged): Morphology. Means of study. Destruction. Disinfection. How bacteria cause disease. How the body resists. Classifications and various groups of bacteria. Introduction to discussion of immunity. Bacterial virulence. Toxin and antitoxin. Agglutinins and precipitins. Electrophoretic charge as related to immunologic reactions. Opsonins, phagocytosis, local immunity. Complement and amboceptor. Wassermann reactions. Hypersensitiveness. Principles of specific immunization and treatment. Bacterial flora of normal body. Appendices: Special bacteriology. Collection of samples. Rules for bacteriological nomenclature. Classification of bacteria. Regulatory devices. Medical periodicals of particular value to bacteriologists and physicians interested in bacteriology. Index.

Note: This book, for medical students and physicians, was planned to meet the expressed need of many for a shorter textbook of bacteriology which would present the essential fundamentals and their application to diagnosis, prognosis, etiology, collection of specimens, interpretation of laboratory findings, treatment, specific therapy, prophylaxis, and sanitary control. The technical processes described in detail are only those which may be done by the practicing physician. All of the drawings of organisms were made by the author and are idealized in order to emphasize salient points. All organisms are drawn to the same magnification, all gram-positive organisms are shown black, all gram-negative ones are stippled.

SALLE, ANTHONY JOSEPH

Fundamental principles of bacteriology. Sec-
ond edition. New York: McGraw-Hill Book

Company, Inc., 1948. 643 p. illus. 23 cm. \$4.00.
1981

Contents: Introduction. The microscope. Biological stains. Morphology of bacteria. Yeasts. Molds. Technique of pure cultures. Effect of environment upon bacteria. Sterilization. Disinfection and disinfectants. Nutrition of bacteria. Enzymes of bacteria. Respiration of bacteria. Decomposition and putrefaction of proteins. Fermentation of carbohydrates and related compounds. Differentiation and classification of bacteria. Dissociation of bacteria. Associations of bacteria. Bacteriology of air. Bacteriology of water. Bacteriology of milk and milk products. Bacteriology of food. Bacteriology of soil. Infection and immunity. Bacterial and virus diseases of plants. Specific infections. The history of bacteriology. Index.

Note: This college textbook is intended for courses offered primarily to students specializing or intending to do advanced work in bacteriology. The treatment of the subject is thorough. The second edition has been thoroughly revised and rewritten. Important new material has been added on the morphology of bacteria, the effect of environment on bacteria, the enzymes of bacteria, the fermentation of carbohydrates and related compounds, and other subjects. A knowledge of inorganic and organic chemistry has been assumed. This reliance upon chemical knowledge is emphasized in the second edition. Although the first edition of the book included directions for laboratory experiments, these have been removed from the second edition and made available separately under the title *Laboratory manual on Fundamental principles of bacteriology*, second edition, New York: McGraw-Hill Book Company, Inc., 1943, 184 p., \$1.50.

SCHAUB, ISABELLE (GILBERT), AND M. KATH-
LEEN FOLEY

Methods for diagnostic bacteriology; a com-
plete guide for the isolation and identification
of pathogenic bacteria for medical bacteriology
laboratories. Second edition. St. Louis: C. V.
Mosby Company, 1943. 430 p. 22 cm. \$3.50.

1981a

Contents (abridged): Part I. Bacteriological diagnosis: Procedures for cultivation of pathogenic bacteria from clinical and autopsy material. Identification of pathogenic bacteria by colony characteristics. Identification of gram-negative bacilli; gram-positive bacilli; gram-positive cocci; gram-negative cocci; antinomyces. II. Serological diagnosis: Serological identification of organisms. Serological study of patients' sera. III. Media, stains and staining technique, reagents and tests: Formulas and methods for preparing bacteriological media. Staining methods and microscopic preparations. Reagents and tests. Index.

Note: This manual of methods has been developed in the Biological Laboratory of The Johns Hopkins Hospital and the Autopsy Bacteriology Laboratory of The Johns Hopkins University School of Medicine for the use of a constantly shifting personnel composed of comparatively inexperienced workers, internes, medical students, and student technicians. The authors have endeavored to include information concerning this subject which is not to be found readily, if at all, in bacteriology textbooks. They have chosen simple methods and simple media and as a rule have confined themselves to one practical method. In this second edition a new chapter has been added, giving methods for the rapid identification of commonly occurring pathogenic bacteria by colony characteristics, methods which enable the recognition of many organisms within 24 hours. In addition, all data have been brought up to date, and new methods have been added which have been proved valuable by laboratory trial.

STEINHAUS, EDWARD ARTHUR

Catalogue of bacteria associated extracellu-
larly with insects and ticks. Minneapolis, Minn.:
Burgess Publishing Company, 1942. 206 p. 21
cm. \$2.00. 1981b

Contents: Introduction. Résumé of pertinent literature on certain relationships between extracellular bacteria and insects and ticks. Method of using catalogue. Class: Schizomycetes: Order: Actinomycetales. Order: Eubacteriales. Miscellaneous genera. Index to authors. Index to insects and ticks. Index to bacteria.

Note: This volume brings together the essential data on the extracellular bacteria of insects and closely related arthropods. It is intended for entomologists, bacteriologists, parasitologists, and others interested in the subject of the bacterial diseases of in-

sects and the bacterial diseases transmissible by insects and ticks to man, animals, and plants. The major portion of the publication is devoted to a classified description of the different genera of bacteria in the orders Actinomycetales and Eubacteriales, with notes showing the insect or insects concerned with each species and references to the literature concerning each species.

SWINGLE, DEANE BRET

General bacteriology. New York: D. Van Nostrand Company, Inc., 1940. 313 p. illus. 23 cm. \$3.00. 1982

Contents: Preface. What are microorganisms? The rise of bacteriology. The microscope in bacteriology. Morphology of bacteria. Classification of bacteria. The use of cultures. Reproduction and growth of bacteria. The nutrition of bacteria. Bacterial products. Effects of environment on bacteria. Molds and their economic significance. Yeasts and yeastlike fungi. Bacteria of the soil. Bacteria of water. Bacteria in sewage disposal. Microorganisms of the air. Bacteria of milk. Bacteria of milk products. The preservation of foods. Industrial microbiology. The mechanism of infection. Immunity and serum reactions. Pathogenic bacteria. Filterable viruses, bacteriophage, and rickettsias. Glossary. Index.

Note: An introductory college textbook of bacteriology for courses with or without laboratory work. The subject is presented as a basic biological science, starting from the fundamental facts of morphology, physiology, and classification of bacteria, and emphasizing the applications of this knowledge, rather than its use in identifying bacteria.

TANNER, FRED WILBUR

Bacteriology; a textbook of microorganisms. Third edition, revised 1938. New York: John Wiley & Sons, Inc., 1938. 510 p. illus. 23 cm. \$3.50. 1983

Contents: History and development of early theories. Systematic relationships of microorganisms. The cell. Morphology of bacteria. Chemical composition of bacteria. Nomenclature and classification of bacteria. Molds. The yeasts and related organisms. The Protozoa. Action of physical agents on bacteria. Relation of chemical agents to bacteria (disinfection). Mutual relationships among microorganisms. Nutrition of bacteria. Growth of bacteria. Bacterial enzymes. Nitrogen metabolism (cycle); sulfur metabolism (cycle). The carbon cycle. Special products of metabolism. Microorganisms in air. Water bacteriology. Sewage treatment and bacteriology. Bacteriology of milk and milk products. Industrial fermentations. Use of bacteria for the preparation of various substances. Food preparation. Illness caused by foods (food poisoning and food infection). Relation of bacteria to disease. Transmission of infecting agents. Factors influencing infection. Modes of bacterial action. Protective substances—immune bodies—antibodies. Theories of immunity. Varieties of immunity. Bacteria in plant disease. Appendix. Glossary. Index.

Note: Entirely rewritten and somewhat shortened, this introductory textbook for college students places emphasis on both non-pathogenic and pathogenic microorganisms, since the author feels that a distorted view of the field results from the frequently too heavy stress on pathogenic bacteriology in an elementary treatment. As in earlier editions, it goes rather extensively into the related subjects of botany and zoology, especially in their taxonomic aspects.

ZINSSER, HANS, AND STANHOPE BAYNE-JONES

A textbook of bacteriology; the application of bacteriology and immunology to the etiology, diagnosis, specific therapy and prevention of infectious diseases for students and practitioners of medicine and public health. Eighth edition, revised and reset. New York: D. Appleton-Century Company, Incorporated, 1939. 990 p. illus. 25 cm. \$8.00. 1984

Contents: The general biology of bacteria and the general methods of bacteriology. Infection and immunity. Pathogenic microorganisms. The rickettsia diseases. The spirochetes. Medical mycology, the molds, yeasts, actinomycetes, and pathogenic fungi. Diseases caused by ultramicroscopic viruses, the exan-

themata and diseases of uncertain etiology. Technical methods of bacteriology, immunology and serology. Index.

Note: This book for students of medicine and public health presents the fundamentals of bacteriology and immunology and the application of this knowledge to the understanding and control of infectious diseases. Material for inclusion in the book has been selected primarily from a medical point of view. A large amount of space has been devoted to the biology of bacteria and other infectious agents and to the physiology and chemistry of states of susceptibility and immunity in man and animals. The present edition includes new material in such fields as chemotherapy, improved toxins, serum therapy, ultra-microscopic viruses, and epidemiology. The material on the biology of bacteria and other infectious agents, and on the physiology and chemistry of states of susceptibility has been expanded.

Pathogenic Fungi

DODGE, CARROLL WILLIAM

Medical mycology; fungous diseases of men and other mammals. St. Louis: The C. V. Mosby Company, 1935. 900 p. illus. 26 cm. \$10.00. 1985

Contents: General morphology of fungi. Physiology, with special reference to reproduction. Culture media. Isolation of microorganisms. Microscopy, by Morris Moore. Botanical nomenclature. Phycomycetes. Ascomycetes. Endomycetales. Eremasceae. Eremasceae imperfectae. Saccharomycetaceae. Saccharomycetaceae imperfectae. Malassezia Baillon; clinical discussion of seborrhea and acne. Plectascales. Trichophytonae (Gymnoasceae imperfectae). Aspergillaceae. Fungi imperfecti—Hyphomycetes. Toruleae. Actinomycetaceae. Sporotrichiae. Chalarae.

Note: This book grew out of a course in medical mycology offered by the author and was used by his classes and research students for several years, undergoing frequent revisions, before it was published. It contains a summary of all the literature in this field to the end of 1933, references available to the author up to July 1, 1934, and work done in the author's laboratory, including previously unpublished data. Every effort has been made to make the extensive bibliographies as complete and accurate as possible, and to avoid ambiguity in the references.

LEWIS, GEORGE MORRIS, AND MARY E. HOPPER

An introduction to medical mycology. Second edition. Chicago: Year Book Publishers, Inc., 1943. 342 p. illus. (part col.) 26 cm. \$6.50. 1986

Contents: Historical review. Classification of fungi. Structure of fungi. Physiology of fungi: requirements for growth and reproduction. Methods of diagnosis of fungous disease. Immunity and cutaneous sensitization. Allergic manifestations due to fungi. Immune bodies circulating in the blood. The superficial mycoses. The deep mycoses. Fungous diseases and compensable dermatoses. Precautions against laboratory infections. The microscope. Collection of diseased tissue. Care of instruments. Care of glassware. The direct examination. Appearance of fungi on direct examination. Dubious fungous forms and artefacts. Cultural methods. Characteristics of fungi on culture. Preservation of fungous colonies. The culture mount. Microscopic characteristics of the dermatophytes. Animal inoculation. Technique of passive transfer test. Testing of fungistatic and fungicidal power of drugs and chemicals. Filtered ultraviolet radiation. The trichophytin test. Other specific skin tests. Characteristics of pathogenic fungi. Fungi probably pathogenic. Fungi questionably pathogenic. Common contaminants. Subject index. Bibliography following each chapter.

Note: This book is for general physicians who want a usable knowledge of cutaneous mycology, and for laboratory workers and students. Emphasis is placed on the recognition of the common dermatoses and their treatment, and confusing nomenclature is avoided. Every detail of equipment and technique of measures adaptable to the average medical office is given. Fifteen diagnostic steps or procedures are explained for each fungous disease discussed. Treatment is as fully covered: for dermatophytosis (athlete's foot), 24 prescriptions; for ringworm of the scalp, seven prescriptions, three epilating methods, two other procedures; for ringworm of the beard, four prescriptions, two procedures; etc. The second edition, revised throughout, includes such added features as two full-page color-plates, six additional pages of halftone plates, and seven new sub-chapters. Four hundred and sixteen illustrations on 79 plates depict the various disease conditions.

NATIONAL RESEARCH COUNCIL

Manual of clinical mycology. Philadelphia: W. B. Saunders Company, 1944. 348 p. illus. 20 cm. (Military medical manuals) \$3.50. 1986a

Contents: Actinomycosis. North American blastomycosis. Coccidioidomycosis. South American blastomycosis. Geotrichosis. Chromoblastomycosis. Cryptococcosis. Moniliasis. Histoplasmosis. Sporotrichosis. Maduromycosis. Aspergillosis. Penicilliosis. Mucormycosis. Rhinosporidiosis. Symptomatology, prognosis and treatment of the dermatomycoses. Immunology of the dermatomycoses. Mycology of the dermatomycoses. Fiedra. Trichomycosis axillaris. Tinea versicolor. Otomycosis. Erythrasma. Fundamentals of elementary mycology. Contaminants. Appendix. Index.

Note: This manual was prepared under the auspices of the Committee on Medicine of the Division of Medical Sciences of the National Research Council, Washington, D.C., in cooperation with the Surgeons General of the United States Army and Navy. It was written by Norman F. Conant, Donald Stover Martin, David Tillerson Smith, Roger Denio Baker, and Jasper Lamar Callaway, of Duke University. Its object is to present fundamental knowledge and clinical data in a simplified form that will enable the doctor without formal training in the field to diagnose and treat fungus diseases. Although primarily designed for use of medical officers of the armed forces, the material presented is of great interest to civilian doctors, bacteriologists, and others whose practice or study touches the field of mycology. Each disease is defined; its source given; the symptoms described; methods of laboratory examination given; and methods of differential diagnosis and treatment detailed. Two features of special note are (1) a chapter on fundamentals of elementary mycology in which is explained the mechanism of growth exhibited by fungi, and their nature and significance as seen under the microscope; and (2) a chapter on contaminants, based on laboratory collections gathered over a period of many years. There are 288 illustrations on 148 figures, both photographs and line drawings. From these pictures it is possible, without special knowledge, to identify contaminants simply by comparing colonies with those illustrated in the book. References follow each chapter.

SWARTZ, JACOB HYAMS

Elements of medical mycology. Introduction by Fred D. Weidman. New York: Grune & Stratton, 1943. 179 p. illus. 22 cm. \$4.50. 1987

Contents: General discussion. Diagnosis of fungus infection. Blastomycetes: yeastlike fungi. Genus *Microsporum* (Gruby, 1843). Genus *Trichophyton*. Other pathogenic fungi. Common contaminants and probable pathogens. Immune reactions. Sulfanilamide and its derivatives: effect on fungi.

Note: A basic study of the elements of pathologic and clinical investigation of diseases caused by fungous agents. Its presentation of experimental, diagnostic, and therapeutic procedures is systematically keyed to practical application. Special discussion is made of the common ringworm infections. An added feature of the volume is a large folding chart classifying the organisms by general and mycologic characteristics, and pathogenicity.

Immunity

BOYD, WILLIAM CLOUSER

Fundamentals of immunology. With 45 illustrations. New York: Interscience Publishers, Inc., 1943. 446 p. illus. 23 cm. \$5.50. 1988

Contents: Immunity and immunology. Antibodies and antibody specificity. Antigens. Cell antigens. Blood groups. Antibody-antigen reactions. Complement and complement fixation. Anaphylaxis and allergy. Allergy and immunity: bacteria: viruses, parasites. Laboratory and clinical technic.

Note: Presents an understanding of the basic principles of immunology for medical students, chemists, and biologists. The chief emphasis is on serology, but the book has an even broader scope, for methods of laboratory practice and some clinical applications are also discussed. The historical method of approach has been abandoned. By the use of two kinds of type, it is attempted to distinguish the material which the beginner can master from that which he may postpone for later study, and which the professional may find of greater interest.

BOYD, WILLIAM CLOUSER, AND OTHERS

Immunochemistry. New York: New York Academy of Sciences, 1942. 89 p. illus. 22 cm. (New York Academy of Sciences. Annals. Vol. XLIII, p. 33-122) Paper, \$1.25. 1988a

Contents: Introduction to the conference on immunochemistry, by Michael Heidelberger. Antigens of vaccinia, by Joseph E. Smadel and Theodore Shedlovsky. Purification and properties of the protein of the "M-substance" of group A haemolytic streptococcus, by Charles A. Zite and Stuart Mudd. Complement, by Enrique E. Ecker and L. Pillemer. The quantitative relationship between antigen and antibody in the precipitin reaction, by Forrest E. Kendall. Equine antihemocyanin, by Sanford B. Hooker and William C. Boyd.

Note: This series of papers is the result of a conference held by the Section of Physics and Chemistry of the New York Academy of Sciences March 28 and 29, 1942. Each of the papers has a list of references appended.

KAHN, REUBEN LEON

Tissue immunity. Springfield, Ill.: Charles C. Thomas, 1936. 707 p. illus. (part col.) 23 cm. \$7.50. 1989

Contents: Role of the tissues in immunity. Tissues in the non-immune state. Tissues in the period of incubation. Tissues in the immune state. Tissues as immunity is increased. Tissues as immunity subsides. Immunologic differences of different tissues in immunity. Tissues in the disimmune state. Phenomenon of tissue necrosis occurring in specific preexisting inflammatory foci in immunity. Tissues in natural immunity. Tissues in passive immunity. Tissues in the young. Specific tissue reaction and antigen. Specific tissue reaction and antibodies. Specific tissue reaction and non-specific factors. Immunologic effect of the specific tissue. Theoretical aspects of tissue immunity. Practical aspects of tissue immunity.

Note: This volume presents quantitative studies on tissue immunity and correlates the results of these studies with manifestations of infection and immunity noted in the clinic. New views are presented on the mechanism of infection, of immunity and allergy; on the immunologic chain of events following the injection of vaccines, serums, pollen extracts, drugs; on the clinical value and limitations of skin tests. The mechanism of skin injury and necrosis in infection, in immunity, and in allergy; on anaphylaxis, the Arthus reaction, the Schwartzman phenomenon have new light thrown thereon. Immunity is pictured as a physiologic function of all cells. Fifty-four charts and 107 tables are included.

PERLA, DAVID, AND JESSIE MARMORSTON

Natural resistance and clinical medicine. Boston: Little, Brown and Company, 1941. 1344 p. illus. 25 cm. \$6.00. 1990

Contents (abridged): Heredity and resistance. Age and resistance. Sex. Role of other endocrine glands in resistance. Humoral and cellular mechanisms. Role of the liver, body surfaces, and nervous system. Diet. Certain depressions states. Climate. Clinical aspects of resistance. Index.

Note: In this book, the older anatomical, physiological, pathological, and clinical studies on "constitution" have been correlated with the more recent hormonal and nutritional data as they affect the individual's susceptibility to the processes of disease. The various factors that determine or modify natural resistance and susceptibility are analyzed in relation to their importance in general physiology. Wherever possible, the relationship between the biochemical aspects of the subject and resistance is indicated. The clinical and experimental evidence, which has been critically evaluated, is separated from the authors' interpretations of the mechanism involved. Each chapter is summarized, and bibliographies are given at the end of chapters.

SHERWOOD, NOBLE PIERCE

Immunology. Second edition. St. Louis: The C. V. Mosby Company, 1941. 639 p. illus. (part col.) 23 cm. \$6.50. 1991

Contents: Infection and infectious agents. Host-parasite relationship. Inflammation and leucocyte response. Anatomical and physiological factors in infection and resistance of the individual. The reticulo-endothelial system. Natural and acquired immunity. Immunity mechanisms in experimental infections. Natural and

immune antibodies. Complement. Isohemagglutinins—blood groups. Nature, formation, action, and measurement of antibodies. Mechanism of antigen-antibody reactions. Cellular agglutination. Precipitins. Toxins and antitoxins. Serum reactions. Biological and antigenic specificity. Modified and conjugated antigens. Bacterial antigens and specificity. Recapitulation of chapters on specificity. The importance of antibodies in diagnosis. The basis of bacterial complement fixation technique. Complement fixation in syphilis. Precipitin tests in syphilis. Hypersensitiveness. Hypersensitiveness due to infection. The significance of allergy in tuberculosis and a few other diseases. Colloids. Index.

Note: This book is intended for medical students and others interested in the underlying principles involved in infection, resistance, and diagnostic laboratory tests. The text is intended to be supplemented by laboratory experiments. The second edition is mainly a rearrangement of chapters with new material on the reticulo-endothelial system and serum reactions. Bibliographies follow each chapter.

SHWARTZMAN, GREGORY

Phenomenon of local tissue reactivity and its immunological, pathological and clinical significance. Foreword by Jules Bordet. With 67 illustrations and one color plate. New York: P. B. Hoeber, Inc., 1937. 461 p. illus. (part col.) 24 cm. \$7.50. 1992

Contents (abridged): Introduction: Basic experiments, terminology, general considerations, etc. Phenomenon of local skin reactivity to various microorganisms. Physico-chemical properties of the active principles of the phenomenon. Their immunological behavior. Immunity to the phenomenon. Role of inflammation; optimum conditions for reproduction of the phenomenon. Methods of elicitation, and organ reactivity. Reactivity of malignant neoplasms. Reacting potency of non-bacterial substances. Nature of the active principles of the phenomenon. Immunological relationships. Immunological, pathological, and clinical significance. Application to treatment of certain human conditions. Recapitulation. Bibliography. Indexes.

Note: This monograph presents a report of extensive experimental work carried out by the author after his discovery, in September 1927, of the phenomenon of local skin reactivity to bacterial filtrates. Some of the data have already been published, but there are also unpublished observations. A review of certain previously known facts directly belonging to related fields is also included. Because of the limited scope of the book, no attempt has been made to make a thorough survey of the related litera-

ture, but a selected bibliography is given. The book is intended for specialists in immunology and related fields, and also for clinicians in general.

ZINSSER, HANS, AND OTHERS

Immunity; principles and application in medicine and public health. An exposition of the biological phenomena of infection and recovery of the animal body from infectious disease, with consideration of the application of the principles of immunity to diagnosis, treatment, and prophylaxis and their usefulness in the control of epidemics, by Hans Zinsser, John F. Enders, and LeRoy D. Fothergill. Fifth edition of "Resistance to infectious diseases." New York: The Macmillan Company, 1939. 801 p. illus. 24 cm. \$7.00. 1993

Contents: Infection and virulence. Antigens. Toxins. The basis of immunity. Antigen-antibody reactions. Nature of antibodies. Toxin-antitoxin reactions. Bactericidal properties of blood serum; sensitization; alexin. Further facts about alexin. Agglutination and precipitation. Iso-antibodies and the blood groups. Phenomena of phagocytes and the intracellular destruction of living organisms. Hypersensitiveness; general principles; classification; in man. Immunity in ultra-microscopic virus diseases; rickettsia diseases; protozoan infections. Immunity in syphilis and tuberculosis. Diphtheria. Tetanus and other anaerobic infections. Scarlet fever. Other hemolytic streptococcal infections. Staphylococcal infections. Meningitis. Pneumonia. Typhoid fever and other acute enteric infections. Whooping cough. Applied immunology in some other bacterial diseases and in snake-bite. Applied immunology in some virus diseases. Applied immunology in some other virus diseases. Index.

Note: An exposition of the biological phenomena of infection and recovery of the animal body from infectious disease, with consideration of the application of the principles of immunity to diagnosis, treatment, and prophylaxis and their usefulness in the control of epidemics. The fundamental nature of many recent discoveries in the science of immunity, especially in the chemical definition of antigens and antibodies, and the progress in the field of hypersensitivity have necessitated complete revision and reorganization in this edition. The book is intended for laboratory workers and public health workers as well as general practitioners of medicine.

MEDICINE

General

CUSHING, HARVEY WILLIAMS

A bio-bibliography of Andreas Vesalius. New York: Schuman's, 1943. 229 p. illus. 26 cm. (Yale University. School of Medicine. Yale Medical Library. Historical Library. Publication no. 6) \$15.00. 1994

Contents: Preface, by John F. Fulton. List of illustrations. Key to library abbreviations. Introduction. The paraphrase of the ninth book of Rhazes. The 'Tabulae sex' and plagiaries. Guenther's "Institutiones anatomicae." The venesection epistle. Contributions to the "Opera Galeni." The "Fabrica" and its sequelae. The China-root epistle and the aftermath of the "Fabrica." The "Consilia." Fallopius and Vesalius. Vesaliana. Index of recorded copies. Chronology of editions. Index of names.

Note: This volume, begun by Dr. Cushing and completed by John F. Fulton and his associates after Cushing's death in 1939, lists not only the works of Vesalius and material relating to him, but also the writings of his copyists and followers. Each of Vesalius's known works is described in detail, and numerous excerpts and reproductions of title pages and plates are included.

CUSHING, HARVEY WILLIAMS

Consecratio medici, and other papers. Boston: Little, Brown and Company, 1940. 276 p. illus. 21 cm. \$2.50. 1994a

Contents: Consecratio medici. Dr. Garth, the Kit-Kat poet. Realignments in greater medicine. With the British Medical Corps in France. William Osler, the man. The personality of a hospital. The physician and the surgeon. Louisa Parsons and her medals. The "Boston Tins". The clinical teacher and the medical curriculum. The Western Reserve and its medical traditions. Experimentum periculosum; iudicium difficile. The doctor and his books. Emancipators.

Note: These 14 essays were originally published in 1928 when Dr. Cushing was Surgeon-in-Chief of the Peter Bent Brigham Hospital in Boston, and were reissued in 1940 as a companion piece of *The Medical career and other papers*.

CUSHING, HARVEY WILLIAMS

The medical career, and other papers. Boston: Little, Brown and Co., 1940. 302 p. illus. 21 cm. \$2.50. 1995

Contents: Preface. Part I, The medical career: The medical career. From tallow-dip to television. Medicine at the crossroads. The humanizing of science. The pioneer medical schools of central New York. The binding influence of a library on a subdividing profession. Psychiatrists, neurologists, and the neurosurgeon. Part II, Biographical sketches: The doctors Welch of Norfolk. William Beaumont's rendezvous with fame. William Stewart Halsted, 1852-1922. James Ford Rhodes, 1848-1927. George Strong Derby, 1875-1931. Perry Williams Harvey, 1869-1932. Haller and his native town. William Thomas Councilman, 1854-1933. The Mayo brothers and their clinic.

Note: A collection of essays on various aspects of medicine including biographical appreciations of noted doctors. All of the papers, except those dealing with Haller, Halsted, and Rhodes, originally appeared between 1928 and the author's death in 1931. The book is designed to serve as a companion volume to his *Consecratio medici*, Boston, 1928.

GLASSER, OTTO, EDITOR

Medical physics. Chicago: Year Book Publishers, Inc., 1944. 1744 p. illus. 27 cm. \$18.00. 1996

Note: The most notable results obtained in the field of the application of quantitative methods to biologic processes are compiled in this volume, to which 245 American scientists have contributed articles. The purpose of the book is to analyze the effects of physical agents on living tissues, interpret vital processes by physical laws, and to show how the latter apply to various therapeutic and diagnostic procedures and the instruments employed in them. The articles occur in alphabetic sequence as in an encyclopedia. In addition to the customary table of contents there are classified tables correlating the articles useful to various scientific groups; for example, anatomy, bacteriology, biometrics, etc. The book is intended for use as a textbook and as reference material for those interested in medical physics.

GREGG, ALAN

The furtherance of medical research. New Haven: Yale University Press, 1941. 129 p. 21 cm. (The Terry lectures) \$2.00. 1997

Contents: Preface. Medical research described. Universities and foundations. The medical research worker. Appendixes: Outline docket item. Outline for presenting a proposal for a capital grant for building an institute.

Note: The author tells what medical research is, what the universities and foundations have done and should do about it, and of the kind of man who works at the frontiers of the unknown. He candidly discusses some of the shortcomings of the institutions and their methods, and the obstacles they encounter in doing their work properly.

HAM, ARTHUR WORTH, AND M. D. SALTER

Doctor in the making; the art of being a medical student. Illustrations by Jean McConnell. Philadelphia: J. B. Lippincott Company, 1943. 179 p. illus. 20 cm. \$2.00. 1998

Contents: Part I, Motivation and equipment: You and the medical course. Part II, Enemies of success and how to defeat them: A fifth column in your mind. Thinking that the important things come later. The time-swindler. Organizing your knowledge. Memory versus understanding. Forgetting. Your child-self. Allocation of time. Understanding and applying the scientific method. Part III, Responsibilities of a medical student: Do's and don'ts for the student.

Note: This book embodies the recommendations of a committee appointed several years ago at the University of Toronto to investigate the causes of failure on the part of certain first-year medical students whose past scholastic records and success in aptitude tests had foreshadowed better things. Habits of study, attitudes, general personality characteristics were among the factors found to be of considerable importance in determining whether a student with good preparation and mental equipment would achieve success. It was found, too, that only a mind skilled at learning can deal satisfactorily with the steady stream of information with which the medical student of today must cope. This book is designed to aid the medical student in acquiring this skill. The book is written in a popular style and is illustrated with humorous sketches.

HANDY, EDWARD SMITH CRAIGHILL, AND OTHERS

Outline of Hawaiian physical therapeutics, by E. S. Craighill Handy, Mary Kawena Pukui, and Katherine Livermore. Honolulu, Hawaii: Bernice P. Bishop Museum, 1934. 51 p. 25 cm. (Bernice P. Bishop Museum. Bulletin 126) \$1.00. 1998a

Contents (abridged): Hawaiian medicine today. Psychic aspects of disease and cure. Physical treatment: Reproduction; pediatrics; diagnosis; physical therapy; pharmaceuticals; preparation of remedies; diet; pani. Pathology. Anatomical and physiological terms. Plants used medicinally, compiled by Marie C. Neal. Animal substances, minerals, used medicinally. Bibliography. Form for records.

Note: This is a report of a study of Hawaiian medicine commenced in 1930-31, partly as a phase of a program of research into little-explored aspects of Hawaiian culture which are still flourishing, and partly because of an interest in the reactions of native peoples to foreign influences. The paper offers a résumé of the principles and practices of the physical aspects of Hawaiian healing. Most of the information has been obtained from Hawaiians living in all the islands. In addition the descriptive material and recipes for compound remedies contained in a number of collections of manuscripts written in the past century and now in the library of the Bishop Museum—the Kalakaua, Liliuokalani, Kalanianaʻole, Poepoe, and other papers—have been drawn upon. The psychic aspects of Hawaiian medicine will form the subject of a later publication.

HARLEY, GEORGE WAY

Native African medicine; with special reference to its practice in the Mano tribe of Liberia. Cambridge, Mass.: Harvard University Press, 1941. 294 p. illus. 24 cm. \$3.50. 1999

Contents: The Mano people. Medicine in general, or man's control of hidden power. Medicine distinguished from religion. The Mano conception of disease. Rational treatment of disease. Magical treatment of disease. Treatment of disease partly rational, partly magical. Treatment of snakebite. The Ba Konga, a society for the treatment of snakebite. Medicine in the Poro. Medicine in certain other secret societies. Black magic and poison. Divination. Special medicines and sacred objects. Summary and conclusion. Native practice in Africa as a whole. Appendix. Bibliography. Botanical list of medicinal plants. Index.

Note: Written by a practitioner of tropical medicine with over twenty years of experience in West Africa, this monograph presents the results of original studies and research in the native methods of treating disease as practiced by the Mano tribesmen. The author shows that while the African native has stumbled upon many valuable plant remedies over a great period of time, he does not think of them as drugs in a scientific way but as mysterious substances which only the medicine man knows how to control. Witchcraft, sorcery, and poison are described at length, and there is a detailed discussion of various diseases, classified anatomically, with their African equivalent and the method of treatment practiced by the Mano natives. There is a long bibliography and also quoted excerpts from some of the literature of the field.

THE HARVEY CUSHING COLLECTION OF BOOKS AND MANUSCRIPTS. New York: Schuman's, 1943. 207 p. 28 cm. (Yale University. School of Medicine. Yale Medical Library. Historical Library. Publication no. 1) \$8.50. 1999a

Contents: Preface. Introduction. List of abbreviations. Manuscripts. Orientalia. Incunabula. General works. Cushing memorabilia.

Note: A short-title catalogue, compiled by Margaret Brinton and Henrietta T. Perkins, listing all the printed books, manuscripts, and bound memorabilia belonging to Dr. Cushing, and turned over to Yale University at the time of his death.

HUME, EDWARD HICKS

The Chinese way in medicine. Baltimore: The Johns Hopkins Press, 1940. 189 p. illus. 20 cm. (Institute of the History of Medicine, The Johns Hopkins University. Publications. 3rd series: The Hideyo Noguchi lectures, Vol. iv) \$2.25. 1999b

Contents: The universe and man in Chinese medicine. The founders and chief exemplars of Chinese medicine. Some distinctive contributions of Chinese medicine. References. Index.

Note: These lectures are directed to students of history and general readers, as well as to physicians. The relation of early Chinese ideas about the universe and man's relation to it is shown to have influenced the development and form of Chinese medical theories and practices. Distinctive Chinese contributions

to medicine are discussed under the headings: medical libraries and monographs, medicaments, physical therapy, and diagnostic methods.

MCQUARRIE, IRVINE

The experiments of nature, and other essays. Delivered at the University of Kansas School of Medicine. Lawrence, Kansas: University Extension Division, University of Kansas, 1944. 115 p. illus. 22 cm. \$1.00. 2000

Contents: The "experiments of nature" and the advancement of medical knowledge. Diseases of the adrenal glands in children. Impressions of medical conditions in besieged China.

Note: These lectures are of interest to medical students and practitioners of medicine. Each one is accompanied by a selected list of references.

MEDICO-SURGICAL TRIBUTES TO HAROLD BRUNN; a series of essays on various aspects of surgery and medicine written by his pupils and friends. Berkeley: University of California Press, 1942. 571 p. illus. (part col.) 24 cm. \$6.00. 2001

Contents: Foreword, by Robert Gordon Sproul. Preface, by Langley L. Porter. Use of cancellous bone grafts in orthopedic surgery, by LeRoy C. Abbott and Gerald G. Cill. Minor problems in low sigmoidal cancer, by Fred W. Bailey. Tumor of the heart (left ventricular wall) successfully removed by operation, by Claude S. Beck. Pylephlebitis following gangrenous appendicitis (report of a case, with recovery), by H. Glenn Bell. A discussion of some phases of gallbladder surgery, by Ralph B. Nettman and Gemma M. Lichtenstein. Experimental demonstration of the inactivation of certain sex steroid androgens and estrogens *in vivo*, by Gerson R. Haskind. Dupuytren's contracture; its treatment by means of radical excision of the palmar fascia, by Harry M. Blackfield. The endocutaneous (Eloesser) flap; its application in various types of intrathoracic lesions, by Abraham L. Brown. Clinical indications for gastroscopy, by Allan L. Cohn. Allergic manifestations in surgical practice, by Elliott C. Cutler and George Austen, Jr. The management of the less operable carcinomatous growths of the colon, by Sir Hugh Devine. Surgical treatment of persistently patent ductus arteriosus, by Frank S. Dolley and John C. Jones. An operation for the treatment of apical tuberculous cavities persisting in an artificial pneumothorax, by Leo Eloesser. Builders in medicine, by Morris Fishbein. Experiences in medical practice, by Walter Scott Franklin. The question of therapy in subacute bacterial endocarditis with particular reference to pathogenesis, by Meyer Friedman. Epidemiology of tuberculosis in San Francisco, past, present and future, by J. C. Geiger and Ethel D. Owen. Carcinoma of the lung of long duration, by Alfred Goldman. Postoperative cholangiography, by Leon Goldman. Recurrent inguinal hernia in relation to the length of the inguinal ligament, by Franklin I. Harris. Relationship of cell growth, wound healing and food, by Samuel C. Harvey. Renal counterbalance, by Frank Hinman. Experimental observations on the use of drugs of the sulfonamide group in the pleural space, by Edward M. Kent and Everts A. Okham. Scar tissue tumors simulating regional recurrences after radical mastectomy, by Alson R. Kilgore. Completely intrathoracic goiter, by Frank H. Lahey. Small bowel distention; differential diagnosis of mechanical obstruction and paralytic ileus by means of X-ray examination, by Joseph Levitin. Acute cholecystitis, by Clayton G. Lyon. Inflammation, a mechanism in bodily defense, by Valy Menkin. Differential pathological diagnosis of the forms of acute cholecystitis, by Stanley H. Mentzer. Disposition of rodents as a factor in the epidemiology of plague, by Karl F. Meyer. Surgery of the orbit, by Howard G. Naffziger. Circumscribed carcinoma of the lung; eradication by lesser procedures than pneumonectomy, by Harold Neuhof. Extrapleural pneumothorax, by Edward J. O'Brien, William M. Tuttle and J. C. Day. Hematogenous dissemination of tubercle bacilli in primary and reinfection forms of tuberculosis, by George G. Ornstein. Peripheral embolism; with a report of two cases successfully treated by femoral embolectomy, by Felix L. Pearl. Mechanism of vascular spasm in Raynaud's syndrome, by Myron Prinzmetal. Modern management of cancer of the lower gastrointestinal tract, by Fred W. Rankin. The acute surgical abdomen, by George K. Rhodes. An instrument for retraction of viscera during peritoneoscopy, by Samuel Robinson. Metallic magnesium tubes in reconstruction of bile ducts (a preliminary report), by Eugene W. Rockey. Patency of the interauricular septum, by Harold Rosenblum. Factors influencing the choice of operation for carcinoma of the rectum, by Charles T. Rosson, Jr. An apparent causal mechanism of primary thrombosis of the axillary

and subclavian vein, by John J. Sampson. Observations on the development of the genito-urinary tract, illustrated by a case of peno-scrotal transposition with absence of the trigonum vesicae and other anomalies, by John B. DeC. M. Saunders, Glanville Y. Rusk and Bernard Lawenstein, with a clinical summary by Morris H. Silverberg. Report of a case of cavernous angioma of the lung, by Norman S. Stenstone. Pneumothorax versus apical thoracoplasty, by Sidney J. Shipman. Intraleural injection of thorium dioxide sol (a roentgenological study), by J. J. Singer. Pulmonary hemorrhage associated with endothelioma of the lung and pleura (a report of two cases), by H. Brodie Stephens. Pulmonary tuberculosis. Follow-up study of results of treatment, with special reference to collapse therapy, by Harold Guyon Trimble. Carcinoma of the breast, by Hugh H. Trout. Cause and prevention of stomal obstruction in gastrojejunal anastomoses (gastric resection and gastrojejunostomy), by Owen H. Wangenstein. Decrease in cellular cathepsins in experimental tuberculosis of rabbits, by Charles Weiss. The published writings of Harold Brunn. Index of authors.

Note: A volume of essays presented to Dr. Brunn by his friends and patients, together with his students and associates at the University of California Medical School, as a token of their appreciation and esteem.

NEW YORK ACADEMY OF MEDICINE

The march of medicine, edited by the Committee on Lectures to the Laity of the New York Academy of Medicine. New York: Columbia University Press, 1943. 151 p. 21 cm. (New York Academy of Medicine lectures to the laity. No. viii) \$2.00. 2002

Contents: Foreword, by Arthur F. Chace. Introduction, by Malcolm Goodridge. Crime and punishment, by Bernard G. Heck. The scientific method and our plans for peace, by Sir Norman Angell. War and medicine, by Edgar Erskine Hume. Aggressiveness—individual and collective, by Franz Alexander. Let babies be our teachers, by Myrtle B. McGraw. Nature and man, the Linsly R. Williams memorial lecture, by Robert R. Williams. Index.

Note: The latest in a series, published at approximately yearly intervals, containing the text of the Laity lectures given each season at the New York Academy of Medicine, the purpose of which is to admit the public behind the scenes and to reveal to them the medical mind, and at the same time to cultivate an understanding of the purposes for which men devote their lives to scientific experiment and inquiry. Intended for the general practitioner as well as the intelligent layman. Other titles in the series from its beginning in 1936 are as follows: *Medicine and mankind*, 1936; *Milestones in medicine*, 1938; *Landmarks in medicine*, 1939. With the publication of the fourth volume the series title was standardized as *The March of medicine*.

PEARL, RAYMOND

Introduction to medical biometry and statistics. Third edition, revised and enlarged. Philadelphia: W. B. Saunders Company, 1940. 537 p. illus. 24 cm. \$7.00. 2003

Contents: Preliminary definitions and orientation. Historical landmarks. Raw data of biostatistics. Tabular presentation of data. Original scientific records and their translation to tabular form. Graphic representation of statistical data. Rates and ratios. Life tables. Standardized and corrected death-rates. Sampling error concept. Elementary theory of probability. Some special theorems in probability. Measurement of variation and correlation. Simple curve fitting. The logistic curve. Appendices: Aids to biometric workers. Mathematical constants. Tables for estimating significance of deviations. Table of areas and ordinates of normal curve. Table of sums of logarithms of the natural numbers from 1 to 100. Reed-Merrell tables for abridged life table construction. Tables for probable errors of differences between means. Correction factors for standard and probable errors of means and standard deviations of small samples. Table for ascertaining elapsed time in years and decimals of a year between any two dates. A table of \sqrt{pq} for computing errors of simple sampling. Index.

Note: This book was written especially for the medical reader and the illustrations of method are mainly chosen from that field. Effort has been made to present the mathematical matters necessarily involved in a language and with a logical method of approach which is not only capable of being understood by the primarily biologic or medical reader, but to which persons of

this type of mind and training are sympathetic. The aim has been to present a simple exposition of the basic elements of the subject rather than an exhaustive treatise, and to supply after each chapter selected references to which the reader may turn should he be sufficiently interested in pursuing the study in a more advanced manner. In revising the book for the third edition, the author rewrote many parts, deleted obsolete data and added more recent facts as required. An additional chapter on measurement variation was added and a number of new illustrations and tables included.

REGAN, LOUIS JOHN

Medical malpractice. St. Louis: The C. V. Mosby Company, 1943. 256 p. illus. 25 cm. \$5.00. 2004

Contents: Malpractice or negligence. Physician and patient. Special rights to be respected. Liability for act of another. Hospitals. Expert witnesses. Expert testimony. When physician is liable. Evidence and proof. Miscellaneous. The dentist and malpractice. Physician's office nurse and malpractice. Forms. Malpractice vulnerability, self-test. Malpractice prophylaxis: frequent allegations in malpractice suits; case and comment; medical defense. Conclusion. Table of cases cited. Other citations and references.

Note: The author, who is a member of the state bar of California, believes that little relief from the increasingly serious problem of malpractice claims and suits can be expected from legislative action. He feels that any real improvement must come through education of the medical profession and the public, and has written this book with a double purpose: to aid the patient in realizing what he may reasonably seek and expect from medical authority, and to help the physician inform himself of his legal obligations to his patient and learn the ways in which he may safeguard himself against unjustified malpractice claims. It is the factor of prevention which in the author's opinion is especially important but is usually neglected by the medical profession.

ROYSTER, HUBERT ASHLEY

Medical morals and manners. Chapel Hill, N.C.: The University of North Carolina Press, 1937. 333 p. 22 cm. \$2.50. 2005

Contents (abridged): Medical morals and manners. Women and the doctor. Types of modern doctors. The dignity of medicine. Athletics and scholarships. Muscle. Physical standards for women. Physical morality. Surgical sense. Surgical vision. The philosophy of surgery. The humanity of surgery. The surgeon's heritage and outlook. The influence of tradition in surgery. Surgery and the general practitioner. Reflections on forty years of surgery. Facts all should know about appendicitis. Surgical service in the State Hospital for the Insane, North Carolina. The hospital manner. The ideal nurse. James Marion Sims. Budd of Chatham. Edmund Strudwick. Occasions and publications of papers.

Note: A collection of papers and addresses on the general philosophy and background of surgical practice, intended for the general reader as well as for members of the profession. Some of the material was written before 1930. A list of the author's published works is given.

SAPHIR, OTTO

Autopsy diagnosis and technique; a manual for medical students, practitioners, pathologists and coroners' physicians. Foreword by Ludvig Hektoen. New York: P. B. Hoeber, Inc., 1937. 342 p. illus. 19 cm. \$5.00. 2006

Contents: The autopsy permit. General technical considerations. Sudden death. External examination: examination of the serous cavities and breast; removal of organs. Examination of the internal organs and tissues. Male genitourinary tract. Rectum. Female genitalia. Neck organs and oral cavity. Esophagus, larynx, trachea and bronchi. Chest organs. Gastrointestinal tract. Gall bladder and bile ducts. Liver. Pancreas. Spleen. Skull, meninges, brain, hypophysis and pineal body. Spinal cord. Peripheral nerves. Skeletal and muscle systems. Blood dyscrasias. Weights and measurements of organs. Index.

Note: Intended to meet the need for an outline of autopsy technique and diagnosis of organs and structures as seen at post-mortem. It gives detailed directions for ascertaining the cause of death on the basis of demonstrable anatomical changes.

SHATTUCK, GEORGE CHEEVER

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A medical survey of the republic of Guatemala. With the collaboration of Joseph C. Bequaert, Margaret M. Hilferty, Jack H. Sandground [and] Samuel Drury Clark. Washington, D.C.: Carnegie Institution of Washington, 1938. 253 p. illus. 29 cm. (Carnegie Institution of Washington. Publication no. 499) Paper, \$2.50; cloth, \$3.00. 2006a

Contents: The population of Guatemala, by George Cheever Shattuck. Analysis of the vital statistics of Guatemala: official data, by Margaret M. Hilferty. Statistical study of morbidity and mortality at Quirigua: 1919-1931, by Margaret M. Hilferty. History and probable origin of the infectious diseases of Guatemala, by George Cheever Shattuck. Synopsis of medical studies of the expedition, by George Cheever Shattuck. Diseases of the Peten district of Guatemala, by Samuel Drury Clark. The incidence of infectious diseases in Guatemala, by George Cheever Shattuck. Malaria in Guatemala, by George Cheever Shattuck. Chancro ulcer and other forms of leishmaniasis in America, by George Cheever Shattuck. Syphilis and yaws in Guatemala, by George Cheever Shattuck. The incidence, type, and probable cause of anemia in the highlands of Guatemala, by George Cheever Shattuck. Goiter, myxedema, and cretinism in Guatemala, by George Cheever Shattuck. Pulse rates and circulatory and renal disorders, by George Cheever Shattuck. Low blood pressures of the races of Guatemala and of Yucatan, with a discussion of their significance, by George Cheever Shattuck. Helminthic infections of man in Guatemala, by Jack H. Sandground. Notes on the Arthropoda of medical importance in Guatemala, by Joseph C. Bequaert. The distribution of *Phlebotomus* in Central and South America, by Joseph C. Bequaert. Some health problems of Guatemala, by George Cheever Shattuck. Appendix. Index.

Note: A survey, carried out in 1932, and organized and directed by the Department of Tropical Medicine of the Harvard School of Public Health. It is a part of the Carnegie Institution's continuing study of the Spanish-Maya civilization. Data are given concerning the various diseases prevalent in the country, and the problems they entail are discussed.

SIMMONS, JAMES STEVENS, AND OTHERS

6-22
7-19
Global epidemiology; a geography of disease and sanitation, by James Stevens Simmons, Tom F. Wayne, Gaylord West Anderson, Harold MacLachlan Hirsch, and collaborators. Volume 1. Philadelphia: J. B. Lippincott Company, 1944. 504 p. illus. 26 cm. \$7.00. 2006b

Contents (abridged): Part 1, India and the Far East: Burma. Ceylon. China. Formosa. French Indo-China. India. Japan. Korea. British Malaya. Nampo Islands and Ryukyu Islands. Part 2, The Pacific area: Australia. Cook Islands and Niue Island. Easter Island. Fiji Islands. French Oceania. Gilbert, Ellice, Ocean and Nauru Islands. Guam. Territory of Hawaii. Japanese mandated islands. Johnston Island and Northern Line Islands. Netherlands East Indies. New Caledonia. New Hebrides. New Zealand. North Borneo, Sarawak and Brunei. Papua and New Guinea and the Bismarck Archipelago. Philippine Islands. Phoenix Islands. Pitcairn Island. Samoa Islands. British Solomon Islands. Tolselau or Union Islands. Tonga or Friendly Islands. Map showing world distribution of the principal tropical diseases. Index.

Note: This important survey of medical, health, and sanitary conditions throughout the world is based on surveys made for the Medical Department of the United States Army. Information and statistical data are furnished under the following headings for each of the geographical areas mentioned in the contents: "Geography and climate. Public health: Health services. Water supplies. Sewage disposal. Insects and animals. Food and dairy products. Miscellaneous problems of sanitation. Medical facilities: Hospitals. Medical personnel. Medical institutions. Diseases: Diseases spread chiefly through intestinal tract. Diseases spread chiefly through respiratory tract. Diseases spread chiefly by contact. Disease spread by arthropods. Nutritional diseases. Miscellaneous conditions. Summary." In addition, an excellent bibliography accompanies each section. Subsequent volumes are planned to cover other regions.

SNAPPER, ISIDORE

Chinese lessons to western medicine. A con-

tribution to geographical medicine from the clinics of Peiping Union Medical College. With a foreword by George R. Minot. New York: Interscience Publishers, Inc., 1941. 380 p. illus. 24 cm. \$5.50. 2006c

Contents (abridged): Medical clinics of Peiping Union Medical College. Nutritional problems and avitaminoses. Infectious diseases. Tuberculosis. Amyloid degeneration. Cardiovascular diseases. Renal affections. Diseases of the liver and biliary system. Diseases of blood-forming organs. Some remarks about malignant tumors. Intoxications. Miscellaneous diseases. Index.

Note: The author has written from his experiences as a foreigner serving in a hospital in north China, staffed, except for himself, by Chinese. The comments and case reports are based on the conclusion, not peculiar to this writer, that there is a geography of medicine as well as social and economic differences.

UNITED STATES. SURGEON GENERAL'S OFFICE LIBRARY

Index-catalogue of the Library of the Surgeon General's Office, United States Army (Army Medical Library). Authors and subjects. Fourth series. Vol. I-VIII (Aaron-Jzikowitz). Washington, D.C.: Government Printing Office, 1936-43. 8 v. 29 cm. \$2.50 per volume. 2006d

Note: This set, still in progress of publication, is the fourth series of volumes in the monumental printed index-catalogue of the Army Medical Library. The first volume of the first series was published in 1880. The entire set of four series contains a complete author and subject index to the books and periodicals in the Library of the United States Surgeon General in Washington and as such comprises an index to the whole range of modern medical literature. The following table shows the number of titles in the Index-catalogue so far published:

	Author Titles	Subject titles	
		Books	Journal articles
First series (16 volumes, 1880-1895)	176,364	168,537	511,112
Second series (21 volumes, 1896-1916)	169,812	136,405	645,557
Third series (10 volumes, 1918-1932)	88,876	57,034	603,600
Fourth series (volumes 1-8, 1936-1943)	40,456	35,675	543,211

Three supplements to the fourth series have been issued as follows and come bound in volumes 2, 3, and 6 respectively: *Synopsis of style with a list of abbreviations for serial publications indexed in the fourth series of the Index-catalogue*, Washington, D.C.: Government Printing Office, 1937, 98 p., 29 cm. *Congresses. Tentative chronological and bibliographical reference list of national and international meetings of physicians, scientists, and experts*, Washington, D.C.: Government Printing Office, 1938, 261 p., 29 cm. Mayer, Claudius F., *Bio-bibliography of XVI century medical authors*, Fascicle 1 (Abarbanel-Alberti), Washington, D.C.: Government Printing Office, 1941, 52 p., 29 cm.

WILBUR, RAY LYMAN

The march of medicine; selected addresses and articles on medical topics, 1913-1937. Stanford University, Calif.: Stanford University Press, 1938. 280 p. 23 cm. \$2.75. 2007

Contents (abridged): The physician of the future. The teaching of therapeutics. The education of the physician. The needs and future of medical education. Human welfare and modern medicine. The eclipse of magic in medicine. Maintaining standards without excessive standardization. The future practitioner. The medical curriculum. Eugenics and public health. The lag in the health program. Altering the medical curriculum. The honor system in medical practice. Medical progress in an economic world. The new childhood. The significance of caring for veterans. Mental health as a national problem. Health instruction the best social insurance. The fundamental place of the hospital in the practice of medicine. The economics of public health and medi-

cal care. The strategies of public health. Medicine at the crossroads. Biology in the university of tomorrow. List of medical papers and addresses, 1902-1928.

Note: A collection of 29 papers delivered by the president of Stanford University over a period of 24 years, comprising a panoramic view of the progress of medicine. Dr. Wilbur discusses the problems confronting the medical profession during his years as medical student, practitioner, teacher, and administrator, and reports analytically on the progress of the present and the needs of the future. For the interested layman as well as the physician.

WILDER, LUCY

The Mayo Clinic. Illustrated by Ruth Barney. 1944 edition. New York: Harcourt, Brace and Company, 1944. 94 p. illus. 26 cm. \$1.75. 2008

Contents: The past. The future. The present. A letter. The staff of the Mayo Clinic.

Note: A brief, popularized account of how the Mayo Clinic is organized and conducted today, with a short sketch of the history and background of the Mayo family, the achievements of Charles H. and William J. Mayo, and the development of the clinic through the years. The present edition provides a complete list of the staff as of October 2, 1944, including those members on military service.

Dictionaries

DORLAND, WILLIAM ALEXANDER NEWMAN

The American illustrated medical dictionary; a complete dictionary of the terms used in medicine, surgery, dentistry, pharmacy, chemistry, nursing, veterinary science, biology, medical biography, etc., with the pronunciation, derivation, and definition. Twentieth edition, revised and enlarged. With the collaboration of E. C. L. Miller. Philadelphia: W. B. Saunders Company, 1944. 1668 p. illus. (part col.) 24 cm. Plain, \$7.00; thumb-indexed, \$7.50. 2009

Note: This medical dictionary has been designed to serve the medical student, physician, editor and author, and all others who require a comprehensive reference on medicine and the allied sciences. The terminology conforms to the "Standard nomenclature of diseases and operations" of the American Medical Association (see Index) and to the standards of the Society of American Bacteriologists, American Chemical Society, American Dental Association, the B. N. A., and other scientific bodies with definite standards. Every word has a separate overhanging paragraph and phrases are defined under the nouns. Included are anatomic tables with pictures in colors on facing pages. Chemical formulas and symbols are given. There are nearly 700 signs and symptoms included, and treatments and technique of operations are described in brief. Some 1200 tests are described while reactions, staining, and fixing methods are also given. For the twentieth edition, more than 2500 new words were added, covering additions in the fields of biochemistry, chemotherapy, allergy, specific therapy, endocrinology, vitamin research, tropical and parasitic diseases, mycology, and new synthetic drugs and medical preparations. Special attention has been devoted to the vocabulary of war medicine and surgery.

DORLAND, WILLIAM ALEXANDER NEWMAN, EDITOR

American pocket medical dictionary, containing the pronunciation and definition of all the principal terms used in medicine, surgery, dentistry, veterinary medicine, nursing, and kindred sciences. Seventeenth edition, thoroughly revised. Philadelphia: W. B. Saunders Company, 1942. 1037 p. 16 cm. Plain, \$2.00; thumb-indexed, \$2.50. 2010

Contents: Table of abbreviations. Index to the tables. Dictionary: a to z. Tables: Arteries. Chemical elements. Muscles. Nerves. The principal rules. Equivalents of centigrade and fahrenheit thermometric scales. Weights and measures. Metric weights and measures. Doses.

Note: This is an abridged lexicon of the terms used in medicine, surgery, pharmacy, dentistry, biology, chemistry, nursing, veterinary and allied fields. It contains more than 52,000 words and nursing terms, giving brief definitions, the approved spelling, pronunciation, correct capitalization, and a listing and explanation of chemical symbols and formulae. Approximately 2000 words were added for the seventeenth edition. All definitions were carefully checked, revised, and amplified wherever necessary. Many of the definitions so expanded include correlated words.

GOULD, GEORGE MILBRY, AND C. V. BROWNLOW

Gould's Medical dictionary, words and phrases generally used in medicine and the allied sciences, with their pronunciation and derivation. Fifth revised edition. Philadelphia: The Blakiston Company, 1941. 1528 p. illus. (part col.) 25 cm. \$7.00. 2011

Note: A standard, comprehensive dictionary. The present edition defines about 77,000 words and phrases. Pronunciation is shown by a phonetic respelling of each word. For convenience, a key to the phonetic transcription is furnished at the bottom of each page. Synonyms, antonyms, and cross references between related subjects are included. Among the supplementary reference material included are dose tables, tables of pathogenic bacteria, table of microorganisms, and chemical formulas. Many new illustrations have been added in this edition.

GOULD, GEORGE MILBRY

Gould's pocket pronouncing medical dictionary of the principal words used in medicine and the collateral sciences. Eleventh edition of over 40,000 words, revised by C. V. Brownlow. Philadelphia: The Blakiston Company, 1939. 1052 p. 16 cm. Plain, \$2.00; thumb-index edition, \$2.50. 2012

Contents: Principal words used in medicine and the collateral sciences. Appendix: Tables of arteries, bones, chemical elements, hormones, microorganisms, muscles, nerves, prefixes and suffixes, phobia's signs and symbols, a physician's dose-list of drugs with their incompatibilities, and a veterinary dose table, both in the English and metric measures, and based upon the eleventh revision of the United States Pharmacopoeia.

Note: This dictionary provides concise, clear definitions and the pronunciation of terms used by the medical practitioner, lecturer, writer, research worker, nurse, pharmacist, and others. The pronunciation is indicated by a respelling of each word in English phonetics. Ninety tables are included.

LANG, HUGO

Lang's German-English dictionary of terms used in medicine and the allied sciences with their pronunciation. Revised and edited by Milton K. Meyers. Fourth edition, enlarged. Philadelphia: The Blakiston Company, 1932. 926 p. 24 cm. \$3.50. 2012a

Note: A glossary of German medical words in common use. It contains a large number of terms employed in allied sciences, particularly chemistry, biology, and pathology. In the present edition, 3,500 new words have been added, bringing the total number of definitions up to approximately 56,500. The pronunciation has been added to the German words throughout.

STEDMAN, THOMAS LATHROP, AND STANLEY THOMAS GARBER

Stedman's Practical medical dictionary. Fifteenth revised edition, with etymologic and

orthographic rules. Baltimore: The Williams & Wilkins Company, 1942. 1257 p. illus. (part col.) 23 cm. \$7.50. 2013

Note: A dictionary of medical terms for students and practitioners, giving the definition, derivation, and pronunciation of medical and related words and phrases, including dental, veterinary, chemical, botanical, electrical, life-insurance, and other pertinent words, as well as eponymic names, signs, syndromes, and reflexes. The work also contains anatomical tables of titles in general use, the terms sanctioned by the Basle Anatomical Convention, the new British anatomical nomenclature, pharmaceutical preparations official in the United States and British pharmacopoeias or contained in the National Formulary, and comprehensive lists of synonyms. The fifteenth edition has been reset in new type and contains many new or rewritten items, while numerous obsolete terms have been dropped. The material on vitamins has been revised and new biochemical and chemotherapeutic compounds have been added. New illustrations have been added and older ones replaced.

TABER, CLARENCE WILBUR, EDITOR

Taber's cyclopedic medical dictionary, including a digest of medical subjects: medicine, surgery, nursing, dietetics, physical therapy. 273 illustrations. Second edition. Philadelphia: F. A. Davis Company, 1942. 1487 p. illus. 18 cm. \$3.00. 2013a

Note: The second edition of this abridged medical dictionary contains between 50,000 and 60,000 words and terms, representing over twice as many definitions as in the previous edition. Definitions are for the most part concise, but there are a number of longer and more detailed accounts of the more important diseases, treatments, and methods. Derivation and pronunciation of words are included. Over 500 drugs are listed, giving action, usage, dosage, antidotes, and all forms of first-aid treatment. Important surgical instruments and methods are covered briefly, and there are 373 phrases in five languages to be used in questioning or giving directions to a patient. Included are numerous terms relating to psychiatry, physical therapy, toxicology, bacteriology, materia medica, and nursing. An abridged edition is issued under the title: *Taber's Condensed medical dictionary*, Philadelphia: F. A. Davis Company, 1943, 784 p., \$2.25.

History

BLANTON, WYNDHAM BOLLING

Medicine in Virginia in the seventeenth century. Richmond: The William Byrd Press, Inc., 1930. 337 p. illus. 22 cm. \$6.00. 2013b

Contents: Introduction. Medicine under the London Company. Epidemic diseases. Medical education. Simple and therapy. Medical practice. Housing the sick. Women and medicine. The private life of physicians. Public life of physicians. Vocations and avocations. Medical fees. Medical legislation. A brief biographical dictionary. Bibliography. Appendix. Index.

BLANTON, WYNDHAM BOLLING

Medicine in Virginia in the eighteenth century. Richmond: Garrett and Massie, Inc., 1931. 449 p. illus. 27 cm. \$7.50. 2013c

Contents: The eighteenth century. The three arts. The handmaids of medicine. Epidemic diseases. Medical education. Reading and writing. Botany and medicine. Plantation medicine. Lay contributors to medicine. Advertising and quackery. Men of mark. Doctors of the colonial wars. Revolutionary medicine. Hospitals. Washington's physicians, diseases, and death. Towns and town doctors. Country doctors. Medical legislation. Appendixes. Bibliography. Index.

BLANTON, WYNDHAM BOLLING

Medicine in Virginia in the nineteenth century. Richmond: Garrett and Massie, Inc., 1933. 466 p. illus. 27 cm. \$7.50. 2013d

Contents: The nineteenth century. The rise of the medical colleges. Anatomy and grave-robbing. Medical societies. Offspring of the Medical Society of Virginia. Medical journals. The progress of medicine and surgery. Specialism. Allies. The cults. Hospitals. Epidemics. Confederate States medicine. Other wars. Virginia doctors in the military and public health services of the United States. Books and authors. From generation to generation. Contributions to the medical annals of other states. Appendixes. Bibliography. Index.

Note: These three volumes constitute a carefully documented history of the development of medicine in Virginia from its earliest beginnings in 1607 to the year 1900. The work was initiated and sponsored by the Medical Society of Virginia, and while of primary interest to the medical historian, it is sufficiently non-technical to be of use to the lay reader and the student of social history. The section on medical libraries in the second volume lists the names of books and their publication dates which were included in the several large privately-owned physicians' libraries of the eighteenth century, together with 32 facsimile reproductions of the original title-pages of some of the more interesting works. A detailed account of military medicine and hospital operation in Virginia during the Civil War is presented in the third volume, together with a general account of the progress of medicine and surgery in the state and the achievements of individual specialists. Extensive bibliographies and facts of special interest are contained in the appendixes of each volume, and there are a large number of photographs and other illustrations.

CHESNEY, ALAN MASON

The Johns Hopkins Hospital and the Johns Hopkins University School of Medicine; a chronicle. Volume 1. Early years, 1867-1893. Baltimore: The Johns Hopkins Press, 1943. 318 p. illus. 23 cm. \$3.00. 2014

Contents (abridged): The founder, original hospital trustees, and selection of site. John Shaw Billings. Appointment of Daniel C. Gilman as president. Preliminary plans and engineering problems. First steps by the University toward the establishment of the School of Medicine. Steps toward organization and selection of the hospital staff. First years of operation of the hospital. Formation of the Women's Fund Committee. Announcement of the opening of the School. Appendix. Index.

Note: The first volume of a projected history of the Johns Hopkins Hospital and School of Medicine. Emphasis is placed on the importance of this period for both institutions, since it was during this period that plans were made and principles and policies established which were to influence their future development. The material is based largely upon the official records of the Hospital and University, and upon previously published biographies and autobiographies of men connected with the development of the institution. The work is illustrated with contemporary photographs.

CLENDENING, LOGAN, EDITOR

Source book of medical history. New York: P. B. Hoeber, Inc., 1942. 685 p. 24 cm. \$10.00. 2015

Contents: Egyptian papyri. Cult of Aesculapius. Hippocrates. Thucydides. Aristotle. The four humours. Galen. Aretaeus the Cappadocian. Celsus. Dioscorides. Arabic medicine. The Middle Ages. Paracelsus. Fracastorius. Anatomy. William Harvey. Obstetrics. Ambroise Paré. Thomas Sydenham. Marcello Malpighi. Anton van Leeuwenhoek. Medical life of 17th century. Early gross pathology. Pediatrics. 18th century clinical medicine. Medical life in the 18th century. Smallpox. Leopold Auenbrugger. René-Théophile-Hyacinthe Laënnec. Medical life in early 19th century. Anesthesia. Bacteriology. Modern therapeutics. Humanitarian medicine. Preventive medicine. Modern clinical descriptions. Instruments and modern methods of precision. Later physiology. Asepsis. Cellular pathology. Rise of the specialties. Wilhelm Conrad Roentgen. Index.

Note: In this anthology of medical literature the author's aim is to give a comprehensive survey of classical medical writings arranged in chronological order. A brief introductory note precedes each section or author, giving the historical background. The selections or translations which follow are not usually given in their entirety but are sufficiently complete to preserve the spirit of the original. In certain instances an abstract of an entire book is presented. A special feature of this anthology is the inclusion of selections from lay literature showing a contemporary view of medical life at different ages. Examples are, the accounts of Greek medicine by Herondas, Aristophanes, and others; of Arabian medicine from the Arabian Nights; Chaucer's "Doctor

of Physic"; the doctors of Dickens and Thackeray, and other more modern excerpts. The book is intended for students and practitioners of medicine, and may also be of interest to the layman.

DRINKER, CECIL KENT

Not so long ago; a chronicle of medicine and doctors in colonial Philadelphia. New York: Oxford University Press, 1937. 183 p. illus. 22 cm. \$3.50. 2016

Contents: A colonial family. Just living. Childbearing in 1790. The tuberculosis of William Drinker. Smallpox and the fevers. Yellow fever in Philadelphia. Medical practice in 1800. The days of the diary.

Note: This book is based on a diary kept from October, 1758, to 1807 by Elizabeth Sandwith Drinker, the author's great, great grandmother. The author first used the material of medical interest in the diary as a basis for a series of lectures in the Lowell Institute. In this book he has incorporated those lectures and has added to them other material bearing on medical affairs during the period covered. The diary excerpts are carefully identified and are reproduced without changing punctuation, spelling, etc.

ESSAYS IN THE HISTORY OF MEDICINE, presented to Professor Arturo Castiglioni, on the occasion of his seventieth birthday, April 10, 1944. (Supplements to the Bulletin of the history of medicine. No. 3) Baltimore: The Johns Hopkins Press, 1944. 358 p. illus. 25 cm. Paper, \$3.50. 2016a

Contents: Epistola dedicataria, by Henry E. Sigerist. Vita and bibliography of Professor Arturo Castiglioni. Paul Bert's triumph, by Erwin H. Ackerknecht. Random thoughts with a hopeful purpose, by Alberto Ascoli. La historia de la medicina y el perfeccionamiento médico, by Juan Ramon Baldrán. Giovanni Maria Lancisi and "De subitaneis mortibus," by Massimo Calabresi. Sydenham and Cervantes, by Ludwig Edelstein. O Museo de psiquiatria e de antropologia criminal organizado por Cesare Lombroso, by Carlo Foa. Polydore Vergil, his chapters on the history of physick and his *Anglica historia*, by John F. Fulton. Jean Antoine François Ozanam, 1773-1837, soldier, physician, epidemiologist, by Iago Galdston. Angina inflammatoria (diphtheria?) as described in David Orme's Edinburgh dissertation (1750) and Benjamin Morris' Leyden dissertation (1750), by Edward B. Krumbhaar and W. B. McDaniel. 2d. Medicina aborigen peruana, by Juan B. Lastres. A short chronology of important events in cardiology, by Aldo A. Lisada. Diabetikerdiäten der Vorinsulinära, by Adolf Magnus-Levy. Los hospitales de América durante la época colonial, by Carlos Martínez Durrán. Mignotydea, an undescribed epidemiological monograph of the cinquecento, by Claudius F. Mayer. La historia y la filosofía de la ciencia, by Aldo Mili. Directions for the use of an early American marine medicine chest, by Genevieve Miller. Some relations between British and German medicine in the seventeenth century, by Max Neuburger. Medical matters in Marco Polo's Description of the world, by Leonardo Olshki. Medidas de seguridad contra la fiebre amarilla durante el virreynato del Perú, by Carlos Enrique Paz Soldán. Der Zahnbrecher des Hans Sachs, by Curt Poskauer. Beccaria (1738-94), by George Sarton. Frédéric Bérard, historien de la médecine, by Raymond de Saussure. Le manuscrit du *Régime du corps* d'Aldebrandino, de la Bibliothèque d'Ajuda, à Lisbonne, by Augusto da Silva Carvalho. Retail pharmacy as the nucleus of the pharmaceutical industry, by George Urdang.

Note: A collection of scholarly papers written for this memorial volume. As the titles indicate several of them are in languages other than English.

GALDSTON, IAGO

Progress in medicine, a critical review of the last hundred years. With a foreword by Henry E. Sigerist. New York: Alfred A. Knopf, 1940. 361 p. 22 cm. \$3.00. 2017

Contents: Introduction. Preludes to Pasteur. The genius of Pasteur. The Pasteurians. The reign of the microbes. The challenge of nutrition. The inner realm and the endocrines. From Mesmer to Freud. Freud and modern psychiatry. A century of clinical progress. Whither medicine? Index.

Note: The author traces the progression of ideas as witnessed in the development of medicine during the last hundred years, and draws from present-day trends in medical thought such deductions as to its future as seem warranted by the facts. Although the book is written for the layman, it is not a popularized account in the usual sense. The emphasis is not upon the well-known heroes of medical history but rather upon the history of medical ideas as a continuous process, stressing the motivations rather than the specific accomplishments of medical scientists. The style is dignified and sober and there is a considerable amount of little-known information presented.

GANTT, WILLIAM ANDREW HORSLEY

Russian medicine. With 12 illustrations. New York: P. B. Hoeber, Inc., 1937. 214 p. illus. 17 cm. (Clio medica: a series of primers on the history of medicine. Editor: E. B. Krumbhaar. xx) \$2.50. 2018

Contents: Prolegomenon. Period of primitive medicine up to the reign of Peter the Great. Peter the Great and the period of foreign influence. Period of independent Russian medicine. Famines and epidemics: the Great War and Revolution. Soviet medicine. Bibliography. Appendix: Comparative chronology. Indexes.

Note: The author's interest in the subject of this book stems from his stay in Russia as a member of the American Relief Administration in 1922-23, and from his subsequent work with Professor Pavlov. When he attempted to compile the data for this book he found the material to be meager and difficult to obtain, but intensely interesting. To his surprise he learned that many discoveries in medicine were made in Russia years before they were recognized by the outside world, being buried, so to speak, in the Russian literature. This brief history gives the results of his studies and research.

GOODMAN, HERMAN

Notable contributors to the knowledge of syphilis. First limited edition. New York: Froben Press, 1943. 144 p. illus. 22 cm. \$3.00. 2018a

Contents: Foreword. Introduction. Pre-Columbian highlights. Columbus and after. Sixteenth century. Seventeenth century. Eighteenth century. Nineteenth century. Twentieth century. Index of personal names.

Note: A collection of rather brief notes on the lives and work of those who contributed to our knowledge of this disease. The illustrations consist entirely of portraits.

GORDON, BENJAMIN LEE

The romance of medicine. The story of the evolution of medicine from occult practices and primitive times. Philadelphia: F. A. Davis Company, 1944. 624 p. illus. 24 cm. \$5.00. 2019

Contents: Primitive concepts of fecundation. Early ideas of gestation and genetics. Man's knowledge of his physical self. The secret of the human automaton. Galenic and post-Galenic concepts of physiology. The search for the vital principle. The location of the vital energy. Primitive conception of disease. Demonology and hysteria. Demonology and bacteriology. The evil eye and medicine. Astrology and medicine. Gods, saints, and spiritual healers. The power of mystic symbols and magical gestures. The scapegoats in medicine. Magic, myth and medicine. Signature and other healing concepts. Biologic products as a means of occult healing. Ancient surgery. Hydrotherapy and other healing measures. Spiritual therapy and psychotherapy. Ancient conception of medical ethics and practices. The destiny of the vital principle. Hebrew and Christian ideas of the after-life. Speculative modern concepts. Notes. Index.

Note: This book is an account of the early development of medicine, primitive customs, ancient animistic beliefs, religious practices, folklore, traditions, and historical facts with regard to the medical significance hidden in them. It describes the ideas of life in health and disease of our savage, semi-civilized, and civilized ancestors, their conception of the controlling forces governing the human mechanism and the mind, and the role they were assumed to play.

HAAGENSEN, CUSHMAN DAVIS, AND WYNDHAM E. B. LLOYD

A hundred years of medicine. New York:

610.9
H10.9
Sheridan House, 1943. 444 p. illus. 24 cm. \$3.75.

2020

Contents (abridged): Part I, Medicine up to a hundred years ago: The origins of medicine. Theories of medicine in the 18th century. Practical scientific progress in the 18th century. 18th century surgery and hospitals. The sanitary conditions and health of the people a hundred years ago. Some common infectious diseases of a century ago. Part II, Medical science during the last hundred years: The new pathology. New aids to diagnosis. The germ theory. Chemotherapy. Tuberculosis. The vitamins. Pernicious anemia. Diabetes. Diseases of the heart and blood vessels. Nephritis. Part III, Surgery during the last hundred years: The beginning of modern surgery. The coming of anaesthesia. The conquest of surgical infection. The control of hemorrhage. Obstetrics and gynecology. Orthopaedics. Neurosurgery. Thoracic surgery. Other surgical specialties. Radium. Part IV, New social aspects of medicine: A century of progress. The doctor's dilemma. Bibliography. Index.

Note: W. E. B. Lloyd's *A hundred years of medicine*, London, 1936 has been extensively revised and rewritten for American readers. The book summarizes the accounts of the progress of medicine during the last hundred years. It is intended as a summary of the important and more interesting aspects of medicine for the layman and first year medical student. Each development in medicine is traced separately from its origins rather than as part of a strictly chronological survey of the whole field. The present edition includes added material on American events and omits some material of special interest to English readers. Also, this edition presents a new and extended treatment of the history of the chief disease entities.

HAGGARD, HOWARD WILCOX

610.9
H10.9
Mystery, magic, and medicine; the rise of medicine from superstition to science. Garden City, N.Y.: Doubleday, Doran & Company, Inc., 1933. 192 p. illus. 18 cm. \$1.00.

2021

Note: A brief outline of the development of the science of medicine from its beginnings in primitive superstition to the close of the 19th century. Intended for the lay reader, this book contains a short glossary of some common medical terms and thumbnail sketches of leading historical figures.

HEIDEL, WILLIAM ARTHUR

Hippocratic medicine: its spirit and method. New York: Columbia University Press, 1941. 149 p. 21 cm. \$2.00.

2022

610.9
-364
Contents: Foreword, by Ludwig Kast. Introduction. The ideal of science. The science of the time. The medical profession. Some scientists of the day. Scientific methods. Medicine as an art. Conclusion. Index.

Note: A brief scholarly treatment of the medical profession in ancient Greece, with many references to Hippocrates, Plato, and Aristotle.

LUND, FRED BATES

Greek medicine. With 7 illustrations. New York: P. B. Hoeber, Inc., 1936. 161 p. illus. 17 cm. (Clio medica; a series of primers on the history of medicine. Editor: E. B. Krumbhaar. xviii) \$2.00.

2023

Contents: Introduction. Hippocratic corpus. Doctrine of humors. Alexandrian era. Empiric school. Greek medicine in the Roman Empire. Methodist school. Celsus and Pliny. The pneumatic and eclectic schools. Aretaeus; Ruphus; Soranus. Galen. Antyllus and general conditions in the later Roman Empire. Oribasius. Bibliography. Index.

Note: In this volume the author has given actual translations from various ancient writers in order to show, so far as is possible in translation, how they really expressed themselves and the way their minds worked. Most of the translations were prepared by the author himself. Because of the wealth of material, it was necessary to leave out much that has great interest and importance, but the author has endeavored to introduce as many points of modern interest as possible. The book is intended not only for students and practitioners of medicine but also for all persons, whether physicians or laymen, who are interested in the history of medicine.

MACKINNEY, LOREN CAREY

Early medieval medicine, with special reference to France and Chartres. Baltimore: The Johns Hopkins Press, 1937. 247 p. illus. 20 cm. (Institute of the History of Medicine, The Johns Hopkins University. Publications. 3rd series, Vol. 3) \$2.75.

2023a

Contents: The Dark Age concept and early medieval medicine. Medicine in Merovingian and Carolingian France. Medical progress at Chartres in the tenth and eleventh centuries. Notes. Plates. Index.

Note: The Hideyo Noguchi lectures, given in 1936 for the first time by a layman, a professor of medieval history, rather than a physician. They are interpretive and general. References are included in the "notes" section, and the plates are mostly photographic reproductions of medieval manuscripts on medical subjects.

MAJOR, RALPH HERMON

Fatal partners, war and disease. Garden City, N.Y.: Doubleday, Doran & Company, Inc., 1941. 342 p. illus. 23 cm. \$3.50.

2024

Contents: With the Greeks and Romans. The first crusades. The gunpowder era. A war of ideologies. The Corsican colossus. The lady with the lamp. Solferino. Our manifest destiny. Victory in South Africa. The World war, 1914-18. The war to end wars. After Versailles. In retrospect. Bibliography. Index.

Note: In this volume, the author traces the growth of medical science from the time of the early Greeks and Romans to the first World war, by telling the story of the innumerable wars and epidemics which have ravaged mankind during these centuries. He tells of the many medical advances which have resulted from studies in the immense laboratory provided by the partners, war and disease. The book will be of interest to both the medical man and the general reader.

MOLL, ARISTIDES ALCIBIADES

Æsculapius in Latin America. Philadelphia: W. B. Saunders Company, 1944. 639 p. illus. 22 cm. \$7.00.

2025

Contents (abridged): Colonial times: peoples in the new world. The Indian treasure house. Spain's medical status. The cronistas. Governmental efforts. Early population figures. Native environment. Autochthonous diseases. Vermin. Epidemics. Quarantine. Physicians. The protomedicate. Teaching. Doctorship. Medical practice. Hospitals. Teratology. Pioneer operations. Early research. Missions. Brazil. Mexican priority. Latin-American incunabula. Foreign influence. Awakening in the 18th century. Boon of vaccination. Independence period: foreign influence. The new surgery. Teaching reform. The sciences. The age of specialization. Midwifery. Women in medicine. Nursing and social service. Laboratories and institutes. Military medicine. Public life. Medical history. Literature. Academies and societies. The new hospitals. Social security. Public health. Vital statistics. Congresses. Martyrs. Training, distribution, and status of physicians. National leaders. Pan American cooperation. Appendices: Chronology for disease. Medical and general chronology for Latin America. Bibliography. Index of names. Subject index.

Note: This book is of general interest to both professional and lay readers. It is an authentic picturization of the history of medicine in Latin America divided into two periods—from 1492 to 1808, and from 1808 up to present times. It was conceived out of the need to acquaint those beyond the borders of Latin American countries with the stages of progress and development of medicine in the countries south of the Rio Grande, and, by so doing, to bring out the many important contributions made by Latin-America to the growth and advance of medical science generally. Footnotes are used throughout for additional references and explanations. Many interesting illustrations of historical interest are spread through the pages.

NORWOOD, WILLIAM FREDERICK

Medical education in the United States before the Civil War. Foreword by Henry E. Sigerist. Philadelphia: University of Pennsylvania Press, 1944. 487 p. 24 cm. \$6.00.

2026

Contents (abridged): Introduction. Factors in early American medical education. Medical schools of Pennsylvania. The schools of New York State. Medical schools of New England. The schools of the Old South. The schools of Transappalachia. Evolution of the American system of medical education. Bibliography. General index. Index of personal names.

Note: A survey of the rise and progress of the American system of medical instruction and the institutions of medical learning up to the time of the Civil War. Little effort has been made to introduce new information concerning some of the larger, well-known schools, but there is a serious attempt to draw from obscurity many relatively unknown institutions. Wherever pertinent the various aspects of the subject have been laid on a background of the social and intellectual phases of the American scene. Emphasis has been placed on the economic and social aspects of the rise and decline of individual medical schools, but the study is in no sense a treatise in sociology or economics and merely attempts to examine a phase of American medical history from a broad point of view. The material is based on a thorough study of the original documents, nearly all of which are included in the bibliography which contains more than 500 references.

OLIVER, WADE WRIGHT

Stalkers of pestilence; the story of man's ideas of infection. Introduction by Theobald Smith. 23 illustrations. New York: P. B. Hoeber, Inc., 1930. 251 p. illus. 21 cm. \$3.00. 2027

Contents: Prehistoric man to Hippocrates. Arabic medicine, the Medieval period and the Renaissance. The 17th and 18th centuries. The 19th century. The 20th century. References. Indexes.

Note: The purpose of this volume is to trace briefly the historical development of man's ideas regarding the nature of infectious diseases. As Dr. Theobald Smith remarks in the Foreword, it gives the reader an account of the chief periods when medicine turned a sharp turn during the lives of Pasteur and Koch, and what has followed is largely the unfolding of the new relations pointed out by them. The author has focused attention not only on the epochs introduced by new ideas in medical theory but also upon the lives of the great physicians and medical radicals. The book is designed for use as a source book for research as well as for reading in courses on medical history.

PACKARD, FRANCIS RANDOLPH

History of medicine in the United States. 103 illustrations. New York: P. B. Hoeber, Inc., 1931. 2 v. illus. 24 cm. \$12.00. 2028

Contents: Volume I. Introduction. Early medical history of the English colonies. Epidemic sickness and mortality to the year 1800. Early medical legislation. Hospitals. Medical education. Earliest medical schools. Pre-Revolutionary medical publications. The medical profession in the War for Independence. Medical Department of the Army from close of Revolution to close of Spanish-American War. Volume II. Medical Department of the United States Navy, by R. P. Parsons. Medical schools founded during first half of 19th century. Development of medical practice and education in some of the states. Foreign influences. Some notable events in American medicine and surgery. Beginnings of specialism. Appendices: Examination of Dr. Church. Lecture by Dr. Bond, 1766. Surgeon Generals, U.S. Army, 1818-1931. Humane Society of Philadelphia. The ether controversy. Women in medicine. Bibliography. Indexes.

Note: This work represents a second edition of a book published by the author in 1901, entitled *History of medicine in the United States, a collection of facts and documents relating to the history of medical science in this country from the earliest English colonization to the year 1800, with a supplemental chapter on the discovery of anaesthesia*. Increased interest in the subject of the history of medicine has resulted in the unearthing of so much new material that the present edition has had to be entirely rewritten. The period covered has also been extended. The author expresses his regret that the historical records of medicine in this country have been very unevenly compiled, as a consequence of which there is an unavoidable unevenness in the data reported from the various sections of the country. It is his hope that local research in this field will be stimulated.

RIESMAN, DAVID

The story of medicine in the Middle Ages. New York: P. B. Hoeber, Inc., 1935. 402 p. illus. 23 cm. \$5.00. 2029

Contents: Introduction. The Greek inheritance. Monastic and clerical medicine. The School of Salerno. Arabian medicine. The Jewish physicians of the Middle Ages. Scholasticism and medicine. Astrology. Alchemy. The rise of the universities. University of Montpellier; of Bologna; of Padua; of Paris. Oxford and Cambridge. Anatomy. Vesalius. Surgery. Surgery in Italy. Surgeons and barbers in Paris. Baths and medieval hygiene and sanitation. Medicine and the guilds. Medieval diseases and epidemics; leprosy. The sweating sickness and St. Anthony's fire. The King's evil and epilepsy. The plague. The flagellants and the dancing mania. Syphilis. Medical treatment in the Middle Ages. Uroscopy. Paracelsus. Medieval textbooks of medicine. Medieval hospitals. The lay attitude toward the medical profession in the Middle Ages. Conclusion. Index.

Note: As the author of this volume has remarked, the fact that people in general know more about the mythology of Greece and the history of ancient Rome than they know about the Middle Ages is perhaps due to the dearth of good works, especially in the English language, dealing with the period. Our medical debt to the Middle Ages is not negligible, and will undoubtedly become greater as more of the old hidden manuscripts are brought to light and translated. This volume is intended to fill for the medical student the hiatus between the later Greeks and the Moderns, and to give to the layman some knowledge of a long neglected period.

SHAFER, HENRY BURNELL

The American medical profession, 1783 to 1850. New York: Columbia University Press, 1936. 271 p. 22 cm. (Studies in history, economics and public law, edited by the Faculty of Political Science of Columbia University. No. 417) \$3.25. 2029a

Contents: Preface. American medicine at the close of the eighteenth century. Medical education. Medical education: studies and problems. The practice of physic. Medical ethics and fees. Medical literature. Medical regulations and societies. Developments in American medicine. Bibliographical note. Index.

Note: An historical monograph dealing with the double problem faced by the doctors of the early republic, that of changing, as all medicine was then doing, from medieval customs to modern methods, together with the adaptations to the conditions of a young and expanding nation. The writer is chiefly concerned with the allopathic physician, merely mentioning other practitioners, where they impinged upon the development of the regular profession.

SIGERIST, HENRY ERNST

Civilization and disease. Ithaca, N.Y.: Cornell University Press, 1943. 255 p. illus. 23 cm. \$3.75. 2030

Contents: Introduction. Civilization as a factor in the genesis of disease. Disease and economics. Disease and social life. Disease and the law. Disease and history. Disease and religion. Disease and philosophy. Disease and science. Disease and literature. Disease and art. Disease and music. Civilization against disease. Epilogue. Index.

Note: This volume is based on the Messenger lectures on the evolution of civilization, given at Cornell University in 1940. The major aspects of the complex relationships between civilization and disease are discussed. Non-technical language is used, as the book is intended for laymen.

SIGERIST, HENRY ERNST

Medicine and human welfare. New Haven: Yale University Press, 1941. 148 p. illus. 21 cm. (The Terry lectures) \$3.00. 2031

Contents: Preface. List of illustrations. Disease. Health. The physician. Index of proper names.

Note: Medicine, its close and continued relation to religion, and the changes that have taken place in man's attitude toward disease form the subject matter of the first chapter of this book. The chapter entitled "Health" is concerned with the development of the concept of the pursuit of health from the days of ancient Greece when it was an individual matter, a luxury confined to the favored few, up to the present day when awakening social consciousness is bringing the realization that health must be the privilege of all. The third chapter gives a realistic account of the development of the medical man. His gradual emergence is traced from the condition of a craftsman attached to a court, a rich family, or perhaps a city, to that of a scientist working inde-

pendently. The author stresses the inadequacy of the present "commercialized" system and ends with a stirring appeal to make medical treatment a public service.

STERN, BERNHARD JOSEPH

Society and medical progress. Princeton: Princeton University Press, 1941. 264 p. 23 cm. \$3.00. 2032

Contents: The long road to medical science. The scientific foundations of medicine. The role of the medical schools. The development of the modern hospital. Urbanization and its effects. Income and health. The conquest of famine. Medical advances and social progress. Resistances to medical change. Medical progress and social change; a summary. Notes. Index.

Note: A study of the medical profession from the point of view of the social scientist. It is written for the general reader, and in particular for historians and practitioners of medicine and workers in the field of public health.

VIETS, HENRY ROUSE

A brief history of medicine in Massachusetts. Boston: Houghton Mifflin Company, 1930. 194 p. illus. 22 cm. \$4.00. 2032a

Contents: Introductory. The colonial period (1620-1700). The eighteenth century to the American revolution (1700-1775). The American revolution and after (1775-1800). The early nineteenth century (1800-1846). The discovery of ether anaesthesia (1846). Modern developments in surgery and medicine (1847-1930). References. Index.

Note: The main events and trends in medical education and practice are narrated briefly but accurately. The volume was written and published as a contribution to the Tercentenary Celebration of the Settling of the Massachusetts Bay Colony (1930) which nearly coincided with the one hundred and fiftieth anniversary of the Massachusetts Medical Society (1931).

WARBASSE, JAMES PETER

The doctor and the public; a study of the sociology, economics, ethics, and philosophy of medicine, based on medical history. New York: P. B. Hoeber, Inc., 1935. 572 p. illus. 23 cm. \$5.00. 2033

Contents: The art of protecting health begins. Medicine benefits by the learning of the Greeks. Mysticism gives place to science. The Middle Ages are saved by a few thinkers who keep alive respect for reason and inquiry, and feed the flame of learning. New knowledge is constantly acquired in the 16th and 17th centuries. Society changes with the advance of learning. Medicine progresses in the 18th century and also develops fads, cults, and satire. The benefits of medicine are recognized and its value established. A scientific age develops a medical culture. Medical education of the public and of the physician modifies the relations of the doctor to society. Medicine touches every human relationship. Health protection is better understood. References. Index.

Note: A history of medicine from the standpoint of society and the relationship between the doctor and the public. The author believes that the public possesses an inadequate knowledge of the origin and possibilities of medicine and therefore enjoys but a limited access to the services of modern medical art. The book is written for the layman and aims to correlate medical science and the public welfare. It presents medicine as a social force and discusses the influence of social trends upon medicine.

WINSLOW, CHARLES EDWARD AMORY

The conquest of epidemic disease; a chapter in the history of ideas. Princeton: Princeton University Press, 1943. 411 p. 24 cm. \$4.50. 2034

Contents: The world of demons. The wrath of God. Metaphysical medicine. The universe of natural law. Primitive concepts of contagion. The great teacher. Fracastorius. The conception of a contagium animatum. The English Hippocrates. The last of the plague tractates. The enigma of yellow fever. The great sanitary awakening. Three pioneer epidemiologists. Pasteur. Petteukofer—the last stand. The concept of the carrier. The insect host. The modes of infection. Acknowledgments. References. Index.

Note: The story of how man solved the mystery of epidemic disease, told as far as possible in the actual words of the various participants, after an analysis by the author of all their surviving

works. Hippocrates, Galen, Fracastorius, Paracelsus, Kircher, Mead, Rush, Pasteur, and Chadwick are some of those participants. For the layman as well as public health workers and members of the medical profession.

General Texts for Students and General Practitioners

ALLEN, EDGAR VAN NUYS, EDITOR

Specialties in medical practice. With a foreword by Donald C. Balfour. New York: T. Nelson and Sons, 1943. 2 v. illus. (part col.) 25 cm. \$25.00. 2034a

Contents: Volume 1: Ophthalmology, by Harry S. Gradle. Diseases of the ear, nose, and throat, by Lawrence R. Boies. Neurology, by Henry R. Viets. Psychiatry, by Lloyd H. Ziegler. The vitamins and vitamin deficiency diseases, by Dwight L. Wilbur. Allergy, by Frank A. Simon. Orthopedic surgery, by Don King. Volume 2: Obstetrics and gynecology, by G. D. Royston. Endocrinology, by Willard Owen Thompson. Urology, by John L. Emmett. Proctology, by Louis A. Buie. Dermatology and syphilology, by Svend Lomholt and James Lowry Miller. Minor surgery, by W. Kenneth Jennings. Index.

Note: This two-volume, loose-leaf reference work is intended as a ready source of information for all who practice medicine. It attempts to answer most of the questions the specialist may ask about other specialties, and to furnish concise information about the specialties to the medical student. An effort has been made to outline the treatment so that the practitioner can carry out the less complicated procedures of the specialist, all of which are illustrated by practical examples. Etiology, pathology, physiology, internal medicine, and surgery have all been intentionally omitted since this work is not offered as a textbook but rather as a supplement to standard texts. There are bibliographies at the end of each chapter. The loose-leaf format is intended to permit the insertion of periodic revisions as they are issued by the publisher. Papers average 100 pages in length.

BECKMAN, HARRY

Treatment in general practice. Fourth edition, thoroughly revised. Philadelphia: W. B. Saunders Company, 1942. 1015 p. illus. 25 cm. \$10.00. 2035

Contents: Infectious diseases. Fluke infestation. Worm infestation. Allergic disturbances. Deficiency diseases. Endocrine disturbances. Disturbances in menstruation. Obesity and malnutrition. Diseases of the gastro-intestinal tract. Diseases of the respiratory tract. Nephritis and nephrosis. Disturbances caused by excessive heat. The anemias. Blood disturbances other than the anemias. Circulatory disturbances. Eclampsia and hyperemesis gravidarum. Genito-urinary infections and stone. Diseases of the nervous system. Geriatrics. Diseases of the skin. Acute poisoning. Burns. Sulfonamide toxicity. Bibliography. Index.

Note: A book of reference on the medical treatment of disease for the practicing physician. It was designed also with the needs in mind of the medical student studying applied therapeutics. The plan of approach is to introduce the consideration of each disease with a brief summary of knowledge relating to causes, symptoms, and other pertinent clinical data, then to give the treatment, or treatments, indicated and the application. Prescriptions are given and all types of nonoperative therapy described, including diet and physical therapy, immediate care of the patient, care during the course of the disease, home care, prevention and treatment of complications, and nursing care. The fourth edition is more than 200 pages larger than the third edition. Nearly 50 diseases and conditions were added. The use of the sulfonamide group in 40 diseases was included and the chapter added on sulfonamide toxicity. There is a new chapter on geriatrics, a new discussion of malaria, and a revised chapter on use of vitamins.

CECIL, RUSSELL LA FAYETTE, AND FOSTER KENNEDY, EDITORS

A textbook of medicine by American authors. Sixth edition, revised and entirely reset. Phila-

delphia: W. B. Saunders Company, 1943. 1566 p. illus. (part col.) 26 cm. \$9.50. 2036

Contents (abridged): Infectious diseases. Diseases of doubtful or unknown origin. Diseases of allergy. Diseases due to physical agents. Diseases due to chemical agents. The intoxications. Deficiency diseases. Diseases of metabolism. Diseases of the digestive tract. Diseases of the respiratory system. Diseases of the kidneys. Diseases of the spleen and reticulo-endothelial system. Diseases of the ductless glands. Diseases of the locomotor system. Diseases of the nervous system. Normal values for clinical examination. Index.

Note: One hundred fifty-four American teacher-specialists wrote this book as a text for medical students and as a reference for practicing physicians. Its purpose is to present the fundamental facts pertaining to medical diseases, followed by descriptions of diagnostic and therapeutic procedure. Diseases are discussed from the viewpoint of definitions, epidemiology, etiology, bacteriology, morbid anatomy, pathology, symptoms, diagnosis (physical, instrumental and laboratory), treatment, prognosis, and prophylaxis. Bibliographies follow the discussion of each disease. In the sixth edition, a number of subjects not previously included have been discussed, namely, virus pneumonia, Salmonella suispestifer infection, Friedlander's bacillus infections, hirundinea, contact dermatitis, aviation medicine, seasickness and air sickness, undernutrition, pathologic physiology of circulatory failure and cardiac pain, circulatory collapse and shock, rheumatic heart disease, senile osteoporosis. In addition 31 discussions have been completely rewritten. The physiologic approach has been strengthened by the adding of introductory chapters on the physiologic principles underlying rickettsial diseases, pneumococcal infections, deficiency diseases, diseases of metabolism, diseases of the digestive system, the blood, the cardiovascular system, and of the ductless glands. The format has been redesigned and text-matter set two columns to the page. Additional illustrations have also been included.

EMERSON, CHARLES PHILLIPS

A textbook of medicine. Philadelphia: J. B. Lippincott Company, 1936. 1296 p. 26 cm. \$4.50. 2037

Contents (abridged): Specific infectious diseases. Diseases caused by animal parasites. Diseases due to physical agents. Diseases due to drugs and poisons. Serum diseases and allergic (atopic) conditions. Diseases of metabolism. Deficiency diseases. Diseases of the ductless glands. Diseases of the blood-building organs, spleen, and reticulo-endothelial system. Psychoneurotic reactions. Diseases of the organs of respiration: Respiratory passages. Lungs. Pleura, mediastinum, and diaphragm. Diseases of the circulatory system. Diseases of the gastrointestinal canal. Diseases of the peritoneum and mesentery. Diseases of the pancreas. Diseases of the liver, gallbladder, and bile passages. Diseases of the kidney and bladder. Diseases of the bones, joints, and muscles. Diseases of the nervous system: General nervous disturbances. Diseases of the brain. Cerebral nerves. The spinal cord. Spinal nerves. Peripheral nerves. Psychoneurotic disorders. Index.

Note: The plan of this text is to present internal medicine in terms of clinical pictures of diseases, and to explain these by the findings of pathology, biochemistry, and the other preclinical sciences, rather than to emphasize the latter, mentioning symptoms as logical consequences of disturbances in these fields. An attempt is made to portray clearly the syndrome which each disease presents, together with the contributions of the preclinical sciences which are appended in footnotes or small-type paragraphs. Each disease is described according to historical note, incidence, symptoms, morbid anatomy, diagnosis, prognosis, and treatment. References are given for each disease discussed, and there are short biographical notes throughout the text. A possible disadvantage for students is the fact that there are no drawings or illustrations of any kind.

HUGHES, DANIEL E.

Hughes' Practice of medicine. Sixteenth edition. Revised and edited by Burgess Gordon. With sections on nervous and mental diseases, by Harold D. Palmer and on diseases of the skin, by Vaughn C. Garner. Contributors: sections on clinical methods, by Robert Charr; articles on endocrinology, by Abraham E. Ra-

koff; legal aspects of medicine, by Louis M. Stevens. Philadelphia: The Blakiston Company, 1942. 791 p. illus. (part col.) 23 cm. \$5.75. 2038

Contents (abridged): Infectious diseases. Virus infections. Diseases due to Rickettsiae. Mycotic infections. Diseases due to Protozoa, spirochetes, and Metazoa. Diseases of doubtful etiology. Diseases of allergy. Diseases due to physical agents. The intoxications. Diseases due to chemical agents. Deficiency diseases. Diseases of the locomotor system, of the bones, of metabolism. Diseases of the digestive system, liver, bile passages and gall bladder. Diseases of the pancreas, the peritoneum, and urinary organs. Diseases of the blood, spleen, and ductless glands. Diseases of the circulatory system, respiratory system, and nervous system. Mental diseases. Geriatrics. Diseases of the skin. Index.

Note: A reference handbook for the general practitioner, presenting in concise form the clinical features and the treatment of disease. The textual material is grouped in a convenient orderly manner, with the more common illnesses treated first within each section. Synonyms, definition, causes, morbid anatomy, symptoms, complications, diagnosis, prognosis, and treatment are given for each disease described. To maintain brevity, references to source material are kept to a minimum and controversial matters are avoided. The sixteenth edition has been enlarged to include new material on the infections, chemotherapy, and endocrinology. Among the new subjects are focal infections, virus pneumonia, coccidiosis, marihuana habit, sulfonamide poisoning, war-gas poisoning, arsenic poisoning, riboflavin deficiency, hyperinsulinism, acrocyanosis, lung injuries due to air-raids, myasthenia gravis, progressive muscular dystrophy, and family periodic analysis.

MCCOMBS, ROBERT PRATT

Internal medicine in general practice. Philadelphia: W. B. Saunders Company, 1943. 694 p. illus. (part col.) 24 cm. \$7.00. 2039

Contents: Fundamentals of diagnosis. Disorders of the heart. Hypertension and diseases of the kidney and urinary tract. Disorders of the gastrointestinal tract. Nutritional deficiencies. Anemias, blood dyscrasias and allied diseases. Infectious diseases. Use of sulfonamide drugs in treatment of infectious diseases. Chronic lung diseases. Rheumatic diseases. Endocrine disorders. Allergic diseases. Common neurologic and psychiatric problems. Index.

Note: The author has based his book on his personal experience as an instructor of general practitioners in a postgraduate course in internal medicine. His aim has been to answer the questions and solve the problems which this experience showed him confront the practitioner most frequently. The book is not intended to be an exhaustive treatise, but rather more of a handbook of accepted diagnostic and therapeutic principles and their application. Treatment has been especially emphasized and actual prescriptions included. In this respect the coverage of newer therapeutic agents, such as the sulfa drugs, should be noted. One hundred sixty-one illustrations on 114 figures are integrated with the text.

MAYO CLINIC, ROCHESTER, MINNESOTA

Collected papers (1943) of the Mayo Clinic and the Mayo Foundation. Volume 35. Philadelphia: W. B. Saunders Company, 1944. 875 p. illus. 25 cm. \$11.00. 2040

Contents (abridged): Alimentary tract. Genito-urinary organs. Ductless glands. Blood and circulatory organs. Skin and syphilis. Head, trunk and extremities. Chest. Brain, spinal cord and nerves. Radiology and physical medicine. Anesthesia and gas therapy. Miscellaneous. Index of contributors. Index of subjects.

Note: Each year a volume is published in order to bring together under one cover the papers of the members of the staff of the Mayo Clinic and Mayo Foundation. Many of these papers are reproduced in full; others are abridgments and abstracts, and some are listed by title only. The result is to make available to the physician a valuable coverage of all the new advances that have taken place at this important medical center during the previous year. Since attention is given to medical subjects, surgery, and the specialties, the appeal of the volume is to all branches of medical science—practitioner, surgeon, and specialist. Material from one volume is never repeated in a subsequent one, consequently each year's Mayo Clinic volume is a completely new book. The edition is limited and an issue is never reprinted.

MEDICAL CLINICS OF NORTH AMERICA

Symposium on recent advances in medicine. Philadelphia: W. B. Saunders Company, 1944. 315 p. illus. 23 cm. (Medical clinics of North America, November, 1944) Sold only by a year of six consecutive numbers. Cloth, \$16.00; paper, \$12.00 per year of six consecutive numbers. 2040a

Contents: From hospitals of Philadelphia: Confined air as a vehicle of infection; current progress in air sanitation, by Stuart Mudd. Recent advances in otolaryngology, by George M. Coates and M. Valentine Miller. Recent advances in cardiovascular disease, by Thomas M. McMillan and Samuel Bellet. Recent advances in gastro-enterology, by E. Ruth Breitwieser and T. Grier Miller. Treatment of thyrotoxicosis with thiouracil, by Karl E. Paschkis. The leukemias, by F. R. Miller and D. L. Turner. Pituitary myxedema, by Charles William Dunn. Rabies: some practical questions and answers, by Richard A. Kern. Observations on the epidemiology and bacteriology of acute respiratory tract infections among the armed forces of the tropical South Pacific, by Robert F. Norris. From the Pennsylvania Hospital Overseas: Introduction, by Garfield G. Duncan. Practical considerations of malaria, by Joseph B. Vander Veer and Carl A. Hedblom, Jr. Laboratory diagnosis of malaria, by Eric Denhoff. Scrub or mite typhus, by Garfield G. Duncan. The dengue fevers, by David O. Ewing. Military aspects of leprosy, by William U. McClenahan. Primary atypical pneumonia as seen in the tropics, by Harlan F. Haines and Clark M. Forcey. The dysenteries, by John J. Calarco. Anxiety neurosis manifested by cardiovascular symptoms (neurocirculatory asthenia), by Joseph B. Vander Veer. Fractional gastric analysis: a simplified technic with interpretation of results, by Alexander Rush. Thyroid disease seen in soldiers overseas, by Orville C. King. Treatment of common skin diseases in an army hospital in the tropics, by Thomas W. Clark. The anxiety neuroses manifested by gastro-intestinal symptoms, by Alexander Rush. Index.

Note: *Medical clinics of North America* is published six times a year. Each issue is devoted to a symposium on a topic of current importance. A group of Philadelphia doctors (some of them serving overseas with the U. S. Army) wrote this symposium in order to bring to the practicing physician information on diagnosis and treatment of nervous and mental disorders according to today's methods and concepts. The data are given in specific language with the idea of setting forth clinical details as concisely as is consistent with completeness. There are illustrations, and bibliographies are placed at the ends of clinics.

MUSSER, JOHN HERR, EDITOR

Internal medicine; its theory and practice in contributions by American authors. *Third* edition, revised. Philadelphia: Lea & Febiger, 1938. 1428 p. illus. 25 cm. \$10.00. 2041

Contents: Part I, Infectious disease. Part II, Systemic diseases. Part III, Diseases of nutrition. Allergy. Metabolism. Physical and chemical agents. Part IV, Diseases of the nervous system.

Note: A practical treatment of the subject for medical students and physicians. The authors are members of the faculties of several important medical schools. This edition has been extensively revised and over 130 pages of new text have been added.

THE NELSON MEDICINE. Prepared under the direction of an advisory board by the world's leading medical authorities, W. W. Herrick, editor-in-chief. New York: Thomas Nelson and Sons, 1944. 9 v. illus. (part col.) 26 cm. \$100.00. 2041a

Contents (abridged): Volume I, Infectious diseases. Volume II, Infectious diseases. Infections due to Protozoa. Diseases due to vegetable parasites. Diseases due to animal parasites. Diseases due to chemical and organic agents. Diseases due to physical agents. Volume III, Diseases characterized by marked metabolic or deficiency disturbances. Diseases associated with disturbances of the endocrine glands. Diseases associated with disturbances of the lymph glands. Diseases of the respiratory system. Gynecology and obstetrics: medical aspects. Volume IV, Diseases of the blood. Diseases of the circulatory system. Diseases of the kidney. Volume V, Diseases of the digestive tract. Diseases of the

muscles, bones, and joints. Volume VI, Diseases of the nervous system. Volume VII, Administrative medicine. Volume VIII, Surveys of current literature. Volume IX, Index.

Note: A loose-leaf encyclopedia which is designed to present a comprehensive and up-to-date survey of present-day medicine. The work was planned by a staff of eight specialists from leading American medical schools, with 244 contributing physicians and professors of medicine in America and Great Britain. The subject matter is not arranged in alphabetical order as in the usual form of encyclopedia, but is grouped by chapters according to disease classification. Each different aspect of the disease has been covered by a single specialist in the field and the discussion gives diagnosis and differential diagnosis, with special emphasis on treatment. Follow-up results are stressed and tested new procedures are advised. Extensive bibliographies are given at the end of most of the chapters, which number between 40 and 60 per volume with the exception of the last two which contain surveys of current literature and a detailed index. A feature of the work is its loose-leaf format by means of which new and revised pages, issued semi-annually, may be inserted to keep the set up to date. These revisions may be contracted for at the time of original purchase or obtained separately from the publisher at an extra cost of \$15.00 annually. Volume VII, *Administrative medicine*, 839 p., is also sold separately for \$10.50 and covers the organized care of the sick, public health services, and other agencies.

OSLER, SIR WILLIAM, BART.

The principles and practice of medicine, originally written by Sir William Osler, bart., designed for the use of practitioners and students of medicine, by Henry A. Christian. Fifteenth edition. New York: D. Appleton-Century Company, Incorporated, 1944. 1498 (i.e. 1559) p. illus. (part col.) 24 cm. \$9.50. 2042

Contents: Introduction. Psychosomatic medicine. Functional diseases of the nervous system. Infectious diseases. Parasitic infusoria. Metazoan parasites. Insects and reptiles. Diseases due to physical agents. The intoxications. Deficiency diseases. Diseases of metabolism. Diseases of the digestive system. Diseases of the respiratory system. Diseases of the urinary tract. Diseases of the blood. Diseases of the spleen. Diseases of the lymph nodes. Diseases of the heart. Diseases of the arteries. Diseases of the veins. Vasomotor and trophic diseases. Diseases of the glands of internal secretion. Diseases of the locomotor system. Organic diseases of the nervous system. Index.

Note: The first eight editions were written by the late Sir William Osler, the next four editions by the late Dr. Thomas McCrae and the last three editions by present author. Designed for the use of practitioners and students of medicine. Best known for its fine clinical descriptions of disease and complete coverage of the entire field of internal medicine. The current edition was revised extensively to include new knowledge in the field of chemotherapy, and give more extended discussions of tropical diseases and other conditions resulting from war mobilization and large numbers of our soldiers and sailors being sent to tropical countries.

PROPST, DUANE WILLARD

The patient is the unit of practice. Springfield, Ill.: Charles C. Thomas, 1939. 219 p. illus. 22 cm. \$3.50. 2044

Contents: The nature of disease: Historical concepts. Constitution and heredity. Race. Constitutional disease potentials. Man's adaptive stability. Environmental adaptation. Disequilibrium. The nature of disease. The diagnostic or working hypotheses: Impressionistic diagnosis. Objective diagnosis. History as diagnosis. Diagnosis by physical examination. Diagnosis by special tests. Anatomical diagnosis. Etiological diagnosis. Therapeutic and absolute diagnosis. The formulation of a working hypothesis. Therapeutic principles: Rest. Diet. Symptomatic treatment. Psychotherapy. Bibliography. Glossary. Index.

Note: The nature of disease, the diagnostic hypotheses, and the principles of treatment are considered from the point of view of the patient as a whole in reaction to his environmental field.

REHBERGER, GEORGE EDWARD

Lippincott's quick reference book for medicine and surgery; a clinical, diagnostic and

therapeutic digest of general medicine, surgery and the specialties, compiled systematically from modern literature. Twelfth edition. Philadelphia: J. B. Lippincott Company, 1944. 1460 p. illus. 26 cm. \$15.00. 2045

Contents (abridged): General medicine and surgery, including nervous and children's diseases. Gynecology. Genito-urinary diseases. Obstetrics. Skin diseases. Eye diseases. Ear diseases. Nose diseases. Throat diseases. Orthopedics. Alphabetical list of drugs, with their dosage, solubility, method of administration, physiologic and toxic action, and uses. Administration of anesthetics. Pharmacologic index. Equivalents of metric and apothecaries' weights and measures. Index of subject headings.

Note: Each disorder or disease is treated alphabetically under each of the general headings mentioned above. First is given a distinguishing or diagnostic definition of the affection with occasional pictures and diagnostic laboratory tests where required, followed by a list of causes, prognosis, and recommended treatment. An appendix is added to each section presenting a suggested form for the general history and examination of the patient, plus the equipment or armamentarium required in particular specialized treatment and a list of the drugs mentioned in the text. The sections on gynecology and genito-urinary diseases have been rewritten, with new material added, in the twelfth edition, and the list of drugs has been revised to conform with the twelfth edition of the United States Pharmacopoeia and the seventh edition of the National Formulary. A possible disadvantage for the student is the absence of bibliographic material.

REIMANN, HOBART ANSTETH, EDITOR

Treatment in general medicine. Contributors: E. V. Allen, Bernard Alpers, Edward L. Bauer [and others]. Third revised edition. Philadelphia: F. A. Davis Company, 1944. 5 v. illus. 25 cm. \$40.00. 2045a

Contents (abridged): Volume I, Infectious diseases. Coccal diseases. Bacillary diseases. Pulmonary tuberculosis. Respiratory tract. Diseases caused by filtrable viruses, by fungi and rickettsia, by spirochetes, protozoa, and metazoa. Insects in relation to human disease. Diseases of unknown etiology. Diseases of the kidneys. Volume II, Allergy or hypersensitiveness. Disorders of the endocrine glands. Metabolism. The heart, blood vessels, lymph vessels, blood, and blood-making organs. Hemorrhagic diseases. Pregnancy and labor. Abnormal obstetrical conditions. Gynecological conditions. Volume III, Diseases of nutrition. Amino acid alimentation. Medical care of infants and children. Contagious diseases of childhood. Management and treatment of the aged. Physical and toxic agents. Diseases of the skin. The genito-urinary tract. Technical therapeutic procedures. Volume IV, Diseases of the gastrointestinal tract. The nervous system. The mind. The patient with cancer. Irradiation treatment. Malignant and benign lesions. Physical therapy. Massage. Manipulation. Exercise. Hydrogymnastics. Muscle-stimulating currents. Ultraviolet radiation. Rest in treatment. [Volume V.] Desk index.

Note: A reference work for students and general practitioners on modern therapeutics, in which special attention is given to the new methods of approach, especially in regard to etiological diagnosis. The necessity for a knowledge of the causative factors and natural history of the disease is stressed throughout. The importance of laboratory analyses in diagnosis is also emphasized, but at the same time attention is given to the patient's personality and his psychological reaction to disease. Definition, history, geographical distribution, etiology and epidemiology, pathology, symptoms, diagnosis, prognosis, prevention, and treatment are given for each disease described. The third edition contains new material on the diseases of the blood, treatment of syphilis, penicillin, thiouracil, plasma, amino-acid therapy, sulfonamide chemotherapy, and antibiotic therapy. The pagination has also been improved to facilitate use of the extensive index, and the text divided into four volumes instead of three as in previous editions.

STEELE, JOHN MURRAY, EDITOR

Advances in internal medicine. Volume 1. New York: Interscience Publishers, Inc., 1942. 292 p. illus. 23 cm. \$4.50. 2045b

Contents (abridged): Preface. Contents. Use of Miller-Abbott tube in diagnosis and treatment of disorders of gastro-intestinal tract, by W. Osler Abbott. Use of insulin and protamine insulin

in treatment of diabetes, by Paul H. Laviates. Sympathetic nervous control of peripheral vascular system, by Robert W. Wilkins. Antibacterial action of the sulfonamide drugs, by Colin M. MacLeod. Choice of sulfonamides in treatment of infection, by Chester S. Keefer. Infections of urinary tract, by Lowell A. Rantz. Present trends in study of epidemic influenza, by Thomas Francis, Jr. Hypertension: review of humoral pathogenesis and clinical treatment, by Irvine H. Fage and A. C. Corcoran. Nephrosis, by Lee E. Farr. Riboflavin deficiency, by Harold Jeghers. Author index. Subject index.

Note: The purpose of this volume, and of the projected series, is to furnish from time to time an informal summary of the progress made in various fields of internal medicine. According to plan, the articles comprising this first volume have been written by individuals who have themselves contributed to this progress. An attempt has been made to maintain a style which is sufficiently simple and broad to be intelligible to persons whose main interests lie outside the scope of the particular subject, yet sufficiently detailed to be of use to persons working in the field. The book is thus intended not only for specialists along these particular lines but also for the medical profession as a whole.

WORCESTER, ALFRED

The care of the aged, the dying and the dead. Second edition. Springfield, Ill.: Charles C. Thomas, 1940. 77 p. 18 cm. \$1.50. 2046

Contents: Care of the aged. Care of the dying. Care of the dead.

Note: The lectures comprising this small volume were written primarily for medical students, but they are also intended for practicing physicians, especially the younger men. The author feels that the modern practice of substituting hospital internship for the old-time apprenticeship to general practitioners, while advantageous in respect to their training in the science of medicine, has deprived the modern doctor of the opportunity to learn certain phases of the art of medicine. These pages contain some of the valuable information which formed part of the education of the family physician and is intimately related to the high privileges of medical service.

YATER, WALLACE MASON

Fundamentals of internal medicine. Second edition. New York: D. Appleton-Century Company, Incorporated, 1944. 1204 p. illus. (part col.) 25 cm. \$10.00. 2047

Contents: Diseases of the heart, blood vessels, kidneys, blood and blood-forming organs, respiratory system, digestive system, locomotor system, endocrine glands, spleen and reticulo-endothelial system, metabolism, allergy. Diseases due to intoxications, physical agents, vitamin deficiency and malnutrition. The infectious diseases. Diseases of the nervous system. Mental diseases. Diseases of the skin, ear, eye. Dietetics. Symptomatic and supportive treatment. Clinical values and useful tables. The physician himself. Index.

Note: Written for medical students, general practitioners, internists, and specialists in fields other than internal medicine. Primarily intended to present the various subjects of internal medicine as simply and concisely as possible, omitting all but the most commonly accepted data and theories of etiology, pathogenesis, symptoms, diagnosis, course, and treatment. The book is intended to provide the foundation upon which the superstructure of more detailed and extensive knowledge may be built. The writing of the book came about through the realization of the author that medical students are so overburdened with reading material and that physicians are so busy caring for patients that they cannot find time to study the more detailed, larger textbooks of medicine. Each disease is treated according to a standard pattern. Each section begins with an introductory thesis on general and special features. Physiological and pathological considerations are discussed for each major disease. Tables of differential diagnosis have been prepared and tables of other kinds are included. There are 275 illustrations. A special feature is the inclusion of many topics of military medical importance. The chapter on "The Physician himself" includes information and advice to the medical graduate on postgraduate training and study, licensure, daily practice, medical ethics, and many other subjects.

YEAR BOOK OF GENERAL MEDICINE

The 1944 Year book of general medicine, edited by George F. Dick, J. Burns Amberson, George W. Minot, William B. Castle, William

D. Stroud, and George B. Eusterman. Chicago: The Year Book Publishers, Inc., 1944. 768 p. illus. 18 cm. \$3.00. 2048

Contents: Part I, Infectious diseases: Military and tropical medicine. Arthritis. Carrión's disease. Common cold. Hepatitis. Histoplasmosis. Influenza. Malaria. Meningococcal infections and meningitis. Poliomyelitis. Rabies. Rheumatism and rheumatic fever. Smallpox. Streptococcal infections. Tetanus. Toxoplasmosis. Typhus. Virus diseases. Penicillin. Part II, Diseases of the chest: Microscopic anatomy of the lungs. Respiratory function. The pneumonias. Tuberculosis. Coccidioidomycosis. Actinomycosis. Sarcoidosis. Pulmonary fibrosis and emphysema. Neoplasms. Trauma. Diseases of the pleura. Asthma. Therapy and management of various respiratory conditions. Diagnostic methods and signs. Part III, Diseases of the blood and blood-forming organs: General considerations. Transfusions of blood and blood substitutes. Hemolytic anemias. Pernicious anemia. Hypochromic anemias. Other anemias. Polycythemia. Infectious mononucleosis. Agranulocytosis. Leukemias. Purpura and telangiectasia. Hemophilia. Prothrombin deficiency. Diseases of the kidney. Part IV, Diseases of the heart and blood vessels: Etiologic, anatomic, and physiologic diagnosis. Electrocardiography. Treatment. Miscellaneous. The peripheral blood vessels. Part V, Diseases of the digestive system and metabolism. Diseases of metabolism and nutrition. Index.

Note: Each issue of this illustrated annual digest contains abstracts of 480-550 articles selected by the editors from the current international periodical literature of medicine. The abstracts stress diagnostic and therapeutic details of upwards of 150 different disease conditions commonly encountered in medical practice, and reference information on the original articles is included. Personal comments by the editors, appended to many articles in smaller-sized type, weigh the advances presented in the light of their own experience and correlate new basic concepts with the problems which the general practitioner faces.

Clinical Medicine

ABRAHAMSON, EMANUEL MAURICE

Office clinical chemistry; a laboratory guide for the practitioner and hospital. New York: Oxford University Press, 1940. 245 p. illus. 24 cm. (Oxford medical publications) \$5.00. 2049

Contents: Introduction—Laboratory technique. Preparation of reagents. Examination of blood. Examination of urine. Functional tests. Toxicology. Appendix. Index.

Note: This book provides a set of brief and clear directions for performing the laboratory tests likely to be encountered in office practice. Investigations which find their proper place in the large, well-equipped hospital fall beyond the scope of this work, but a few procedures that probably will not be used in strictly office practice have been included. Each method is accompanied by a flow sheet indicating each piece of apparatus and reagent and pointing out by means of numbered lines the step-by-step procedure. An attempt has been made in the interest of economy to eliminate a number of reagents and standards by using the same standard for the determination of urea nitrogen, non-protein nitrogen, albumin, globulin, and fibrinogen; the same apparatus is also used wherever possible for most of the determinations.

BECK, REGENA COOK

Laboratory manual of hematologic technic, including interpretations. With a foreword by Frank W. Konzelmann. Philadelphia: W. B. Saunders Company, 1938. 389 p. illus. 24 cm. \$4.00. 2050

Contents: Collection of blood specimens; routine examinations; composition of normal blood. Study of clotting mechanism. Estimation of hemoglobin. Enumeration of cells. Determination of indexes. Histogenesis of blood cells. Study of stained cells. Leukocytosis and leukopenia. Differential leukocyte counts. Special studies used in hematology. Diseases in which erythrocytes are chiefly affected. Diseases in which leukocytes are chiefly affected. Animal parasites in the blood. Blood findings in infants and children. Effect of chemicals, radioactive substances, and splenectomy on the blood picture. Appendix: Additional hematologic terms. Index.

Note: This manual is for the laboratory worker, the physician in interpreting laboratory reports, and for the medical student. It presents the methods found preferable by the author in clinical work and some others so commonly used as to require mention. Emphasis is placed on technique. Each chapter is prefaced by a tabulated review of its contents. Terminology and definitions, and questions conclude each chapter.

BLOCK, RICHARD JOSEPH, AND DIANA BOLLING

The determination of the amino acids. Revised edition. Minneapolis, Minn.: Burgess Publishing Co., 1940. 58 p. illus. 27 cm. Paper, \$2.00. 2051

Contents: Preface. Table I—Elementary composition of the amino acids. Table II—Essential amino acid composition of some important proteins. The determination of arginine, histidine, and lysine. The determination of tyrosine, tryptophane, phenylalanine, dihydroxyphenylalanine, diiodotyrosine, and thyroxine. The determination of cystine, cysteine, methionine, and sulfur. Determination of threonine and alanine. The estimation of leucine, isoleucine, and valine. Determination of the dicarboxylic amino acids. Determination of proline and hydroxyproline. Determination of glycine. General methods. Miscellaneous references on amino acids.

Note: This monograph describes methods of determination of amino acids which have given satisfaction in use at New York State Psychiatric Institute and Hospital. By use of these methods it is possible to carry out duplicate or replicate estimations of nitrogen, sulfur, and 14 amino acids in less than two weeks time. The exact preparation of reagents is included in the text to assist technicians in these determinations.

BRAY, WILLIAM EDWARD

Synopsis of clinical laboratory methods. Ninety-three text illustrations, twenty color plates. Third edition. St. Louis: The C. V. Mosby Company, 1944. 528 p. illus. (part col.) 20 cm. \$5.00. 2051a

Contents: General rules. Laboratory examinations of value in various cases. Urinalysis. Hematology. Blood chemistry. Gastric analysis. Feces and intestinal parasites. Puncture fluid examination. Cerebrospinal fluid examination. Sputum. Bacteriology. Water and milk examinations. Serology. Basal metabolism tests. Allergy tests. Poisons and foreign substances. Surgical pathology. Indicators, stains and staining solutions. Reagents. Removal of laboratory stains. Atomic weights, table of equivalents, table of normals. Index.

Note: The object of this synopsis is to bring together for ready reference the more recent information and the most frequently used methods of laboratory diagnosis, for the use of medical students and clinical laboratory technicians. Various methods are outlined in step-by-step procedure for each of the tests described, including methods of collection of specimen, physical, chemical, and microscopic examinations, technique of staining, expected reactions and results, together with additional references for each test as well as the original source material and eponymic name. Among the new material added in this edition are tests for Rh and anti-Rh, Sulkowitch's tests for regulating hyperparathyroidism, cold agglutins, and new tests for the classification of streptococci.

BROWN, ANSON LEE

Technical methods for the technician. Third edition. Columbus, Ohio: The author, 1944. 706 p. illus. (part col.) 22 cm. \$10.00. 2052

Contents: Introduction. The microscope. Simple laboratory operations. Urinalysis. Blood examinations. Blood chemistry. Serology. Agglutination tests. Miscellaneous blood tests. Miscellaneous examinations. Tissues. Important laboratory data. Index.

Note: A manual for medical students, doctor's assistants, and beginning laboratory technicians, outlining processes in the clinical laboratory. Emphasis is placed upon techniques, interpretations are given for most procedures, and detailed lists of diseases in which various tests have pathologic significance are provided. This third edition has been revised to include methods and procedures discovered since 1941. In the section on serology the author's test for syphilis is included for the first time, and a new section entitled "Important laboratory data" lists over one hundred texts which are directly or indirectly concerned with laboratory practice.

GALLOWAY, JOSEPHINE M.

Handbook of laboratory technic; clinical and diagnostic interpretations of routine procedures. 46 illustrations. Philadelphia: F. A. Davis Company, 1941. 258 p. illus. 22 cm. \$3.00. 2053

Contents (abridged): Part I, Laboratory technic: Hematology. Blood examination. Blood chemistry and findings. Urinalysis and findings. Sputum and findings. Gastric analysis and findings. Cerebrospinal fluid and findings. Basal metabolic rate and findings. Feces, examination and findings. Pathogenic bacteria. Where pathogenic bacteria are frequently found. Eye smears and findings. Fungi and findings. Part II, Summary of laboratory findings: Diseases with their respective laboratory findings. Part III, New laboratory procedures: Urinalysis. Blood determinations. The sulfonamides. Tests for vitamin C and prothrombin. Biography. References. Index.

Note: Deals with the transition of inexperienced laboratory technicians in their adjustment from the theoretical to the practical field, and stresses not only technical skill but a correlative knowledge as well, since the physician often calls upon the technician to suggest further confirmatory or diagnostic tests.

GERSHENFELD, LOUIS

Urine and urinalysis. Illustrated with 42 engravings. Second edition. Philadelphia: Lea & Febiger, 1943. 304 p. illus. 20 cm. \$3.25. 2054

Contents: Part I, General considerations: The kidneys and other urinary organs. Urine. Physical (macroscopic) characteristics. The chemical composition of urine. Abnormal or pathological constituents of urine. Part II, Urinalysis: Qualitative tests of urine. Quantitative estimations of urine. Microscopic examination of urine. Part III, Special urinary tests: Urinary calculi. Urinary tests (either infrequently performed or of doubtful clinical value). Tests for kidney function. Appendix: Apparatus used only occasionally in routine urinalyses. Reagents.

Note: A monograph on urinalyses for graduates in pharmacy, chemistry, bacteriology and allied professions, the nursing profession, and practitioners in medicine interested in the performance of these tests. The shortcomings of many of the tests are clearly indicated for the diagnostician, and data are supplied that will enable him to place the proper evaluation on the results that may be obtained from them. The book is useful to the laboratory worker also.

GRADWOHL, RUTHERFORD BIRCHARD HAYES

Clinical laboratory methods and diagnosis, a textbook on laboratory procedures, with their interpretation. Third edition. With 726 text illustrations in both volumes and 57 color plates. St. Louis: The C. V. Mosby Company, 1943. 2 v. illus. (part col.) 26 cm. \$20.00. 2055

Contents: Volume I. General considerations. Urine analysis. Blood chemistry. Hematology. Blood groups and transfusion. Gastric analysis. Examination of puncture fluids. Of sputum. Special tests. Feces. Volume II. Bacteriologic applications to clinical diagnosis. Serology. Basal metabolism. Postmortem examinations. Tissue cutting and staining. Preparation of museum specimens. Toxicologic technic. Detection of crime by laboratory methods. Parasitology and tropical medicine. Minimum supplies, equipment, and reagents for the pathologic laboratory.

Note: This book was written to help the clinician, laboratory worker, and medical student learn laboratory diagnosis. The standard technique of accepted procedures is given in detail, together with an interpretation of the data obtained by standard tests. The amount of material added in this third edition necessitated its division into two volumes. They are paged continuously and an index to the complete work is given at the end of each volume. The following are among the sections revised or rewritten: blood chemistry methods illustrating the use of the photoelectric colorimeter; liver function tests; blood and urinary diastase; blood clotting and prothrombin time; infectious mononucleosis, agranulocytosis, polycythemia; the Rh factor, M and N agglutinogens, subgroups of A; methods of making blood sera, including anti-Rh; use of blood plasma in shock; fluorescence method of examining tubercle bacilli; vitamin assay and identification; examination of estrogenic substances; identification of types of pneumonia; new work in anaerobiasis and brucellosis; examination of specimens of typhoid, paratyphoid and dysentery group; penicillin; Mazzini test; new contributions to tissue cutting

and staining; helminthology and virology. New illustrations have been added, including original drawings of the life cycles of parasites.

HOFFMAN, WILLIAM SAMUEL

Photometric clinical chemistry. New York: William Morrow and Company, 1941. 254 p. illus. 21 cm. \$3.00. For sale by Central Scientific Co., 1700 Irving Park Road, Chicago 13, Ill. 2056

Contents (abridged): Fundamental principles of photometry and the manipulation of the photometer. Laboratory apparatus and its use. Special laboratory technique. The determination of hemoglobin. The determination of glucose. The determination of total nitrogen, non-protein nitrogen, and albumin and globulin nitrogen. The determination of urea by direct nesslerization and the determination of urea clearance. The determination of: Uric acid. Creatinine and creatine. Total cholesterol. Chloride. Inorganic phosphate. Serum phosphatase. Calcium. Magnesium. Sodium. Potassium. Lactic acid. Ascorbic acid. Sulfanilamide and its derivatives. Ethyl alcohol. Bilirubin in serum. Inorganic sulfate in serum. Index.

Note: Written primarily for the clinical technician who has only a limited knowledge of the principles of quantitative chemistry and of the development of the various methods, this book presents a system of colorimetric analysis of the physiologically and clinically important constituents of the blood and the urine by the use of the photometer. In the study of each blood constituent there is a brief critical essay on the chemical principles involved and on the limitations of the various methods. The range of normal concentrations for each constituent is indicated together with the trend of variations under altered conditions. The bibliographies at the end of each chapter refer chiefly to analytical procedures.

HUNTER, FRANCIS T.

Laboratory manual of the Massachusetts General Hospital. Third edition, thoroughly revised. Philadelphia: Lea & Febiger, 1939. 119 p. 18 cm. \$1.75. 2057

Contents: Chapter I. Examination of specimens. Chapter II. Collection of specimens. Chapter III. Special diagnostic procedures. Chapter IV. Therapeutic technique. Chapter V. Prophylactic measures. Appendix.

Note: This work, intended originally as a pocket outline of the routine laboratory work and bedside procedures done by a single group of internes, has made a much wider place for itself among students and practitioners everywhere. These are the procedures actually in use in the Massachusetts General Hospital.

KOLMER, JOHN ALBERT, AND FRED BOERNER

Approved laboratory technic; clinical pathological, bacteriological, mycological, parasitological, serological, biochemical and histological. Third edition. New York: D. Appleton-Century Company, Incorporated, 1941. 921 p. illus. 25 cm. \$8.00. 2058

Contents (abridged): Section I, General laboratory methods: The microscope. Housing, feeding, inoculating and autopsying animals. Prevention and emergency treatment of laboratory accidents. Section II, Clinical pathological methods: Examination of blood and urine. Hormonal diagnosis of early pregnancy and certain diseases of the testicle. Kidney function. Sputum. Examination of stomach contents, bile, liver functions, feces, exudates, transudates, and cerebrospinal fluid. Section III, Bacteriological methods: Sterilization of glassware. Preparation of culture media. General and diagnostic bacteriological methods. Mycological methods. Examination for parasites. Preparation of vaccines. Examinations of milk and water. Section IV, Serological methods: Collection of blood and serum. Blood tests. Complement-fixation tests. Allergy. Section V, Chemical methods: Colorimetry, nephelometry and scopometry. Standard volumetric solutions. Basal metabolism rate. Examination of blood, milk and other fluids. Toxicological examinations. Tissues and preparation of museum specimens. Appendix. Index.

Note: Intended for clinical pathologists and medical technicians, this book includes the technique of medical laboratory methods that are of proven value in general use, with sufficient

material on equipment, care and diseases of animals, and the prevention and emergency treatment of laboratory accidents to make a complete work for the medical laboratory. Emphasis has been placed on importance of using accurate and reliable apparatus and reagents.

KOLMER, JOHN ALBERT

616.07
1503 Clinical diagnosis by laboratory examinations. New York: D. Appleton-Century Company, Incorporated, 1944. 1239 (i.e. 1247) p. illus. (part col.) 25 cm. \$10.00. 2059

Contents: Clinical interpretation of examinations of blood. Urine. Blood chemistry. Glucose tolerance tests. Kidney function tests. Basal metabolic rate and iodine tolerance test. Toxicologic examinations. Liver function tests and bile examinations. Examinations of saliva and sputum. Stomach, duodenal contents and pancreas function tests. Examination of feces. Parasitologic examinations. Examinations of transudates, exudates and semen. Cerebrospinal fluid. Bacteriologic examinations. Mycologic examinations. Serologic examinations. Serologic examinations in syphilis. Immunologic and allergic skin tests. Examinations for hormones and vitamins. Biopsy examinations. Diseases of blood and hemopoietic system. Kidneys and urinary system. Venereal diseases. Stomach, intestines and pancreas. Liver and biliary tract. Cardiovascular system. Respiratory tract. Metabolism. Vitamin deficiency. Endocrine glands. Miscellaneous infectious diseases. Technic of laboratory examinations. Index.

Note: This book presents fully the clinical interpretations of laboratory examinations and their practical application in the diagnosis of disease; a brief section on laboratory technical methods sufficient for the needs of medical students and physicians; and methods for the proper collection of materials for laboratory examinations.

KRACKE, ROY RACHFORD, AND FRANCIS P. PARKER, EDITORS

A textbook of clinical pathology. *Second* edition. Baltimore: The Williams & Wilkins Company, 1940. 780 p. illus. (part col.) 23 cm. \$6.00. *1947* 2060

Contents (abridged): Preparation of blood films; venepuncture. Blood smears. Cell counting. Hemoglobin. Corpuscular volume. Erythrocyte determinations. Tests in diagnosis and management of hemorrhagic diseases. Anemia and polycythemia. Disorders of white cells. Blood groups. Blood parasites. Immunologic tests. Clinical chemistry. Tests for liver function. Urine examination. Renal function tests. Examination of feces; sputum; gastric contents. Cerebrospinal fluid. Skin and tissue scrapings. Venereal lesions. Serologic tests for syphilis. Assay of hormones and vitamins. Laboratory examinations in general practice. Appendices on laboratory equipment, maintenance, etc. Index.

Note: This textbook is designed primarily for accurate and comprehensive teaching of the subject to students of medicine and for the interpretation of laboratory findings for the practitioner of medicine. Emphasis is placed upon the interpretation of results. The second edition contains new procedures such as the determination of amylase and phosphatase in the blood, and sulfanilamide, sulfapyridine and sulfathiazol in blood and urine, as well as new procedures for anaerobic cultivation of bacteria and other cultures. There is also new material on hematology.

MATTICE, MARJORIE RUBENA

Chemical procedures for clinical laboratories, illustrated with 90 engravings and 2 colored plates. Philadelphia: Lea & Febiger, 1936. 520 p. illus. (part col.) 24 cm. \$6.50. 2061

Contents: Part I, The blood: General properties of blood. The acid-base balance of blood. Carbohydrates and ketones. Cholesterol and other lipids. Plasma proteins. Non-protein nitrogen and its components. Hemoglobin. Serum pigments & hepatic function tests. Inorganic constituents. Part II, The urine: General properties of urine. Carbohydrates, fats and ketones. Nitrogenous constituents. Bile derivatives and urinary pigments. Inorganic constituents of urine. Sediments and calculi. Tests for renal efficiency. Metals in biological specimens. Part III, Gastro-intestinal secretions: Saliva. Gastric juice. Duodenal juice and bile. The feces. Part IV, Miscellaneous biological fluids: Milk. The cerebrospinal fluid. Effusions and other body fluids. Appendix: Résumé of normal data, mathematical notes and calculations,

solutions and their use, standard abbreviations, color matching, reagents, atomic weights.

Note: Presents the organization of biochemical instruction of the New York Post-Graduate Medical School of Columbia University when the book was prepared. One of its outstanding characteristics is the number of original observations.

OSGOOD, EDWIN EUGENE

A textbook of laboratory diagnosis; with clinical applications for practitioners and students. Third edition. With twenty-seven figures in the text and ten colored plates. Philadelphia: The Blakiston Company, 1940. 676 p. illus. (part col.) 23 cm. \$6.00. *616.07*
60373 2062

Contents (abridged): Part I, Introductory considerations. Disorders of kidney and urinary tract. Of carbohydrate, protein and fat metabolism. Of the ductless glands. Gastrointestinal tract. Erythropoietic system. Leukopoietic system. Hemostatic system. Respiratory and cardiovascular systems. Central nervous system. Pregnancy and its complications. Part II, Laboratory tests. Note to instructors. Indexes.

Note: This book offers a systematic procedure for the laboratory diagnosis of each type of disease. In the first part of the book, each system is preceded by a review of its anatomy and physiology, biochemistry and pathology, and each disease is discussed from the point of view of the essential laboratory data required for diagnosis. In the second half, presenting in detail the various laboratory procedures and techniques, methods of preference are indicated. An index of diseases with suggestions as to the appropriate laboratory procedures, arranged in the order of significance, is included. The present edition has undergone complete revision, with rearrangement of various portions and addition of new material. Topics newly introduced or greatly expanded include hemoglobinemia, methemoglobinemia, sulfhemoglobinemia, the Addis sediment count, plasma and serum proteins, laboratory diagnosis of endocrine disturbances, liver function tests, nomenclature of cells of the blood and blood-forming organs, the unavoidable error in cell-counting methods, the photoelectric colorimeter, and many others. Other additions are tables for identification of blood and bone-marrow cells, new standards for leukocyte counts, a revised classification of leukocytoses and leukopenias, a discussion of the differential diagnosis of coma, etc. Many new methods of determination and new techniques are also given. The book is designed for use in teaching laboratory diagnosis (clinical pathology).

REINER, MIRIAM

Manual of clinical chemistry. Introduction by Harry Sobotka. With 18 illustrations. New York: Interscience Publishers, Inc., 1941. 296 p. illus. 18 cm. \$3.00. 2063

Contents: Blood analysis. Chemotherapy. Urine. Cerebrospinal fluid. Feces. Toxicological tests. Gastric analysis. Function tests (kidney, liver). Sex hormones. Vitamins.

Note: This syllabus of clinical laboratory tests is designed to meet the needs of the laboratory chemist, the analyzing pharmacist, and the practicing physician in the correlation between routine analysis and clinical observation. The manual gives at least one simple, accurate method for every practical contingency that may arise.

STITT, EDWARD RHODES, AND OTHERS

Practical bacteriology, haematology and animal parasitology, by E. R. Stitt, Paul W. Clough, and Mildred C. Clough. Ninth edition. Philadelphia: The Blakiston Co., 1938. 961 p. illus. (part col.) 22 cm. \$7.00. *3601*
st 569 2063a

Contents (abridged): Part I, Bacteriology. Part II, Haematology. Part III, Animal parasitology. Part IV, Pathological examinations of the various fluids and organs. Appendix. Index.

Note: This book gives details of the available types of laboratory procedure including the making of culture media; the study and identification of bacteria, parasites, insects, poisonous fish, and poisonous snakes; diagnosis of various diseases; examination of sputum, urine, feces, blood, pus, and spinal fluid; the preparation of microscopical specimens, etc. This edition has been extensively revised. More space has been given to interpretation and to the diagnostic significance of laboratory procedure.

TODD, JAMES CAMPBELL, AND ARTHUR HAWLEY SANFORD

616.67
+ 562.18
Clinical diagnosis by laboratory methods; a working manual of clinical pathology. Tenth edition, thoroughly revised. With 380 illustrations, 32 in colors. Philadelphia: W. B. Saunders Company, 1943. 911 p. illus. (part col.) 24 cm. \$6.00. 1947 2064

Contents: Use of microscope. Sputum. Urine. Blood. Clinical chemistry. Gastric and duodenal contents. Feces. Animal parasites. Pus, puncture fluids, animal inoculation. Miscellaneous examinations. Serodiagnostic methods. Bacteriologic methods. Vaccines. Biologic skin tests. Appendix. Index-outline of laboratory findings in important diseases. Index.

Note: Physicians, students, and laboratory workers in many fields use this book. It is a comprehensive presentation of the technique of the laboratory tests used in diagnosing disease, including interpretations of the findings of these tests. Important for the student and the practitioner desiring to make his own tests is the coverage of fundamentals. Also of interest is the Index-outline of laboratory findings. In this index, diseases are arranged alphabetically, with their outstanding laboratory characteristics and references to the pages of the book on which to find detailed instructions for making the laboratory test for the disease under consideration. References are given in the form of footnotes. There are 544 illustrations on 380 figures of which 32 are in colors. The tenth edition reflects the advances of recent years, and in the revision many new tests of importance were added and the entire book brought up to date. Seventy-two new illustrations were included.

UNITED STATES. SURGEON-GENERAL'S OFFICE

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Laboratory methods of the United States army. Edited by James Stevens Simmons and Cleon J. Gentzkow. Fifth edition. Illustrated with 103 engravings and 8 color plates. Approved by the Surgeon General of the United States Army. Philadelphia: Lea & Febiger, 1944. 823 p. illus. (part col.) 24 cm. \$7.50. 2065

Contents: Part I, Clinical pathology. Part II, Chemistry. Part III, Mycology. Part IV, Bacteriology. Part V, Rickettsiae and filtrable viruses. Part VI, Protozoology. Part VII, Helminthology. Part VIII, Medical entomology. Part IX, Pathology. Part X, Special veterinary laboratory methods. Part XI, Statistical methods.

Note: The new edition of this work represents the cooperative effort of twenty-five authorities, recording their experience in handling thousands of specimens. It offers a valuable reference work to officers and technicians who are called upon to assume responsibility for enormously expanded laboratory services. It describes practical methods for use in all medical and sanitary laboratories. In its present form it is an excellent handbook, not only for the armed services but for the medical practitioner, bacteriologist, sanitarian, and veterinarian. A feature is the section on statistical methods—the application of mathematics to the analysis of experimental or clinical data. This edition is enhanced by the inclusion of colored plates.

WETHERBEE, WINTHROP, JR.

Medicine in the outpatient department; an introductory handbook. With a foreword by George R. Minot. New York: P. B. Hoeber, Inc., 1938. 111 p. 15 cm. \$1.00. 2066

Contents: General considerations. Some hints on diagnosis. Clinical maxims important for the student to remember. Conditions recognizable at a glance. Treatment. Drugs used in the outpatient clinic. Prognosis. Appendix. Bibliography.

Note: A brief, pocket-size handbook intended as a summary of basic facts for the medical student beginning his out-patient work. Most of the material originally appeared in the *Journal of the Association of American Medical Colleges*, September, 1937. Common errors of diagnosis are pointed out and valuable rules for following up the study of each patient are set forth. The importance of the physician's character and his attitude is stressed.

Diagnosis

ANDERSON, WILLIAM NANCE

Physical diagnosis. Illustrated with 92 engravings. Philadelphia: Lea & Febiger, 1940. 424 p. illus. 24 cm. \$4.75. 2068

Contents: Part I, Fundamental principles of physical diagnosis: The clinical history. General principles of examination. General principles of inspection and palpation. General principles of percussion. General principles of auscultation. Part II, The physical examination: Inspection of the body in general. Examination of the head, face, nose and throat. Examination of the neck and extremities. Examination of the lungs. Examination of the heart. Examination of the abdomen. Special examinations. Part III, Physical diagnosis in disease: Physical diagnosis in diseases of the heart and circulation. Physical diagnosis in diseases of the respiratory system. Physical diagnosis in diseases of the abdominal organs.

Note: This work on physical diagnosis is designed to supplement the skill and enthusiasm of the instructor and the experience of the general practitioner. The chief task that has confronted the author is the difficulty of finding definitive terms which adequately describe the different sounds or the consistency of different structures. For this reason particular attention has been given to the methods of examination and the reasons for them. Throughout the book, the aim has been to correlate and simplify the treatments in common use rather than to introduce new treatments.

ASSOCIATION FOR RESEARCH IN NERVOUS AND MENTAL DISEASE

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Pain; proceedings of the association December 18 and 19, 1942, New York. With 116 illustrations and 19 tables. Baltimore: The Williams & Wilkins Company, 1943. 468 p. illus. 23 cm. \$7.50. 2069

Contents: The pain threshold in man, by James D. Hardy, Harold G. Wolff, and Helen Goodell. Pain: definition and properties of the unit for sensory reception, by Sarah S. Tower. Pain-producing impulses in peripheral nerves, by Herbert S. Gasser. Central representation of pain, by A. Earl Walker. Subjective disturbances of the sense of pain from lesions of the cerebral cortex, by Jost J. Michelsen. Insensitivity to pain in man, by E. Charles Kunkle and William P. Chapman. The nature of itching, by Stephen Rothman. Studies on pain. Observations on pain due to local cooling and on factors involved in the "cold pressor" effect, by Stewart Wolf and James D. Hardy. Absence of local sign in visceral reactions to painful stimulation, by Dwight G. Sattler. Quantitative studies of visceral pain produced by the contraction of ischemic muscle, by Irving B. Harrison and Nolton H. Bigelow. Influence of inflammation on the pain threshold of the skin in man, by George A. Schumacher. Headache mechanisms—a summary, by Harold G. Wolff. Experimental studies on headache: 1. Pain from the nasal and paranasal structures, by Gervais Ward McAuliffe, Helen Goodell and Harold G. Wolff. 2. Genesis of pain from the eye, by L. Bowne Eckardt, John M. McLean, and Helen Goodell. 3. Muscles of the scalp and neck as sources of pain, by Donald J. Simons, Emerson Day, Helen Goodell, and Harold G. Wolff. Genesis of pain from the joints, by Currier McEwen. Pain from the bladder, ureter and kidney pelvis, by Allister M. McLellan and Helen Goodell. From the pleura and pericardium, by Joseph A. Capps. From the bronchi and lungs, by Chevalier L. Jackson. From the digestive tract, by Chester M. Jones. Pain arising from the stomach and mechanisms underlying gastric symptoms, by Stewart Wolf and Harold G. Wolff. The pain of peptic ulcer, by Walter Lincoln Palmer. Cardiac pain, by Herman L. Blumgart. The tension theory of cardiac pain, by L. W. Gorham. Effect of extra-cardiac pain on the heart, by Harry Gold, Nathaniel T. Kwit, and Walter Modell. Effect of pain on renal function, by George A. Wolf. Action and use of analgesics, by McKeen Cattell. Sensory innervation of the viscera. Studies on visceral afferent neurones in man based on neurosurgical procedures for relief of intractable pain, by James C. White. Management of intractable pain by posterior rhizotomy, by Bronson S. Ray. Surgical methods for relief of pain in head and neck, by Francis C. Grant. Management of intractable pain by chordotomy, by Byron Stookley. Relation of attitude and suggestion to the perception of and reaction to pain, by H. G. Wolff and H. Goodell.

Note: Volume XXIII of the *Research publications* of this Association. The thesis on which this program was built is this: An

understanding of the perception of pain (sensory end organs, afferent fibers and tracts, levels of integration and pain threshold) and a knowledge of autonomic, emotional, and attitudinal reactions to pain in persons of different cultural and individual experiences, should aid in the care of the ill. Because of its practical applications, the volume should be of interest to practicing physicians as well as to scientists. Bibliographies are given.

BARTON, WILFRED MASON, AND WALLACE M. YATER

Symptom diagnosis, regional and general. Originally written by the late Wilfred M. Barton and Wallace M. Yater. Fourth edition. New York: D. Appleton-Century Company, Incorporated, 1942. 900 p. illus. 25 cm. \$10.00. 2070

Note: The main purpose of this book is to refresh quickly the physician's mind on all the diagnostic possibilities when various symptoms or signs are presented by the patient. It is a book for quick reference rather than systematic study. It is divided into two parts entitled Regional symptoms and General symptoms. Regional symptoms is divided into sections on the head, the face (as a whole), the eye, the ear, the nose, the lips, the mouth or buccal cavity, the tongue, the teeth, the jaw, the pharynx or throat, the larynx, the neck, the upper extremity, the thorax or chest, the abdomen, the back and spine, the male genitalia, the female genitalia, the anorectal region, and the lower extremity. Under each region of the body is included all of the major symptoms and signs referable to that region. General facts about the symptom or sign are given, then follow in the order of importance the diseases in which the symptom or sign is a prominent feature. Under each disease the symptom or sign is described as it occurs in that disease and then a list of the main symptoms or signs of the disease. At the end of these data is a complete list of all the other diseases that cause the symptom or sign but are uncommon or those in which the symptom or sign may occur at times. Under General symptoms, is included in alphabetical order those symptoms and signs which are not confined to any particular region of the body. Tables of differential diagnosis are interspersed throughout the book. The Index includes all symptoms and signs for each disease.

CABOT, RICHARD CLARKE, AND F. DENNETTE ADAMS

Cabot and Adams Physical diagnosis. Thirteenth edition, by F. Dennette Adams. Baltimore: The Williams and Wilkins Company, 1942. 888 p. illus. 23 cm. \$5.00. 2070a

Contents (abridged): The history. Physical examination. The body as a whole. The head. The neck. The shoulder girdle and upper extremities. The breasts, axillae, and back. Inspection, palpation, and percussion of the thorax. Auscultation of the lungs and heart. The electrocardiogram. Cardiac dilation and hypertrophy. Classification of cardiovascular disease. Rheumatic heart disease. Endocarditis. Syphilitic cardiovascular disease. Angina pectoris. Disturbances of cardiac rhythm. Miscellaneous cardiovascular disorders. Diseases of the trachea and bronchi. Pneumonia. Pulmonary tuberculosis. Diseases of the pleura. The abdomen. The esophagus, stomach, and intestines. Liver, gall-bladder, pancreas, and spleen. Urinary tract. Adrenal glands. Anus, rectum, and genital organs. Pelvic girdle and lower extremities. The joints. The nervous system. Index.

Note: This book endeavors to present an account of the diagnostic methods and processes needed by competent practitioners as of the date of publication. Recommended methods of examining patients are given, with a description and interpretation of important symptoms and signs and a brief discussion of the nine common disorders, including clinical entities and the relation of physical signs to other aspects of the particular disease. The thirteenth edition contains new material on the diseases of the mouth, back, and heart, as well as new clinical data and additional photographs.

ELMER, WARREN PHILO

Physical diagnosis. Revised by Harry Walker. With 295 illustrations. Eighth edition. St. Louis: The C. V. Mosby Company, 1940. 792 p. illus. 25 cm. \$8.75. 2071

Contents (abridged): Recording the physical examination. Speech, gait, station. Habitus or build. Body temperature. Inspection of the head, forehead, and ears. Inspection of the mouth and throat, of the neck, of the head and neck, of the upper extremities. Palpation of the upper extremities and sphygmomanometry. Clinical anatomy and physiology of the thorax; of the circulatory system. Inspection and palpation of the thorax. Object and technic of percussion. Percussion sounds. Percussion of the heart. Object and technic of auscultation. Auscultation of the respiratory and circulatory systems. Clinical anatomy and physiology of the abdomen. Inspection of the abdomen. Palpation, percussion, and auscultation of the abdomen. Inspection and palpation of the lower extremities. Inspection and palpation of the inguinal, genital, and perineal regions. The neuropsychiatric examination, by James Asa Shield. Diseases of the trachea and bronchi. Circulatory disturbances of the lungs. Diseases of the lungs, pleura, and diaphragm. The diagnosis of abnormalities of the heart-beat, by Drew Luten. Diseases of the pericardium, endocardium and valves, myocardium, aorta, coronary and innominate arteries. Diagnostic procedures. Electrocardiography, by Drew Luten. Bronchoscopy, esophagoscopy, and gastroscopy by Porter D. Vinson. Index.

Note: The eighth edition of this work which first appeared in 1917 follows the general plan of the original in describing not only the diagnostic signs of value to the practitioner and clinician, but the more generally known useless signs as well, and attempts to assign to each its proper relative value. This procedure is based on the author's belief that in examining patients the irrelevant as well as the relevant is always encountered and both must be properly evaluated. A rearrangement of chapters has been made to conform with the usual order of the physical examination, and the material is in general brought up to date. There are no bibliographic references. The first to the fifth editions of the work were written by W. D. Rose.

LEWISON, MAURICE, AND OTHERS

Manual of physical diagnosis, with special consideration of the heart and lungs, by Maurice Lewison, Ellis B. Freilich, and George C. Coe. Second edition, revised, 1942. Chicago: Year Book Publishers, Inc., 1942. 328 p. illus. 21 cm. \$3.00. 2072

Contents: History and general examination. General observation. Systemic examination: head, ears, face, eyes, nose, cheeks, lips, teeth and gums, breath, buccal cavity, tongue, neck. Gross and topographic anatomy of the thorax. Inspection of the thorax. Palpation of the thorax. Percussion of the thorax. Auscultation of the lungs. Physical findings in diseases of the respiratory tract. Anatomy and physiology of the heart. General considerations in disease of the circulatory apparatus. Inspection and palpation of the heart. Percussion of the heart. Auscultation of the heart. The blood vessels and sphygmomanometry. The arrhythmias. The physical findings in diseases of the cardiovascular system. The abdomen and genitalia. The extremities. Reflexes. Subject index.

Note: A reference-handbook for physicians and a review of essentials for students. Every important detail of diagnosis by means of the physical signs which can be felt, seen, or heard, is covered in this volume; but topics of only academic interest and rarely used procedures are omitted. First the methods of examination are detailed; then the relation of physical findings to specific diseases is demonstrated. The normal is clearly distinguished from the abnormal, with emphasis on those points that often mean the difference between an accurate and a faulty diagnosis. The chapter on history taking presents a six-point outline as a guide for interviewing the patient and suggests methods of obtaining essential information.

LOEWENBERG, SAMUEL AARON

Medical diagnosis and symptomatology. Sixth revised edition. Philadelphia: F. A. Davis Company, 1943. 1185 p. illus. (part col.) 26 cm. \$12.00. 2073

Contents (abridged): Preliminary considerations. Temperature alterations, sweats and chills. Alteration of the special senses. Pain and tenderness. Miscellaneous symptoms. Methods of physical examinations. Examinations and diseases of the skin and mucous membranes—of the head, face, eyes, ears, nose, mouth and neck. Anatomy of the thorax. Physical examination of the respiratory system by palpation, percussion, and auscultation. Symptoms and physical signs of disease of the respiratory system and mammae. Anatomy and physical examination of the

heart. Vascular and lymphatic systems. The blood forming organs. The abdomen. Liver, gall-bladder, and spleen. Esophagus, stomach, and pancreas. Intestines. Urogenital system. Bones and joints. The endocrine system. The nervous system. Vitamins and avitaminosis. Allergy. Geriatrics. Industrial, life insurance, malin-gering and periodic health examinations. Urinalysis. Blood examination. Exudates, transudates, and body fluids. Functional tests. Other diagnostic tests. Parasites and parasitic diseases. Index.

Note: This book aims to cover the field of diagnostics in internal medicine. It gives instructions on the various methods of examining the patient, descriptions of normal findings, enumeration of pathologic conditions with the normal and pathologic physical signs, and, whenever possible, the reasons for such signs. These are then discussed from the viewpoints of the medical student, the general practitioner, and the specialist. The sixth edition contains a new chapter on parasitology, including many tropical infections encountered by our armed forces, and miscellaneous other additions.

MAJOR, RALPH HERMON

Physical diagnosis. Second edition, revised, with 437 illustrations. Philadelphia: W. B. Saunders Company, 1940. 464 p. illus. 24 cm. \$5.00.

2074

Contents: Introduction. Pain. General inspection. Examination of the head and neck. Inspection, palpation and percussion of the chest. Auscultation of the lungs. Physical findings in diseases of the lungs. Inspection, palpation and percussion of the heart. Auscultation of the heart. The pulse. Blood pressure. Physical findings in cardiovascular diseases. Abdomen and genitalia. The extremities. Examination of the nervous system. History taking and recording. Index.

Note: Written for the medical student and for the practicing physician, this text emphasizes that physical signs are produced by physical causes, and that these underlying physical causes must be understood before physical signs can be properly appreciated. The objective, from a practical viewpoint, is to tell how to examine the patient; how to take the history; what to look for; how to elicit each sign; and what each sign or symptom means in terms of disease. The author deals with examination of the entire body and contrasts the normal with the abnormal. Stress is placed on details that may mean the difference between an accurate diagnosis and a faulty one. The chapter on pain is of special interest and in the chapter on history taking a helpful outline is given as a guide in questioning the patient and as a basis upon which to write the detailed history. Bibliographies are given at the end of each chapter. For the second edition, the sections on the abdomen, genitalia, and extremities were enlarged. The chapter on the nervous system was largely rewritten, and a number of new illustrations were added.

MEAKINS, JONATHAN CAMPBELL

Symptoms in diagnosis. Baltimore: The Williams and Wilkins Company, 1941. 323 p. illus. (part col.) 22 cm. \$3.00.

2075

Contents (abridged): Physical characteristics of the body. Skin symptoms. Disturbances of sensation—pain. Symptoms of localizing value—thirst, nausea, etc. Symptoms having reference to general function—fatigue, etc. Index.

Note: The purpose of this book is to revive interest in the study of symptomatology, which the author feels has suffered from the undue emphasis placed on the pathogenesis of disease and use of laboratory methods. Physical and chemical methods in medicine have resulted in a more precise and useful interpretation of the symptoms of disease, for they have enabled the study of their fundamental mechanism. This book, which was written alike for junior students and experienced physicians, offers a concise, practical interpretation of the common symptoms, viewed in the light of recent scientific and clinical knowledge.

PULLEN, ROSCOE LEROY, EDITOR

Medical diagnosis; applied physical diagnosis. With a foreword by John H. Musser. Philadelphia: W. B. Saunders Company, 1944. 1106 p. illus. (part col.) 25 cm. \$10.00.

2076

Contents: Medical history, by Roscoe L. Pullen. Introduction to examination of the patient, by Roscoe L. Pullen. Examination of the skin, by Herbert Rattner. Examination of the eyes, by William Burton Clark. Oral diagnosis, by Kurt H. Thoma. Examination of nose, throat and ears, by Howard Charles Bal-

lenger. Examination of neck, by John A. Wolfer. Examination of breasts, by Hugh Auchincloss. Examination of chest, by Julius Lane Wilson. Examination of heart, by William A. Sodeman. Electrocardiographic diagnosis, by Robert Hebard Bayley. Examination of the abdomen, by Frederick Fitzherbert Joyce. Gynecologic and obstetric diagnosis, by Francis Bayard Carter. Urologic diagnosis, by Alexander Raymond Stevens, Frederick C. McLellan. Anorectal diagnosis, by J. Peerman Nesselrod. Examination of the extremities, by Alton Ochsner. Examination of the back, bones and joints, by Guy A. Caldwell. Neurologic examination, by Leo Alexander. Endocrine survey, by Roscoe L. Pullen. Endocrine survey of sexual and reproductive systems, by E. C. Hamblen. Psychiatric approach, by Merrill Moore. Differential diagnosis of neurosis and psychosis, by John Adams Abbott, Merrill Moore. Practical mental measurement, by Lowell S. Trowbridge. Clinical electroencephalography, by John Adams Abbott. Differential diagnosis of causes of coma, by M. Geneva Gray. Pediatric physical diagnosis, by Angus McBryde. Sterility survey, by E. C. Hamblen. Occupational injury, by William F. Ashe. Military problems, by Melvin W. Thorne. Determinants of prognosis, by Harry W. Dingman. Index.

Note: The art and technique of medical diagnosis is here presented for the medical student and for the practicing physician. The aim has been to incorporate not only the usual features contained in every book on the diagnosis of disease, but also to explain, epitomize, and summarize the complete examination of a sick person. Therefore, the book gives the four cardinal methods of physical diagnosis and, in addition, special methods of diagnosis, excluding only the laboratory. Integration of the findings of the examination of the entire body is stressed, predicated on the principle that the source of disease is not necessarily rooted in that system or organ in which symptoms are manifested. Bibliographies are appended to individual chapters, and 863 illustrations on 584 figures are included, 45 of them in colors.

ROBERTSON, WILLIAM EGBERT, AND HAROLD F. ROBERTSON

Diagnostic signs, reflexes and syndromes, standardized. Second revised edition. Philadelphia: F. A. Davis Company, 1943. 327 p. 18 cm. \$3.50.

2077

Note: A compilation of physical signs, reflexes, and syndromes arranged in alphabetical order for use in making diagnoses. The material has been gathered from general, medical, surgical, and specialist sources, from dictionaries, and from the *Journal* of the American Medical Association. Critical comment is offered in many of the definitions, and in some cases brief references to the originator are given. The signs or reflexes are often listed twice, once under their originator's name and again under their physical characteristics or the part of the body affected. The second edition contains minor additions and emendations.

ROBINSON, GEORGE CANBY

The patient as a person; a study of the social aspects of illness. New York: The Commonwealth Fund, 1939. 423 p. 23 cm. \$3.00.

2078

Contents: Elements of illness and their relation to medical service. The methods and scope of the study. Patients with circulatory symptoms. Patients with respiratory symptoms. Patients with digestive symptoms. The diabetic, the syphilitic. The epileptic. The psychoneurotic patient. Patients with various conditions. Treatment of the patient as a whole. Bibliography. Index.

Note: At this time of changing attitudes toward medical care, preventive medicine, and mental hygiene, especial importance attaches to Dr. Robinson's study of a series of unselected patients at the Johns Hopkins Hospital to determine whether all of the factors contributing to their illnesses had been considered. He concluded that, if a sound diagnosis is to be made and effective treatment planned and applied, an understanding of the way in which problems involving the patient as a person bear on a given illness is no less essential than the medical history, physical diagnosis, and all the technical procedures available to the physician.

SUTTON, DON CARLOS

Physical diagnosis; the art and technique of history taking and physical examination of the patient in health and in disease. With 298 text illustrations, and 8 color plates. St. Louis: The

C. V. Mosby Company, 1937. 495 p. illus. (part col.) 28 cm. \$5.00. 2079

Contents: Introduction. Historical introduction, by Irving S. Cutter. Methods of physical examination. The history. General examination. Examination of the chest (the lungs). The heart. The abdomen. Neurologic examination. Index.

Note: This volume is intended to acquaint the student and the physician with the methods of examination by the use of the senses. To be concise yet avoid a lack of details which would impair the proper presentation of the outline has been the primary objective. The importance of visual perception as a part of the physical examination is stressed and illustrated with numerous drawings and photographs. Palpation, percussion, and auscultation are described for each disorder treated, together with methods of interpreting electrocardiograms and roentgenograms and evaluating the clinical history of the patient in relation to the physical findings. There are no bibliographic references.

UNITED STATES. VETERANS' ADMINISTRATION

Manual for medical examiners of the Veterans' Administration (Revised January, 1940). Washington, D.C.: Government Printing Office, 1940. 130 p. illus. 23 cm. Gratis. 2079a

Contents: General instructions. Suggested reading. The extremities, spine, and muscles. The nervous system. Eye, ear, nose, and throat. General medicine and surgery; pulmonary tuberculosis. Index.

Note: This manual is published for the guidance of physicians in the making of authorized physical examinations of claimants or beneficiaries of the Veterans' Administration. It provides concise, specific directions for making and reporting such examinations.

YOUMANS, JOHN BARLOW

Essentials of the diagnostic examination. New York: The Commonwealth Fund, 1940. 417 p. illus. (part col.) 19 cm. \$3.00. 2080

Contents: The history. The physical examination. Procedures of the examination. General inspection. Skin. Superficial lymph nodes. Head. Neck. Chest. Lungs. Heart. Abdomen. Genitals. Rectum. Extremities. Spine. Neurological examination. Conclusion. Outline of the physical examination. Laboratory tests: Introduction. Examination of the urine. Examination of feces. Examination of sputum. Gastric analysis. Examination of body fluids and exudates. Examination of spinal fluid. Blood, and blood examination. Hemoglobin, cell count, blood smear. Clotting and bleeding time; clot retraction; resistance to hemolysis; sedimentation rate; blood grouping and matching. Blood chemistry. Skin tests. Miscellaneous tests. Appendix. Index.

Note: This handbook sets forth procedures of the diagnostic examination that are essential to good medical practice. It presents in compact form a sound and scientific plan which is adequate for the great majority of cases, and which, in the occasional more difficult case, indicates the kind of further study needed. Of special interest is the laboratory section, which presents the physiologic background of the tests, indications for their use, and their diagnostic significance. These tests, because of their simplicity, can be performed by the physician in his own office.

Pathology 1946 ad

ANDERSON, WILLIAM ARNOLD DOUGLAS

Synopsis of pathology. With 294 text illustrations and 17 color plates. St. Louis: The C. V. Mosby Company, 1942. 661 p. illus. (part col.) 20 cm. \$6.00. 2081

Contents: Inflammation, repair, and regeneration. Retrograde changes. Disturbances of circulation. Bacterial infections. Tuberculosis. Virus and rickettsial diseases. Spirochetal and venereal diseases. Mycotic, protozoal, and helminthic infections. Chemical poisons. Vitamin deficiencies. Disturbances of growth. The cardiovascular system. The kidneys, urinary tract, and male genitalia. The lungs. Liver, gall-bladder, and pancreas. The reticulo-endothelial system, spleen, and lymph nodes. The blood and blood-forming organs. The mouth, throat, and neck. The gastrointestinal tract. Endocrine glands. Female genital organs. The breast. The skin. Bones, joints, and tendons. The nervous system. Index.

Note: This abridged reference work on modern pathology is intended to fill the gap between the very elementary manual and the more exhaustive, larger textbooks and reference works. Material is presented in a compact and condensed form designed to be useful to the medical student, the dental student studying general pathology, and to the clinician who must maintain familiarity with the foundation sciences of medical practice. Most diseases and disorders are dealt with in a single paragraph in which only the broad outlines and patterns are given. Emphasis is upon description, causes, and symptoms rather than upon treatment. References follow each chapter.

BELL, ELEXIOUS THOMPSON, EDITOR

A text-book of pathology. Fifth edition, enlarged and thoroughly revised. Illustrated with 448 engravings and 4 colored plates. Philadelphia: Lea & Febiger, 1944. 862 p. illus. 24 cm. \$9.50. 2082

Contents: Introduction. Predisposition to disease. Mechanical injuries. Injuries due to physical agents. Injuries due to chemical agents. Vitamin deficiencies. Circulatory disturbances. Retrogressive tissue changes. Inflammation. Tuberculosis. The venereal diseases. Other chronic infectious diseases. The mycoses. Acute infectious diseases. Tumors. Diseases of the blood. Certain diseases caused by animal parasites. Diseases of the thymus and lymph nodes. Diseases of the spleen. Diseases of the respiratory system. Diseases of the digestive system. Diseases of the pancreas. Diseases of the liver and gall-bladder. Diseases of the heart. Diseases of the blood-vessels. Diseases of the urinary system. Diseases of the reproductive organs of the male. Gynecological pathology. Diseases of the ductless glands. Neuropathology. Diseases of the bones and joints.

Note: A text for the medical student during clinical training, and a reference book for the practicing physician. This fifth edition has been extensively revised to bring the text into accord with current medical opinion and interest. The numbers of illustrations and figures have been increased, and new topics are discussed, including shock, vitamin deficiencies, blast injuries, Boeck's sarcoid and several infectious diseases of particular interest to physicians in war practice.

FORBUS, WILEY DAVIS

Reaction to injury; pathology for students of disease, based on the functional and morphological responses of tissues to injurious agents. 532 illustrations, 20 of which are in color. Baltimore: The Williams & Wilkins Company, 1943. 797 p. illus. (part col.) 26 cm. \$9.00. 2084

Contents (abridged): I, Introduction to the study of disease: Its nature. Causation. Extrinsic, inanimate factors. Extrinsic, animate factors. II, 1, The inflammatory reaction and diseases arising therefrom. Inflammatory diseases of bacterial etiology—focal and local infections, serositis, rheumatic fever, nephritis, alimentary tract infections, biliary tract, urinary tract and kidneys, gonorrhea, respiratory tract, osteomyelitis, endometritis, endocarditis. 2, Virus and rickettsial diseases. 3, Chronic granulomatous diseases—typhus and typhoid, tuberculosis, leprosy, tularemia, etc., Hodgkin's disease, syphilis, fungus diseases. Index.

Note: This book was written for students and young doctors of medicine, and its unusual form has resulted from an attempt by the author to supply what he considers their basic need and desire: continuous education and an opportunity to cultivate a knowledge of the basic science of disease. He chose as the theme of the book the thesis that "disease is a matter of the abnormal outcome of a constantly changing relation between the ultimate biological unit, the cell, and its environment . . . stated in another way, disease is a matter of the qualitative and quantitative reaction of an individual to environmental stimulation." The individual can react 1) by resisting, 2) by submitting, 3) by effecting an adaptation. Part I, an introduction to the study of disease, and Part II, on the resistive reaction to injury, are presented in this volume; the remaining two parts are in preparation.

KARSNER, HOWARD THOMAS

Human pathology. 460 illustrations in black and white and 24 subjects in color on 16 plates. Sixth edition, completely revised and reset. Philadelphia: J. B. Lippincott Company, 1942. 817 p. illus. (part col.) 26 cm. \$10.00. 2085

Contents (abridged): Part I, General pathology: General phenomena of disease. Pathologic pigmentation. Degenerations and infiltrations. Necrosis and somatic death. Mineral infiltrates and concretions. Atrophy. Disturbance of circulation. Inflammation. Principles of infectious diseases. The infectious granulomata. Progressive tissue changes. Tumors. Part II, Systemic pathology: The cardiovascular system. The hematopoietic system. The respiratory system. The alimentary canal. Liver and pancreas. The urinary system. The genital system. The ductless glands. Organs of locomotion. The nervous system. Index.

Note: This text and reference book of pathological anatomy and histology presents the morphological alterations incident to disease in the light of modern views as to their functional significance. The subject matter is confined to human pathology, since the work is designed for students and general practitioners, but general biology is employed to furnish data relevant to the origin, course, and natural history of disease as it affects man. A working knowledge of normal anatomy, physiology, and bacteriology is assumed. At the beginning of each chapter on general pathology, the factual material is arranged in tabular form to give each topic its relative associations in the entire subject. Descriptions, causes, and symptoms are given but treatment is not indicated. Extensive bibliographies follow each chapter. New material in the sixth edition includes sections on vitamin deficiencies, disturbances of circulation, edema, sarcoidosis, tumors, anemia, pneumonia, cirrhosis of the liver, synovia, diseases of the nervous system, and additional references, plus new photomicrographs.

KRUMBHAAR, EDWARD BELL

Pathology. With 18 illustrations. New York: P. B. Hoeber, Inc., 1937. 206 p. illus. 17 cm. (Clio medica; a series of primers on the history of medicine. Editor: E. B. Krumbhaar. XIX) \$2.00. 2086

Contents: Primitive, classical and medieval concepts; pathology of antiquity. Theories of the nature of disease. Rise of anatomic concepts in disease. Systematized gross pathologic anatomy. Pathologic anatomy of the tissues and precellular pathology. Cellular pathology. Integrated pathology (structural, functional, chemical, experimental and clinical methods of approach). Special concepts: inflammation, cancer. Epilogue. Appendix: The word "pathology". Early chairs of pathology and pathologic anatomy. Chronological list of pathologic milestones. Bibliography. Indexes.

Note: This volume offers a brief account of the history of pathology, the study of the nature of disease and the changes which it causes. Strict chronological sequence has not been followed in arranging the material. Instead the main trends have been treated in separate chapters, with consequent occasional overlapping of dates. Important events in the progress of pathology have been assembled in a chronological list, in which the first date is ca. 2160-1788 B.C. The book is intended principally for students and practitioners of medicine, but was written also for the layman who is interested in these subjects.

MACCALLUM, WILLIAM GEORGE

A textbook of pathology. Seventh edition, thoroughly revised. Philadelphia: W. B. Saunders Company, 1940. 1302 p. illus. (part col.) 24 cm. \$10.00. 2086a

Contents (abridged): Disturbances of fluids of the body. Structure and metabolism of cells. Disturbances in nutrition and metabolism of cells. Disturbances of fat metabolism, protein and carbohydrate metabolism, mineral and pigment metabolism. Defences of body against injury. Examples of inflammatory processes. Injury with inflammatory reaction and attempted repair. Physical and mechanical injuries. Chemical injuries. Effects of obstruction of flow of contents of hollow organs. Obstruction of respiratory tract, of urinary tract. Disturbances of circulation. Obstruction of cerebrospinal fluid. Bacterial disease. Diseases due to fungus infection. Spirochaetal infection. Rickettsia infection. Virus diseases. Diseases due to animal parasites. Effects of injuries upon blood and blood-forming organs. Hodgkin's disease. Diseases due to injuries of organs of internal secretion. Diseases related to specific dietary deficiencies. Disturbances of lipid metabolism. Conditions of unknown etiology affecting central nervous system or muscles, affecting bones. Arthritis deformans. Diseases affecting teeth and related structures. Tumors. Congenital malformations. Classification of tumors. Index.

Note: Designed as a text for medical students and as a reference for the physician and pathologist, this book presents the subject from the etiologic approach. It is on this basis, therefore,

that the author follows the effects of diseases in disturbing the normal functions of the body, the gross and microscopical changes they produce in the tissues and their organ combinations, and the physical and chemical changes that interrupt life. Pathology and clinical medicine are closely coordinated, and important for the student especially, is the study from every viewpoint of cases at autopsy. The 697 illustrations, 55 of which are in color, are almost entirely from material studied in the laboratory. References to the literature are given at the end of each chapter. In the revision for the seventh edition, new material was added on virus diseases, glandular disturbances, lymphopathia venereum, granuloma inguinale, vitamins, influenza, disturbances of intercellular fluids and lymph, calcium metabolism, pneumococcus infection, tetanus, tumors, and diabetes mellitus among many others.

MALLORY, FRANK BURR

Pathological technique; a practical manual for workers in pathological histology including directions for the performance of autopsies and for microphotography. Philadelphia: W. B. Saunders Company, 1938. 434 p. illus. 24 cm. \$4.50. 2087

Contents: Laboratory equipment. Preparation and examination of unfixed material. Fixation. Decalcification. Embedding processes. Dyes, solutions and nuclear staining methods. Metallic stains and impregnations. Clearing and mounting reagents. Microincineration. Injections. Special histological methods. The cell. Special cells and tissues. Special organs. Bacterial stains. Miscellaneous infectious agents. Autopsy methods. Postmortem technique. Preservation of gross specimens. Photography. Addenda. Bibliography. Index.

Note: A selection of those formulas that practical experience has shown to be of value. It is intended for pathologists in hospital laboratories and medical schools, for students and practitioners interested in pathology, and for technicians trained in that line of work. In the selection of techniques and their application, directions are given specifically, including the type of equipment required. After each test a separate paragraph is devoted to a consideration of results, data that is of particular significance to the practicing physician. The section on postmortem technique covers 75 pages and covers the techniques of Virchow, the *En Bloc* (Chon), the *En Masse*, and Rokitsky; examination of the central nervous system, of the head, and of newborn and very young children.

MENKIN, VALY

Dynamics of inflammation; an inquiry into the mechanism of infectious processes. New York: The Macmillan Company, 1940. 244 p. illus. (part col.) 22 cm. \$4.50. 2088

Contents: Introduction. The mechanism of capillary filtration. The capillaries in inflammation. The mechanism of increased capillary permeability. The migration of leukocytes into inflamed tissue. Cellular sequence in inflammation. The phagocytic theory. Mechanism of leukocytosis with inflammation. Inflammation in relation to immunity—the concept of fixation. Localization of foreign materials in areas of inflammation. Allergic and anaphylactic inflammation. The role of lymphatics in inflammation. Inflammation and bacterial invasiveness in relation to resistance. Recapitulation and conclusions. Bibliography.

Note: Presents an inclusive analysis, in terms of modern physiological, biochemical, and immunological methods, of the phenomenon of inflammation on the basis of data compiled largely within the previous decade. Of value to pathologists, bacteriologists, immunologists, and others interested in infectious processes.

Trauma

BRAHDY, LEOPOLD, AND SAMUEL KAHN, EDITORS

Trauma and disease. Second edition. Philadelphia: Lea & Febiger, 1941. 655 p. illus. 24 cm. \$7.50. 2090

Contents: Trauma in the etiology of disease. Trauma and heart disease. Trauma and peripheral vascular disease. Trauma and pulmonary tuberculosis. Trauma and pulmonary diseases.

Trauma and diseases of the gastro-intestinal tract. Trauma and genito-urinary diseases. Trauma in relation to obstetrical and gynecological conditions. Trauma and mental disorders. Trauma and neurosyphilis. Trauma and diseases of the nervous system. Trauma and diseases of the bones. Trauma and chronic diseases of the joints. Trauma and diseases of the spine. Trauma and neoplasms. Trauma and diabetes. Trauma and diseases of the thyroid gland. Trauma and septicemia.

Note: The second edition of this work reflects the new concepts of the relationship between trauma and disease. Many chapters have been rewritten and the work reviews the material that has been published on this subject during the last four years. Each of the 24 contributors is a well-known authority on the diseases which he covers.

GURD, FRASER B., AND F. DOUGLAS ACKMAN

Technique in trauma; planned timing in the treatment of wounds including burns, from the Montreal General Hospital and McGill University. Philadelphia: J. B. Lippincott Company, 1944. 68 p. illus. (part col.) 26 cm. (Reprinted from the *Annals of surgery*, November 1942, Vol. 116, no. 5; December 1943, Vol. 118, no. 6; February 1944, Vol. 119, no. 2; with additional text.) \$2.00. 2091

Contents: Preface, by John Lockwood. A practical concept for the treatment of major and minor burns, by Fraser B. Gurd and others. A report on the management of burns using the occlusive compression dressing, with sulfathiazole emulsion, by F. Douglas Ackman and others. Planned timing in the treatment of wounds and infections by means of infrequent occlusive dressings, by Fraser B. Gurd and others. Commentary, by Ralph R. Fitzgerald. Index.

Note: These technical papers present the clinical facts and case records, illustrated with several photographs in color, of burn management by means of surgery and skin grafting. Particular emphasis is placed on the planned timing of the treatment to anticipate the dangers and difficulties arising from severe burns, namely shock, toxemia, and infection. Operational charts are presented giving general and local treatment according to number of hours, days, and weeks after the initial hospitalization.

MORITZ, ALAN RICHARDS

The pathology of trauma. Illustrated with 117 engravings. Philadelphia: Lea & Febiger, 1942. 386 p. illus. 24 cm. \$6.00. 2092

Contents: Mechanical injuries. Trauma and infection. Trauma and tumors. Mechanical injuries of the cardiovascular system: of the alimentary canal: of the liver—gall bladder—bile passages—pancreas and spleen: of the urogenital tract: of the central nervous system: of the skeletomuscular system.

Note: This book deals mainly with the pathological aspects of lesions produced by mechanical violence. It surveys the principal causes of such injuries, the manner in which they appear to produce functional or organic disturbances, the pathological characteristics of the resulting lesions, the pathogenesis of their complications and sequelae, and certain types of collateral evidence likely to be of medico-legal interest. The book is of value to physicians in military service, medical examiners, industrial physicians, and lawyers.

THORNDIKE, AUGUSTUS

Athletic injuries; prevention, diagnosis and treatment. Second edition, thoroughly revised. Illustrated with 105 engravings. Philadelphia: Lea & Febiger, 1942. 216 p. illus. 20 cm. \$3.00. 2093

Contents: Part I, The prevention of injuries in athletics: Introduction. The history and present status of Harvard's Athletic Medical Department. Physical fitness. Physical training. Physical fatigue. Further aids in the prevention of injury. Part II, The more common types of athletic injuries: Introduction. Sprains. Strains. Contusions. Fractures and dislocations. Internal injuries. Infections and inflammations. Lacerations and abrasions. Part III, The more common regional injuries, their diagnosis and treatment: Introduction. Head, face and neck. Injuries to the thorax.

The more common injuries to the shoulder. Injuries to the arm, elbow and forearm. Injuries to the wrist, hand and fingers. Abdomen, pelvis and back. Injuries to the buttock, hip, groin and thigh. Injuries to the knee. Injuries to the lower leg. Injuries to the ankle. Physical therapy. Bibliography and index.

Note: A concise monograph dealing with the problem of prevention, diagnosis, and treatment of injuries in American college sport. It is intended for coaches, trainers, and athletes as well as for school and college physicians, and has value in industrial medicine. Recent developments in the physiology of physical fitness are included in this revision.

Pharmacology and Toxicology

AMERICAN MEDICAL ASSOCIATION. COUNCIL ON PHARMACY AND CHEMISTRY

New and nonofficial remedies, 1944, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1944. Chicago: American Medical Association, 1944. 778 p. 19 cm. \$1.50. 2097

Contents: Official rules of the Council. Tables of approximate equivalents of doses, apothecaries' and metric system. Allergenic preparations. Analgesics and antipyretics. Anesthetics. Antinfectives. Astringents and caustics. Autonomic drugs. Cardiovascular agents. Central nervous system stimulants. Cholagogues. Contraceptives. Diagnostic aids. Diuretics. Ecbolectics. Gastrointestinal drugs. Parenteral solutions. Pharmaceutic and therapeutic aids. Sedatives and hypnotics. Serums and vaccines. Vitamins and vitamin preparations for prophylactic and therapeutic use. List of articles and brands accepted by the Council but not described in N.N.R. Bibliographic index to medicinal articles not included in N.N.R. Index to distributors. General index.

Note: This publication of the Council has appeared annually since 1907, usually in May, with a supplement issued in November. The description of each preparation includes the composition, dosage, indications, cautions to be observed, etc. In this edition, no radical revision was found necessary; however, more or less important revisions have been made in the following chapters: Barbituric acid derivatives; Estrogenic substances; Parathyroid; Ovaries; Sulfonamide compounds; Vitamins, especially the sections Vitamin B complex and Vitamin D. A noteworthy revision of the chapter on vitamins consists in the enumeration, under the various vitamins, of the limitations of potencies of the various preparations which the Council will consider for acceptance.

AMERICAN MEDICAL ASSOCIATION. COUNCIL ON PHARMACY AND CHEMISTRY

Useful drugs; a selected list of essential drugs with brief discussions of actions, uses and dosage. Issued under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association. Robert A. Hatcher, editor, Paul C. Barton, associate editor. Thirteenth edition. Chicago: American Medical Association, 1942. 306 p. 18 cm. \$0.75. 2098

Note: *Useful drugs* is designed to supply physicians and medical students with a selected materia medica and to serve as a basis for both instruction and state board examination in materia medica and therapeutics. Its inception was due to the realization that presentation of a great number of drugs and preparations of drugs to the attention of physicians and students is detrimental to rational therapeutics. The first edition appeared in 1914 under the title, *A Handbook of useful drugs*. In this as in all succeeding editions the aim has been to maintain a list of the more important drugs by omitting those which have become superfluous and adding others of established value. The present edition is based on the twelfth revision of the *Pharmacopoeia*, the seventh edition of the *National formulary*, and the 1942 edition of *New and nonofficial remedies*.

AMERICAN PHARMACEUTICAL ASSOCIATION

The National Formulary. Seventh edition. Official from November 1, 1942. Washington, D.C.: The American Pharmaceutical Association, 1942. 690 p. illus. 23 cm. \$6.00. 2098a

Contents: General notices. Monographs on drugs, chemicals and preparations. Reagents and preparations for use in the clinical laboratory. Ingredients of reagents and preparations for use in the clinical laboratory. General tests, processes and apparatus. History of the National Formulary. Index.

Note: This latest edition of the *National Formulary*, like the preceding editions, is designed to supply definite formulas for preparations that are sufficiently used in the medical practice within the United States or its possessions, and for which formulas are not included in the *Pharmacopoeia of the United States*, and to provide standards and tests for the identity, quality, and purity of the ingredients used in these formulas and in other drugs so that uniformity in the physical properties and therapeutic action of these preparations will be assured. The standards are recognized as official by the terms of the Federal Food, Drug and Cosmetic Act. Features of the seventh edition are a revised and expanded chapter on materials and preparations for diagnostic use; a new chapter on ingredients of reagents and their preparation; a rearrangement in the presentation of the tests; the use of a scientific system of color nomenclature; and the development of new and improved standards for chemicals, drugs, and other preparations.

BACHMANN, GEORGE, AND A. RICHARD BLISS

The essentials of physiology and pharmacodynamics. Third edition, completely revised and reset. Philadelphia: The Blakiston Company, 1940. 508 p. illus. (part col.) 26 cm. \$4.50. 2099

Contents (abridged): Pharmacodynamics of the cell. Histology of the epithelial and connective tissues. Muscle tissue. Nerve tissue. The nerve system. The brain. Pharmacodynamics of the central nerve system. Pharmacodynamics of the autonomic nerve system. The blood. Respiration. Foods. Digestion. Absorption. Metabolism. Excretion. The internal secretions. The sense organs. Voice and speech. Reproduction. Index.

Note: A textbook of physiology for students of pharmacy. This edition includes the important recent advances in physiology and pharmacology; lists of the members of the various groups of drugs; changes required by the latest revisions of the United States and British *Pharmacopoeias*, *National Formulary*, and *New and nonofficial remedies*.

BASTEDO, WALTER ARTHUR

Materia medica, pharmacology, therapeutics and prescription writing for students and practitioners. Fourth edition, reset. Philadelphia: W. B. Saunders Company, 1937. 778 p. illus. 24 cm. \$6.50. 2100

Contents (abridged): Introduction. Constituents of organic drugs. Pharmaceutical preparations. Weights and measures. Active principles and assay processes. Pharmacopoeia and National Formulary. Dosage. Site of action. Administration. Sites and modes of action of drugs. Potentiation, synergism, and antagonism. Scientific and empiric therapeutics—animal experimentation. Scope of treatment. Protectives, sweetening agents. Nutrients. Vitamins. Counterirritants. Caustics. Digestive ferments. Acids and bases. Inorganic and organic acids. Alkalis—antacids. Phosphorus. Parathyroid. Carminatives. Bitters. Adsorbents. Astringents. Antidiarrheics. Anthelmintics. Cathartics. Treatment by rectum. Mineral waters. Remedies acting chiefly on circulation and on the nervous system. Antipyretics. Drugs chiefly affecting peripheral nervous system. Diaphoretics. Diuretics. Disinfectants and antiseptics. Therapeutic classification of disinfectants. Heavy metals. Emetics. Antemetics. Expectorants. Iodine. Thyroid. Dinitrophenol. Drugs that affect the uterus. Ovarian hormones and gonadotropic hormone of pregnancy urine. Testes hormones. Anterior pituitary hormones. Suprarenal cortex. Insulin. Antihormones. Prescription writing. Index.

Note: For both the medical student and the physician, this book presents information on drugs with greatest stress on things that bear on clinical practice. Thus the reader gets an understanding of each drug as a practical therapeutic aid and of its active constituents, solubilities, and incompatibilities. The various preparations of each are described along with dosage and strength, usual and unusual actions, how best to prescribe and

administer it, cautions and contraindications, symptoms and treatment of poisoning, etc. An entire section is devoted to the writing of prescriptions. In this discussion, the author has held to one method in order to avoid confusion on the part of the student. For the fourth edition, the book was given a general revision, and a large number of new drugs and therapeutic agents were introduced in order to parallel the advances made in therapeutic practice.

BERNHEIM, FREDERICK

The interaction of drugs and cell catalysts. Minneapolis, Minn.: Burgess Publishing Company, 1942. 85 l. illus. 27 cm. \$2.25. 2101

Contents: Part I, Drugs that affect the activity of certain enzymes: (a) Cholinesterase: Eserine and related compounds. Morphine. Strychnine. Curare. Methylene blue. (b) Other enzymes: Cyanide. Selenium. Arsenic. Copper. Sulfanilamide. Salicylate. Part II, Drugs that are acted on by certain enzymes: Acetanilide and related compounds. Histamine. Atropine. Acetyl derivatives of morphine. Adrenaline. Alcohol.

Note: In this book the author reviews the pertinent literature in an attempt to answer two questions: (1) if a drug alters the activity of a specific enzyme *in vitro*, how far can the pharmacological effects of the drug be explained on this basis? and (2), if an enzyme inactivates a drug *in vitro*, can this explain its fate in the body? The drugs included are those that have not before been fully discussed from the point of view of correlating their *in vivo* and *in vitro* effects. Extensive bibliographies are given in each section. The book is intended for all persons interested in these problems from the point of view of practical application or research, and in respect to the latter, it is the hope of the author that this volume will stimulate research along this line with a view to filling the obvious gaps in our information.

CANTAROW, ABRAHAM, AND MAX TRUMPER

Lead poisoning. Baltimore: The Williams & Wilkins Company, 1944. 264 p. illus. 23 cm. \$3.00. 2103

Contents: Absorption, transportation, deposition and excretion of lead. Pathology and pathological physiology. Clinical manifestations. Lead in blood, body fluids and excretions. Normal intake of lead. Treatment of lead poisoning. Occurrence of chronic lead poisoning. Lead products in industry. Procedures for determination of lead, by Morris B. Jacobs. Bibliography. Index.

Note: The authors have sifted the literature on the subject and have presented the data which they believe are essential to a comprehensive understanding of the nature, prevention, and management of lead poisoning. On controversial issues they have indicated their personal opinions which are based on the study of hundreds of workers exposed to lead hazards. The book is of interest to physicians in industry and to others concerned with the subject, including medical college students.

CARROLL, ROBERT SPROUL

What price alcohol? A practical discussion of the causes and treatment of alcoholism with preface by Adolf Meyer. New York: The Macmillan Company, 1941. 362 p. 21 cm. \$3.25. 2104

Contents: Man and alcohol. Modern tensions. Self and reality. Reared for work or play. Something for nothing. Our response to the difficult. Techniques of escape. Dwarfed self-criticism. Alcohol and body chemistry. Biochemistry and the mind. Alcohol and reality. Immoral, unmoral, or drugged. The approach—intolerant, social, scientific. Simple, difficult, incurable. Treatment of benign cases. Management of pathologic cases. Living one's own life. Meeting life's give and take. Choosing a better way. The gift of the matter: a résumé. Index.

Note: A psychiatrist here outlines his conception of the diverse and deep-seated causes underlying the increasing alcohol consumption of today, and his approach to re-educational treatment, with special emphasis on personality-integration. Numerous case histories are included. This book is written in non-technical language and is intended for the layman as well as for physicians, teachers, psychologists, social workers, and others dealing with the problem.

CRAMP, ARTHUR JOSEPH, EDITOR

Nostrums and quackery and pseudo-medicine. With a foreword by George Henry Sim-

mons. Volume III. Chicago: American Medical Association, 1936. 232 p. illus. 22 cm. \$1.50.

2105

Contents: Foreword. Introduction. Asthma and hay fever remedies. Cancer cures and treatments. Consumption cures and cough remedies. Cosmetics. Cures and treatments for deafness; diabetes; epilepsy. Food fads and nutrition nonsense. "Female remedies." Kidney disease nostrums. Laxatives. Mail order concerns. Mechanical nostrums. Miscellaneous nostrums. Miscellaneous practitioners. Obesity cures and treatments. Rheumatism remedies. Stomach remedies. Testimonials. Tonics, bitters, etc. Venereal remedies. Miscellany. Index.

Note: The first volume of this publication, containing some 500 pages, appeared in 1911, and the second, which had some 800, appeared in 1921. These books contained practically all of the material on these subjects published in *The Journal* of the American Medical Association previous to 1921, and the articles were republished in full. Because of the amount of material which had accumulated this method had to be abandoned in the present volume, which consists mainly in a factual record of the products or results of the faddist, with no space devoted to the methods he employed. In addition to the articles from *The Journal* and *Hygeia*, the many pamphlets issued by the Bureau of Investigation and a few that appeared in the *American Mercury* have served as source material. Many articles had for their basis the work of the Federal authorities, especially that of the Food and Drug Administration.

CUTTING, WINDSOR COOPER

A manual of clinical therapeutics, a guide for students and practitioners. Philadelphia: W. B. Saunders Company, 1943. 609 p. 19 cm. \$4.00.

2106

Contents: General problems in therapy. Bacterial infections. Spirochetal infections. Virus infections. Mycotic infections. Protozoal infections. Metazoal infections. Other diseases probably infectious. Nutritional diseases. Vitamin deficiencies. Endocrine diseases. Metabolic diseases. Diseases due to allergic states. Diseases due to physical agents. Diseases of upper alimentary tract. Diseases of intestines and peritoneum. Diseases of pancreas, liver and bile passages. Diseases of the heart. Diseases of the peripheral circulation. Diseases of blood and spleen. Diseases of the respiratory system and mediastinum. Diseases of the genitourinary system. Diseases of the muscles, bones and joints. Diseases of the skin. Diseases of the peripheral nerves. Diseases of the central nervous system. Diseases of the mind. Appendices: Special procedures. Physiotherapy. Symptoms and treatment of poisoning. Diet lists. Metric and English equivalents. Tables and charts for weight, height and age. Abbreviations and other aids in prescribing. Clinical physiological data. Quantitative methods for controlling the therapeutic use of drugs. List of prescriptions, drugs and doses. References. Index.

Note: Specific medical treatment is given, both of the diseases commonly met in general practice and of tropical diseases. Clinical and pharmacologic descriptions are brief, the emphasis being placed on treatment. The drugs mentioned are almost entirely chosen from those official in the *United States Pharmacopoeia* and *National Formulary*, or accepted for *New and non-official remedies*. When other agents are mentioned, they are indicated as "not accepted." Dosage is given in the metric system, followed, in parentheses, by approximate equivalents in apothecaries' system. Drugs advised in the text are listed alphabetically in the appendix together with source, dose and therapeutic use.

DACK, GAIL MONROE

Food poisoning. Chicago, Ill.: The University of Chicago Press, 1943. 138 p. illus. 23 cm. \$2.00.

2107

Contents: Preface. Introduction. Chemical poisoning in food. Poisonous plants and animals. Botulism. *Staphylococcus* food poisoning. *Salmonella*. Alpha-type streptococci in relation to food poisoning. Significance of other bacteria in food poisoning. Infections to be differentiated from food poisoning.

Note: This book summarizes the many scattered reports which have appeared recently in the field of food poisoning. In addition, the author offers a critical discussion of the various agents which cause food poisoning, pointing out similarities and differences in their action, and providing aid in the matter of differential diagnosis of gastroenteric disturbances of unknown origin. The information contained in this volume is of interest to Army, Navy, and Marine medical officers, public health

workers, practicing physicians, teachers of home economics, and to persons in the food industries.

DAVISON, FORREST RAMON

Manual of toxicology. With a foreword by David Marvin. New York: P. B. Hoeber, Inc., 1939. 241 p. 19 cm. \$2.50.

2108

Contents: The fundamental principles of toxicology. Classification of poisons. Poisoning by acids and alkalis. Metallic poisons. Poisonous gases. Alkaloidal poisons. Food poisons. Poisoning from snake and reptile bites. Poisoning from insect stings. Miscellaneous poisons. Toxicological analysis. Index.

Note: Special attention is given to the practical side of the subject in this concise manual designed for the student of medicine and the general practitioner. The work outlines the principles and technique of toxicologic analysis as well as the methods of interpreting such analysis. Emphasis is placed on the clinical aspect and there is a brief mention of fatal doses, necropsy findings, and the organs chiefly affected by each poison. A short list of texts on the subject is appended to each chapter.

DRINKER, CECIL KENT

Carbon monoxide asphyxia. New York: Oxford University Press, 1938. 276 p. illus. 24 cm. (Oxford medical publications) \$4.50.

2108a

Contents (abridged): Respiratory physiology and biochemistry of carbon monoxide asphyxia. Acute poisoning and the problem of after-effects. What constitutes harmful exposure. Statistics on carbon monoxide asphyxia and common sources of carbon monoxide. Pathology. Problem of chronic exposure. Treatment. Detection and determination of carbon monoxide in air and in the body, by Julius Sendroy, Jr. Measurement in the air. Bibliography. Indexes.

Note: Although this book contains scientific data which may contribute to our knowledge of the physiology and biochemistry of anoxia, and methods of determination of interest to the chemist, it was written primarily for a practical purpose, to supply information to engineers, men interested in certain problems of insurance, men handling compensation for accidents, safety directors, and teachers of safety, lawyers, employees of utility companies, many plant physicians, and all other persons concerned with this problem. Thus the author's aim has been to handle the subject simply and to keep the subject matter factual. There is a selected bibliography.

EGGLESTON, CARY

Essentials of prescription writing. Seventh edition, revised. Philadelphia: W. B. Saunders Company, 1942. 155 p. 16 cm. \$1.50.

2109

Contents: Introduction. Latin grammar. Grammatic construction of prescriptions. Weights and measures. Practical writing of prescriptions. Doses of drugs. Vehicles. Incompatibility. Modes of administration of medical agents. Suggestions for prescribing official preparations. Practice prescriptions. Index.

Note: This is a book on the art and application of prescription writing. It is designed as a handy manual for the practicing physician and the medical student. It shows how to construct a grammatic and proper prescription, supplying this information in an as easily accessible fashion as possible.

EILMANN, HENRY J.

Medicolegal and industrial toxicology, criminal investigation, occupational diseases. Philadelphia: The Blakiston Company, 1940. 324 p. 20 cm. \$3.00.

2110

Contents: Poisons and drugs. Criminal investigations. Medico-legal examinations of miscellaneous nature. Industrial poisoning. Occupational diseases.

Note: This is a practical laboratory manual for use of the coroner, industrial physician, lawyer, insurance adjuster, toxicologist, and others. Methods of choice for each investigation, materials and apparatus needed, and the interpretation of results are discussed in detail.

FAIRHALL, LAWRENCE TURNER, AND R. R. SAYERS

The relative toxicity of lead and some of its common compounds. With a section on pathol-

ogy, by J. W. Miller. Washington, D.C.: Government Printing Office, 1940. 40 p. illus. 22 cm. (United States. Public Health Service. Public health bulletin no. 253) \$0.25. 2111

Contents: Introduction. Industrial exposure to lead. Factors influencing the absorption of lead. Experimental procedure. Chemical methods of analysis. Experimental results. Summary. Bibliography. Acknowledgments. Pathologic changes induced by lead and by some of its compounds, by J. W. Miller.

Note: This bulletin presents the results of a study of the relative toxicity of lead and of ten common lead compounds (lead arsenate, lead carbonate, lead chromate, lead monoxide, red lead, lead peroxide, lead phosphate, lead silicate, lead sulphate, lead sulphide) undertaken with a view to obtaining basic information necessary for the improvement of methods of control of lead poisoning in industry. More than 500 guinea pigs were studied during and following the administration of lead and its compounds by mouth, by intraperitoneal injection, and by inhalation.

FELTON, LLOYD DERR, AND H. J. STAHL

Standardization of antipneumococcus horse sera and concentrates. Washington, D.C.: Government Printing Office, 1937. 58 p. 22 cm. (United States. National Institute of Health. Bulletin no. 169) \$0.10. 2112

Contents: Historical background. Mouse-protection experiments. Combining equivalent method. Correlation of two methods of assay—mouse-protection tests and combining equivalent tests. Comparison in 1933 of potency of serum F146 and United States standard serum P11, by four methods. Comparison in 1935 of potency of sera F146, United States standard P11, and British standards, by three methods. Discussion. Summary. Conclusions. References.

Note: This bulletin is a report on methods of standardization of antipneumococcus serum and of concentrates. Its purpose is to investigate the following: (1) standardization by a mouse-protection technique developed with special reference to titration in the zone in which the law of multiple proportions operates; (2) standardization by a "combining equivalent" technique, an *in vitro* method for estimating potency; (3) comparison of results obtained by the two methods; and (4) comparison of titrations of the United States and the British standard sera.

FLINN, ROBERT HARROLD, AND OTHERS

Chronic manganese poisoning in an ore-crushing mill, by Robert H. Flinn, Paul A. Neal, Warren H. Reinhart, J. M. Dallavalle, William R. Fulton, and Allan E. Dooley. Washington, D.C.: Government Printing Office, 1940. 77 p. illus. 23 cm. (United States. Public Health Service. Public health bulletin no. 247) \$0.15. 2112a

Contents: Abstract. Introduction. Sources and uses of manganese. Manufacturing methods. Results of engineering study. Results of medical study. Relation of manganese poisoning to exposure. Characteristics of chronic manganese poisoning. Summary and recommendations. Acknowledgments. Annotated bibliography. Appendix. Index.

Note: This bulletin reports the results of a study of the health of 34 employees of a manganese ore-crushing plant made cooperatively by the Public Health Service and the Industrial Hygiene Division of the Health Department of Pennsylvania. The study was made in the hope that the cause of several cases of manganese poisoning among the workers might be determined and that preventive measures might be instituted to prevent further cases from developing.

GATHERCOAL, EDMUND NORRIS, AND ELMER H. WIRTH

Pharmacognosy. Illustrated with 372 engravings and a colored plate. Philadelphia: Lea & Febiger, 1936. 852 p. illus. (part col.) 24 cm. \$7.50. 2113

Contents (abridged): Introduction: The evaluation of drugs. Thallophyta: Schizomycetes or bacteria. Algæ. Eumycetes or true fungi. Lichenes or lichens. Bryophyta. Pteridophyta: Equisetales. Filicales. Lycopodiales. Spermatophyta: Gymnospermæ. Angiospermæ. Dicotyledonæ. Animal drugs: Protozoa. Plathelminthes. Nematelminthes. Annulata. Mollusca. Anthropoda. Vertebrata. Powdered drugs. Key for identification of powders. Index.

Note: A comprehensive study of drugs having their origins in the plant or animal kingdom, including a brief outline of the history, distribution, cultivation collection, selection, preparation, commerce, identification, evaluation, preservation, and use of drugs and economic substances bearing on the health of man or other animals. The drugs are treated in systematic sequence according to their Linnaean classification, and the general description, structure, powder description, constituents, standards of purity, uses, and doses are given for each. The work is based on Henry Kraemer's *Scientific and applied pharmacognosy*, third edition, New York, 1928, and follows the general plan of the earlier volume in emphasizing the chemical aspect of pharmacognosy. The present text conforms to the standards of the eleventh revision of the *U.S. Pharmacopoeia* and the sixth edition of the *National Formulary*.

GONZALES, THOMAS ARTHUR, AND OTHERS

Legal medicine and toxicology, by Thomas A. Gonzales, Morgan Vance, and Milton Helpert, with a foreword by Harrison S. Martland. New York: D. Appleton-Century Company, Incorporated, 1940. 754 p. illus. (part col.) 25 cm. \$10.00. 2114

Contents: The coroner and medical examiner systems. The investigations at the scene of death. The identification of living and dead persons. The technic of the autopsy. The signs of death. The lesions in unexpected natural deaths. In different types of trauma such as blunt force, stab wounds, bullet wounds, violent deaths from asphyxia, burns, electrical energy, caisson disease, abortion, infanticide, rape, poisonous gases, inorganic and organic poisons. The considerations of medical jurisprudence involved in the relation of the physician to the government agencies and the courts. In the rights and obligations of physicians in their professional practice. In insanity. In cases of sterility. Impotence. Pregnancy. In relation to insurance of different kinds. The laboratory procedures concerned with the identification of spermatozoa, hairs, blood and the different agglutination reactions in human blood and the different toxicologic examinations.

Note: Written for practitioners and students of medicine, this book is designed to be sufficiently complete to serve as a satisfactory source of reference, but brief enough to be used as an introduction to medicolegal science. The matter which relates to medical jurisprudence is presented in the light of problems which may be encountered in the professional life of the physician without attempting to discuss the more complicated legal implications. The laboratory procedures, especially the toxicologic examinations, are considered in enough detail to indicate the nature of such examinations and the precautions which must be observed to insure the success of the investigation. The principal emphasis has been placed upon the pathological lesions found in autopsies on cases of suspicious nature, and on cases of death from trauma and poison. This part of the text is based for the most part on the personal experience of the authors as medical examiners in the Office of the Chief Medical Examiner in the City of New York. Most of the illustrations in the text are original and are from cases seen by the authors.

GOODMAN, LOUIS SANFORD, AND ALFRED GILMAN

The pharmacological basis of therapeutics; a textbook of pharmacology, toxicology and therapeutics for physicians and medical students. New York: The Macmillan Company, 1941. 1383 p. illus. 26 cm. \$12.50. 2115

Contents (abridged): Introduction. Central nervous system depressants. Central nervous system stimulants. Local anesthetics. Drugs acting on autonomic effector cells. Cardiovascular drugs. Water, salts and ions. Drugs affecting urine formation. Drugs acting on the reproductive organs. Gases and vapors. Heavy metals and metalloids. Drugs acting locally on the skin and mucous membranes. Antiseptics, disinfectants and drugs used in the chemotherapy of infectious diseases. Drugs acting on the blood

and blood-forming organs. Drugs of endocrine origin. The vitamins. Appendix: Principles of prescription writing. Index.

Note: The book is designed to correlate pharmacology with related medical sciences, to reinterpret the actions and uses of drugs from the viewpoint of important advances in medicine and to emphasize the application of pharmacodynamics to therapeutics. The approach throughout is primarily clinical, with drugs grouped on the basis of therapeutic uses. References are given by chapters.

HAGGARD, HOWARD WILCOX, AND E. M. JELLINEK

Alcohol explored. Garden City, N.Y.: Doubleday, Doran & Company, Inc., 1942. 297 p. illus. 22 cm. \$2.75. 2115a

Contents: The alcohol problem defined. What the world drinks and how much. What happens to alcohol in the body. Alcohol and behavior—immediate effects. Inebriety. Bodily diseases of chronic alcoholism. Alcoholic mental diseases. The outlook. Selected references. Index.

Note: A summary of the known facts about the physiological and psychological effects of alcohol on the human body, written for the layman but useful to the student of medicine and practitioner as well. Alcoholism is presented as a social and a medical problem. The book is illustrated with a considerable amount of statistical data, and a bibliography is given for each chapter.

HAMILTON, ALICE

Industrial toxicology. New York: Harper & Brothers, 1934. 352 p. 19 cm. (Harper's medical monographs) \$3.00. 2115b

Contents: Introduction: Health of the working class. Protection of the worker against poisoning. Alkalies. Acids. Chromium. Lead. Arsenic. Mercury. Metal-fume fever. Other metals: Phosphorous. Manganese. Antimony. Copper. Zinc. Cadmium. Vanadium. Nickel. Tellurium. Selenium. Tin. Thallium. Titanium. Asphyxiants: Carbon monoxide. Carbon dioxide. Hydrogen sulfide. Hydrogen cyanide. Benzene. Toluene, xylene, coal-tar derivatives. Petroleum derivatives: Petroleum distillates. Alcohols. Acetates. Ketones. Aldehydes. Chlorinated hydrocarbons. Bromine derivatives. Turpentine. Carbon disulphide. Tobacco. Mineral oils. Occupational cancer. Radioactive substances. Bibliography. Index.

Note: A short review of modern industrial toxicology covering the literature up to January, 1933. Some important but very well-known poisons are neglected in order to devote the space to rarer and unfamiliar poisons. The bibliography lists 655 references.

HAMILTON, ALICE

Recent changes in the painters' trade. Washington, D.C.: Government Printing Office, 1936. 64 p. 22 cm. (United States. Department of Labor. Division of Labor Standards. Bulletin no. 7) Paper, \$0.10. 2115c

Contents (abridged): Paint constituents. Bituminous paint. Lacquers, synthetic resins, etc. Methods of applying coatings. Experience with the spray gun. Present-day practices: house painting, ship painting, automobile painting, railway car painting, agricultural machinery, electrical equipment, furniture painting. Harmful properties of solid and liquid constituents. Painters' eczema.

Note: A study from the medical standpoint of the changes both in materials and in methods that have taken place in the painters' trade from 1913 to 1936 and the effect of these developments upon the health of the workers. Bibliographic references are given in footnotes.

HENDERSON, YANDELL, AND HOWARD W. HAGGARD

Noxious gases and the principles of respiration influencing their action. Second edition, revised. New York: Reinhold Publishing Corporation, 1943. 294 p. illus. 23 cm. (American Chemical Society monograph series. No. 35) \$3.50. 2115d

Contents: General survey of the field. Elements of respiration. Respiratory functions of the blood and their laws. Practical application of the laws of gases and vapors. Principles determining absorption, distribution and elimination of volatile substances. The significance of standards for physiological response to various concentrations of gases and vapors. Classification of noxious gases and vapors. Group I, Irritant gases, their action, acute and chronic, and sequelae. Special characteristics of various irritant gases. Group II, Asphyxiation and simple asphyxiants. Group III, Chemical asphyxiants. Group IV, Volatile drugs and druglike substances. Group V, Inorganic and organometallic gases. Methods of resuscitation and comparison of various treatments. First aid. Prevention of poisoning by noxious gases. Supplementary statement on breathing machines by Yandell Henderson. Index.

Note: The purposes of this text, written for engineers, chemists, and those in industry, are to present material on the nature and treatment of toxic gases and to outline principles on which safety and preventive measures can be built. Only those gases encountered in industry are included, but reference to additional toxic gases are made in bibliographies at the end of many chapters.

HYSLOP, FRANCES L., AND OTHERS

The toxicology of beryllium, by Frances Hyslop, Edward D. Palmes, William C. Alford, A. Ralph Monaco, and Lawrence T. Fairhall. Washington, D.C.: Government Printing Office, 1943. 56 p. illus. 23 cm. (United States. National Institute of Health. Bulletin no. 181) \$0.15. 2116

Contents: Introduction. Physiological action of beryllium. Analytical determination of beryllium. Experimental procedure and apparatus. Experimental results. Toxicity of the products of electrolysis of the molten fluorides. Physiology. Pathological changes resulting from exposure of animals to beryllium compounds. Summary and conclusions. Bibliography.

Note: The purpose of the investigation reported in this bulletin was to measure and define the toxicity of beryllium and to indicate, so far as feasible by means of animal experiments, the maximum permissible concentration of dust or fumes from the metal or its compounds which workmen should be permitted to breathe. The investigation indicated that safe operating conditions in the preparation of the metal or its alloys must be based upon other considerations than an implied toxicity of beryllium.

JACOBS, MORRIS BORIS

The analytical chemistry of industrial poisons, hazards and solvents. Second revised reprint. New York: Interscience Publishers, Inc., 1944. 661 p. illus. 23 cm. (Chemical analysis, a series of monographs on analytical chemistry and its applications. Vol. I) \$7.00. 2117

Contents (abridged): Industrial hygiene and industrial poisons. Sampling. Measurement of gas volume and quantity. Absorbers and absorbents. The chemical and microscopic estimation of dust. The chemical and microscopic estimation of silica. The dangerous metals—lead, mercury and arsenic. Other harmful metals. The common poisonous compounds of sulfur, phosphorus, nitrogen, oxygen and ozone. The common poisonous compounds of the halogens. Carbon monoxide, carbon dioxide, hydrocyanic acid and cyanogen. General methods for the determination of combustible and solvent vapors. Paraffin and unsaturated aliphatic hydrocarbons. Benzene and the aromatic hydrocarbons. Halogenated hydrocarbons. Alcohols, glycols and alcohol-ethers, and ethers. Acids, esters, aldehydes and ketones. Phenolic compounds, aniline and derivatives. Chemical warfare agents. Appendix: Conversion table for gases and vapors. Limits of inflammability and explosive range. Probable safe concentration limits of exposure for gases. Threshold concentration of irritants and toxic smokes. Comparative strength of lachrymators. Order of toxicity of the war gases. Most important gases of World War, 1914-1918. Author index. Subject index.

Note: A comprehensive, technical treatment of the subject. Each substance is carefully identified and its properties, toxicity, physiological responses, occurrence of hazard are given, with the methods of detection and determination.

KOLMER, JOHN ALBERT, AND LOUIS TUFT

Clinical immunology, biotherapy and chemo-

therapy in the diagnosis, prevention and treatment of disease. Philadelphia: W. B. Saunders Company, 1941. 941 p. illus. (part col.) 24 cm. \$10.00. 2118

Contents (abridged): General aspects of infection, immunity, biotherapy and chemotherapy. Practical applications in prophylaxis and treatment of disease. Septicemia. Meningitis. Staphylococcal diseases. Streptococcal diseases. Pneumococcal diseases. Meningococcal diseases. Gonococcal diseases. Diphtheria. Tetanus and gas gangrene. Pertussis. Typhoid. Paratyphoid, bacillary dysentery, Asiatic cholera, botulism and food poisoning. Undulant fever. Tuberculosis and leprosy. Anthrax, tularemia, glanders, plague, chancroid, bacillus Friedlander, bacillus pyocyaneus, and urinary tract infections. Syphilis. Frambesia tropica and pinta, relapsing fever, rat-bite fever, infectious jaundice, Vincent's angina and other fusospirochetal diseases. Typhus and Rocky Mountain spotted fever. Smallpox and vaccinia, varicella, trachoma and lymphopathia venereum. Common cold, influenza, "influenza meningitis," measles, mumps, dengue fever and yellow fever. Rabies, acute anterior poliomyelitis, equine encephalomyelitis of man, and psittacosis. Amebiasis, vaginal trichomoniasis, giardiasis, leishmaniasis and lymphogranuloma inguinale, trypanosomiasis, malaria, helminthic infestations and snake bites. Asthma, allergic rhinitis, hay fever, gastro-intestinal allergy, migraine, allergic dermatoses, urticarial dermatoses, atopic and contact dermatitis, dermatophytoses and dermatophytids. Index.

Note: Prepared primarily from the clinical standpoint for practitioners and public health physicians, this book also includes much of interest and use to medical students. It is not a laboratory book but is aimed at providing a complete coverage of all the important diseases that respond to biotherapy and chemotherapy. It gives descriptions of prophylactic and immunologic methods and advice on the use of sera, vaccines, antitoxins, including prevention and treatment of reactions. The techniques of tests are described, for the physician may need to perform them in his office or at the bedside. Interpretation of the findings of all tests are given. There is extensive consideration of blood transfusion and blood storage. Tables of end-results and quick-reference summaries are included. Bibliographies are placed at the ends of chapters.

LONG, PERRIN HAMILTON, AND ELEANOR A. BLISS

The clinical and experimental use of sulfanilamide, sulfapyridine and allied compounds. New York: The Macmillan Company, 1939. 319 p. illus. 24 cm. (The Macmillan medical monographs) \$3.75. 2119

Contents: The historical aspects of sulfanilamide therapy. The chemotherapy of experimental bacterial infections. Experimental toxicity and comparative pharmacology of sulfanilamide and allied compounds. The mode of action of sulfanilamide and its derivatives. The clinical use of sulfanilamide. The clinical use of sulfapyridine, the sulfanilyl sulfanilamides and benzylsulfanilamide. The clinical use of protosil and enoprontosil. The clinical toxic manifestations of sulfanilamide and its derivatives. Index of authors. Subject index.

Note: The authors of this monograph are pioneers in the study and use of sulfonamides, and they present here a survey of existing knowledge of the fundamental mechanisms of action and application in clinical medicine. Methods and duration of treatment are discussed in connection with each disease in which these drugs are used, together with toxic manifestations and directions for their prevention, recognition, and treatment. A list of references is given with each chapter.

LUTEN, DREW

The clinical use of digitalis. Springfield, Ill.: Charles C. Thomas, 1936. 226 p. illus. 23 cm. \$3.50. 2120

Contents: Effect on ventricular muscle. Effect on the A-V tissues. Effect on the pacemaker in normal rhythm. Diuretic effect. Effect on the blood vessels and on blood pressure. Electrocardiographic effects. Toxic effects (including vagotonic effects). Indications. Use in certain special situations. Dosage and method of administration. Contraindications and dangers. Digitalis and prognosis. Therapeutic theses. Bibliography. Index.

Note: The author states that the purpose of this book is to present clearly the various problems in the clinical use of digitalis, and to note in each instance certain data that have accumu-

lated toward a solution. The therapeutic use of digitalis has had the benefit of much new knowledge regarding diseases of the heart and other advances in this field, and it is the author's intention to "take stock" of the situation. There is no detailed review of the recent literature on this subject. Instead the author has summarized the evidence, quoting authoritative opinion freely. He has made no attempt to harmonize conflicting opinions, but has expressed conceptions arrived at from his own experience in the clinical use of the drug. The book is intended for students and practitioners of medicine, especially cardiologists.

LYNN, ELDIN VERNE

Pharmaceutical therapeutics, with pharmacology, posology and toxicology. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 430 p. 21 cm. (McGraw-Hill publications in pharmacy) \$4.00. 2121

Contents: Substances of no remedial value. Acting locally—protective. Acting locally—irritant. Acting locally—on the cause of disease. The alimentary tract. The genito-urinary tract. The respiratory tract. The circulation. The nervous system. Specifics. Metabolic. Important poisons not used as drugs.

Note: Discusses the physiological actions of each drug which are most important in the treatment of disease and most significant in the diagnosis and treatment of poisoning. The principles of therapeutic employment are given in outline and the symptoms of toxic effects are presented. Keeping in mind the four objects of pharmacology, therapy, toxicology and posology, the author has incorporated many new and useful drugs not included in *United States Pharmacopoeia* xi or *National Formulary* vi.

McCLURE, FRANK JAMES

Fluorides in food and drinking water; a comparison of effects of water-ingested versus food-ingested sodium fluoride. Washington, D.C.: Government Printing Office, 1939. 53 p. illus. 22 cm. (United States. National Institute of Health. Bulletin no. 172) \$0.15. 2121a

Contents: Introduction. Plan of experiment: Method used for determination of fluorine. Results of experiment: Average daily body gain. Composition of bones. Composition of incisor teeth. Photographic studies of incisor teeth. The balance of fluorine. Discussion: Acute water-borne experimental fluorosis. Chronic fluorosis. Fluorine in food and drinking water. Conclusions. Bibliography.

Note: The aim of the experiments reported in this bulletin was the study of chronic fluorosis, particularly from the standpoint of severity of effects produced by sodium fluoride ingested in the food as compared with similar quantities ingested in the drinking water. Growing young rats were the experimental animals.

McGUIGAN, HUGH ALISTER

Applied pharmacology. St. Louis: The C. V. Mosby Company, 1940. 914 p. illus. (part col.) 25 cm. \$9.00. 2122

Contents (abridged): Pharmacology and its subdivisions. Theories and modes of pharmacological actions. Absorption. Conditions modifying the action of drugs. Classification of drugs. Pharmacopoeias. Alcoholic preparations. International uniformity in potent preparations. Elementary composition of the body. Pharmacology of respiration. Barometric pressure. Pharmacology of the skin. Irritants and counterirritation. Germicides and antiseptics. Dyes. Halogens and halogen compounds. Acids. Alkalies. Soaps. Drugs acting on the alimentary tract. Odors. Pharmacology of the salivary glands. Mouthwashes. Astringents. Intestine. Cathartics. Anthelmintics. Circulation of the blood. Pharmacology of the heart and circulation. Edema. Shock. Reticulo-endothelial system. Pharmacology of the liver and kidneys. Alcohols. Anesthetics. Bromides. The autonomic nervous system. Drugs acting on sympathetic myoneural junctions. Drugs which act chiefly on the parasympathetic system. Pharmacology of the eye, muscle, and motor nerve endings to striated muscles. Pharmacology of the uterus. Body temperature. Proteins. Anaphylaxis and allergy. Metals. The chemotherapy of syphilis. Vitamins. Hormones and autopharmacology. Prescription writing. Index.

Note: This textbook for students of pharmacology and reference for physicians attempts to connect physiology, biochemistry,

and pharmacology with the clinical applications. In discussing pharmacological action, the evidence and reason for each statement made is given briefly. The physiology of the body is described with emphasis on the chemical action of food, the causes of various diseases and disorders of the organs, and the physiological effects of the drugs indicated in each disease. Chemical formulas are given for each drug, together with the origin, derivation of name, use in treatment, metabolism, and average doses.

McNALLY, WILLIAM DUNCAN

Medical jurisprudence and toxicology. Philadelphia: W. B. Saunders Company, 1939. 386 p. illus. 24 cm. \$3.75. 2124

Contents: Medical jurisprudence. The courts. Signs of death. Sudden death. Identification of the dead. Injuries, burns, abortion, infanticide, and insanity. Bloodstains, seminal stains, and spectrographic analysis. X-rays and radium. Toxicology. Classification and examination. Inorganic poisons. Irritant poisons. Heavy metals. Gaseous poisons. Alkaloidal poisons. Nonalkaloidal organic poisons. Local anesthetics. Food poisoning and food-borne infections. Bites and stings. Silicosis and asbestosis. Appendix: Some common factors of mass, length, time, angle, area, and volume. Index.

Note: Although both medical jurisprudence and toxicology are taken up in this book, the greater emphasis is on toxicology. In this respect, it is aimed at the needs of students of medicine, pharmacy, and dentistry, at the same time outlining the essential facts the physician may be required to know when called as a witness in a medico-legal inquiry. One of the features is the coverage of poisons. The author tells how to differentiate poisons from diseases with simulating symptoms, giving under each symptom, tables that show first the poisons causing the symptom and then the diseases in which that same symptom is present. The urine changes from poison are given as well as significant forensic facts. The properties of each poison, its symptoms, the fatal dosage, and fatal period are described. Treatment and antidotes are included as well as postmortem appearances and tests for use in establishing the cause of death. There is a section on ballistics. References are given in the text proper.

MAHER, FRANK THOMAS

The reticulo-endothelial system in sulfonamide activity. With 23 figures. Urbana, Ill.: The University of Illinois Press, 1944. 232 p. illus. 27 cm. (Illinois monographs in the medical sciences. Vol. v, nos. 1-2) Paper, \$2.50; cloth, \$3.00. 2125

Contents (abridged): Part I, Introduction—scope of the problem. Part II, Historical development: Relationship of chemical structure to therapeutic activity. Action of sulfonamides on bacterial growth. Action of sulfonamides against toxic by-products of bacteria. Therapeutic considerations. Part III, Procedures and methods: Methods of determination of sulfonamides. Part IV, Limiting experiments: The conjugation phenomenon. Methods of blocking the reticulo-endothelial system. Preliminary experimental infections in rabbits. Effect of blocking procedures on bacterial cultures. Bacteriostasis. Part V, Effect of reticulo-endothelial blockade on sulfonamide chemotherapy in rabbits: Vital experiments. Histological investigation. Part VI, Discussion and conclusions. Bibliography. Plates.

Note: A report of experiments which were carried out to evaluate reticulo-endothelial activity in sulfonamide chemotherapy in experimental animals. The experiments were undertaken in order to clarify contradictions evident in the literature. The author concludes that reticulo-endothelial activity is vital to the manifestation of sulfonamide chemotherapy, since extensive experiments demonstrated that in the functional absence or depression of reticulo-endothelial system (through administration of thorotrast), sulfathiazole is not capable of protecting rabbits against staphylococcal infection, whereas in normal rabbits a significant degree of protection is demonstrable.

MELLON, RALPH ROBERTSON, AND OTHERS

Sulfanilamide therapy of bacterial infections, with special reference to diseases caused by hemolytic streptococci, pneumococci, meningococci and gonococci, by Ralph R. Mellon, Paul

Gross and Frank B. Cooper. Springfield, Ill.: Charles C. Thomas, 1938. 398 p. illus. 23 cm. \$4.00. 2126

Contents (abridged): Section I, Review of earlier literature dealing with the chemistry and pharmacology of the sulfonamide compounds and their experimental and clinical employment. Section II, The authors' experiments dealing with the bacteriostatic effects of sulfanilamide in vitro and the results of therapy with sulfonamide compounds on streptococcal and pneumococcal infections in laboratory animals, together with their observations on the clinical use of these compounds in pneumonia and in streptococcal meningitis. Section III, Mechanism of action of sulfonamide compounds and the mobilization of the defensive factors of the host. Section IV, General chemotherapeutic considerations and criteria of therapeutic efficiency as determined by host factors, experimental conditions, and the variability of the infective agent. Addenda: Photosensitization and the allergic-like action of sulfanilamide. Control of sulfhemoglobinemia. Elixir of sulfanilamide (Massengill). Staphylococcal infections and the sulfonamide compounds. Sulfonamide compounds and the filterable viruses. The marrow culture medium for bacteriostasis tests in chemotherapeutic studies. Index.

Note: The significant clinical and experimental information available on sulfonamide and related compounds in 1938 is made known, and the clinical data have been digested and analyzed and presented in sections according to the causative organism. Treatment, dosage, choice of drugs, and their manner of administration are discussed. Much light is thrown on the mechanism of the drug's action. Convenient graphs and chapter summaries recapitulate practical aspects. Index.

NATIONAL RESEARCH COUNCIL. DIVISION OF BIOLOGY AND AGRICULTURE. COMMITTEE ON PHARMACEUTICAL BOTANY AND PHARMACOGNOSY

Check list of native and introduced drug plants in the United States (not including insular possessions in the West Indies and the distant Pacific) prepared by E. N. Gathercoal, with the collaboration of H. W. Youngken. Chicago: National Research Council, 1942. 32 leaves. 28 cm. \$0.50. 2128

Contents: Foreword. Limitations. Statistical summary. Drugs. Official recognition of the drugs. Check list. Foreign medicinal plants. Unlisted U.S. Pharmacopoeial items.

Note: This check list is for botanists. It includes those drugs listed in the U.S. Pharmacopoeia or National Formulary, with the addition of 53 "unofficial" drugs. Each listing consists of the botanical name, the drug name, and the official listing in the U.S. Pharmacopoeia or the National Formulary.

NEAL, PAUL ARDEEN, AND OTHERS

A study of the effect of lead arsenate exposure on orchardists and consumers of sprayed fruit, by Paul A. Neal, Waldemar C. Dreesen, Thomas I. Edwards, Warren H. Reinhart, Stewart H. Webster, Harold T. Castberg, and Lawrence T. Fairhall. Washington, D.C.: Government Printing Office, 1941. 181 p. illus. 22 cm. (United States. Public Health Service. Public health bulletin no. 267) \$0.40. 2129

Contents: Summary. A study of the effect of lead arsenate exposure on orchardists and consumers of sprayed fruit. Environmental studies. Description of the people who were studied. Nature of the medical procedure. Results of the medical examination. Discussion of the possible relation of other diseases and abnormalities to lead arsenate exposure. Special topics: Fertility. Chemical methods of lead and arsenic analysis. Further experimental work on the physiological effect of lead arsenate on man or animals. Fecal lead and fecal arsenic content. Climate of the Wenatchee region. Tables for converting measurements expressed in metric units to avordupois units. Acknowledgments. Bibliography. Index.

Note: This bulletin reports the results of an epidemiologic study on field operations extending over a 14-month period of

1,231 men, women, and children living in an apple region where large quantities of lead arsenate have been used for years as insecticide sprays. The study was concerned with the possible injury to health of people exposed to lead arsenate whether by ingestion on fruit, by inhalation of spray mist or dust, or by other forms of exposure.

NEWMAN, HENRY WISE

Acute alcoholic intoxication, a critical review. Stanford University, Calif.: Stanford University Press, 1941. 207 p. illus. 23 cm. \$2.50. 2130

Contents: General actions of ethyl alcohol: Absorption and distribution. Excretion. Combustion. Toxicology of ethyl alcohol: Acute toxicity. The chemical diagnosis of drunkenness. Treatment of acute alcoholic intoxication. Author index. Subject index.

Note: An evaluation and correlation of the research of the past two decades on acute alcoholic intoxication in its biochemical, physiological, and medico-legal aspects.

THE PHARMACOPOEIA OF THE UNITED STATES OF AMERICA

The Pharmacopoeia of the United States of America. Twelfth revision (U.S.P. XII.) Official from November 1, 1942. Washington, D.C.: Board of Trustees of the United States Pharmacopoeial Convention, 1942. 880 p. 23 cm. \$7.50. 2131

Contents (abridged): U.S. Pharmacopoeial titles in English and Spanish. The history of the United States Pharmacopoeia. Abstract of the proceedings of the convention of 1940. International protocol. Articles added to the U.S.P. XII. Articles official in the U.S.P. XI but not admitted to the U.S.P. XII. Changes in official titles. Monographs on vegetable and animal drugs, chemicals, and preparations. General tests, processes, and apparatus. Reagents, test solutions, indicators, standard solutions, and hydrogen ions. Tables. Index.

Note: The twelfth revision of the U.S. Pharmacopoeia follows the original plan of Dr. Lyman Spalding, founder and chairman of the first U.S.P. in 1820, which provided for the calling of a national convention of medical societies and colleges in the United States to coordinate and communicate the best of current pharmacopoeial knowledge. The present edition marks the launching of a new program to produce a new Pharmacopoeia every five years, a bound supplement halfway between, and interim revision announcements or sheet supplements whenever required. In selecting the medicinal substances and preparations for inclusion in the twelfth edition, trademark or patent complications which might be involved in some cases have been ignored, the question of therapeutic value only being considered. A feature of the revision work has been the attempt, based on cooperative researches on important subjects, to harmonize the titles and standards of the present volume with that of the British Pharmacopoeia. Many new reagent standards and new monographs on drugs have been added, together with new material on the standardization and control of sterile products and on biological assays.

THE PHARMACOPOEIA OF THE UNITED STATES OF AMERICA

Epitome of the Pharmacopoeia of the United States and the National Formulary, with comments. Corrected and revised in accordance with the twelfth revision of the Pharmacopoeia and the seventh edition of the National Formulary. Issued under the direction and supervision of the Council of Pharmacy and Chemistry of the American Medical Association. Seventh edition. Chicago: American Medical Association, 1943. 271 p. 17 cm. \$0.60. 2132

Note: This volume gives the information contained in the U.S. Pharmacopoeia and the National Formulary which is useful to physicians and omits the technical data which are chiefly of value to pharmacists. The following information is given for each item: official titles and their abbreviations, synonyms, brief definitions, concise descriptions of the physical properties, actions,

uses, and dosage. Those items which are included in the thirteenth edition of Useful drugs are starred, while those considered to be without therapeutic value are commented upon adversely. A complete index is included. The first edition of this book was published in 1907 under the title, *Physicians' manual of the U.S. Pharmacopoeia and National formulary*.

RESEARCH COUNCIL ON PROBLEMS OF ALCOHOL. SCIENTIFIC COMMITTEE

Alcohol addiction and chronic alcoholism, edited on behalf of the Scientific Committee of the Research Council on Problems of Alcohol by E. M. Jellinek. New Haven: Yale University Press, 1942. 336 p. illus. 24 cm. (Effects of alcohol on the individual; a critical exposition of present knowledge. Vol. 1) \$4.00. 2134

Contents: Preface, by Karl M. Bowman. Scope and method of the study, by E. M. Jellinek. Part I. Alcohol addiction and its treatment, by Karl M. Bowman and E. M. Jellinek. Alcoholic mental disorders, by Karl M. Bowman and E. M. Jellinek. Bibliography for Part I. Part II. Vitamin deficiencies in chronic alcoholism, by Norman Jolliffe. Alcoholic encephalopathies and nutrition, by Norman Jolliffe, Herman Wortis, and Martin H. Stein. Marchiafava's disease, by Giorgio Lolli. Cirrhosis of the liver, by Norman Jolliffe and E. M. Jellinek. Bibliography for Part II. Subject index.

Note: This volume presents an analysis of the literature on the etiology and treatment of alcohol addiction and the mental and bodily diseases of chronic alcoholism. Much of the material is synthesized in tabular form, and there is an exhaustive bibliography. The purpose of the volume is to clarify the problems reviewed as a basis for future research, and to serve as a reference work.

ROGERS, CHARLES HERBERT

A text-book of inorganic pharmaceutical chemistry. Third edition, thoroughly revised. Illustrated with 52 engravings. Philadelphia: Lea & Febiger, 1943. 704 p. illus. 24 cm. \$7.50. 2135

Contents (abridged): Oxygen and ozone. Hydrogen. Water and hydrogen peroxide. Nitrogen, nitrous oxide and ammonia. The halogen family. The alkali metals. The coinage metals. The alkaline earth metals. Beryllium and magnesium and their compounds. Boron, aluminum and metals of group III. The elements of group IV. The phosphorus family. The elements of group VI. Iron, cobalt and nickel. The platinum metals and their compounds. The inert gases. Radioactivity and the radioactive elements. Appendix. Index.

Note: The history, occurrence, physical and chemical properties, tests for identity, metallurgy, the pharmacological actions of their ions, and industrial and medicinal uses of the elements are presented. The inorganic compounds and a few of the official salts of some organic acids follow in alphabetical order. Commercial methods of manufacture are covered. This edition was revised to conform to the twelfth revision of the *United States Pharmacopoeia* and the seventh edition of the *National Formulary*. It is intended as a text for pharmaceutical students and as a reference book for physicians.

SIEVERS, RUDOLPH FRED, AND OTHERS

A medical study of men exposed to measured amounts of carbon monoxide in the Holland Tunnel for 13 years, by Rudolph F. Sievers, Thomas I. Edwards, and Arthur L. Murray. Washington, D.C.: Government Printing Office, 1942. 74 p. illus. 23 cm. (United States. Public Health Service. Public health bulletin no. 278) \$0.15. 2136

Contents: Abstract. Introduction. Carbon monoxide exposure in the tunnels. Summary of the results of medical examination of Holland Tunnel officers made in 1932. Results of the medical study made in March, 1941. Results of laboratory tests. Other exposures to carbon monoxide. Urinary lead output of traffic officers. Summary and conclusions. Acknowledgments. Annotated bibliography. Index.

Note: This bulletin reports the results of medical examinations of 156 traffic officers who had been on duty at the Holland Tunnel for 13 years and 4 months. The results are published as of interest to physicians and engineers engaged in industrial hygiene work who are confronted with the problem of safeguarding the health of workers whose duties make it necessary for them to be exposed to noxious gases which cannot be completely removed from the working environment. The question also is considered whether repeated exposure to carbon monoxide gas of low concentration may lead to a condition of chronic carbon monoxide poisoning.

SILVERMAN, MILTON MORRIS

Magic in a bottle. New York: The Macmillan Company, 1941. 332 p. 22 cm. \$2.75. 2137

Contents: The conquest of pain. The amazing alkaloids. Housewife's recipe. Blessing from Hell. Kill the germs! The fever-fighters. Synthetic lullaby. Food against death. Magnificent trifles. The red assassin. Bibliography. Index.

Note: The story of the men who developed important drugs in modern medicine, written primarily for the general reader. In a readable style it tells of the work of Frederick Sertuener, Pierre Pelletier, William Withering, Carl Koller, Paul Ehrlich, Hermann Kolbe, Emil Fischer, Christiaan Eijkman, Charles Brown-Séquard and Gerhard Domagk. There is a nine-page bibliography.

SMALL, LYNDON FREDERICK, AND OTHERS

Studies on drug addiction, with special reference to chemical structure of opium derivatives and allied synthetic substances and their physiological action, by Lyndon F. Small, Nathan B. Eddy, Erich Mosettig, and C. K. Himmelsbach. Washington, D.C.: Government Printing Office, 1938. 143 p. illus. 23 cm. (United States. Public Health Service. Supplement no. 138 to the Public health reports) \$0.60. 2138

Contents: Introduction. Some relationships between chemical constitution and pharmacological action in the morphine series. Attempts to synthesize substances with central narcotic and, in particular, analgesic action. Clinical studies of drug addiction, with special reference to opium derivatives and allied synthetic substances. List of publications of the Committee on Drug Addiction, National Research Council, 1930-37. Index.

Note: The three studies reported in this volume were conducted by the Committee on Drug Addiction of the Division of Medical Sciences of the National Research Council. Their purpose was to find, if possible, some means of reducing or correcting the evils of drug addiction. Their publication was intended to be of value not only to those interested in drug addiction but also to chemists, clinicians, physiologists, pharmacologists, and all interested in the question of the relationship between chemical structure and pharmacological action in animals and man.

SMITH, MAURICE ISADORE

I. A method for quantitating neuromuscular irritability. The effect of certain drugs on the neuromuscular apparatus. II. The pharmacologic action of some alcoholic phosphoric esters. Washington, D.C.: Government Printing Office, 1936. 29 p. illus. 23 cm. (United States. National Institute of Health. Bulletin no. 165) \$0.05. 2139

Contents: I. A method for quantitating neuromuscular irritability. The effect of certain drugs on the neuromuscular apparatus. Results. Discussion. Summary. References. II. The pharmacologic action of some alcoholic phosphoric esters. Experimental. Discussion. Summary and conclusions. References.

Note: The first part of this bulletin describes a method for measuring neuromuscular irritability in the living animal for the purpose of ascertaining the systematic effects of pharmacologic agents and other experimental procedures on the peripheral motor apparatus, and discusses the effects of the barbiturates, alcohol, and curare on the neuromuscular apparatus as demonstrated by this method. The second part of the bulletin describes the examination and comparison of the pharmacologic properties of the phosphoric esters of ethyl alcohol, B-chlorethyl alcohol, and choline with those of the respective alcohols.

SOLLMANN, TORALD HERMANN

A manual of pharmacology and its applications to therapeutics and toxicology. Sixth edition, entirely reset. Philadelphia: W. B. Saunders Company, 1942. 1298 p. illus. 25 cm. \$8.75. 2140

Contents (abridged): Pharmacognosy. Pharmaceutic standards and methods. Classes of pharmaceutic preparations. Prescription writing. Metrology. Coloring and flavoring. Solubilities. Incompatibility. General toxicology. Medicinal foods. Digestive ferments. Protein foods and amino acids. Carbohydrate foods. Insulin. Phlorhizin. Fatty foods. Cholesterol. Lecithins. Vitamins. Chaulmoogra oil. Emollients, demulcents and protectives. Local irritants, corrosives and astringents. Gaseous irritants and "war gases." Physical counter-irritants. Carminatives. Cathartics. Cholagogues and cholericics. Anthelmintics. Convulsant poisons. Theories of narcosis. Alcohol. Anesthetics. Hydrocyanic acid and cyanides. Physical factors of "salt actions." Osmotic actions on cells and tissues. Cesium and rubidium. Ammonium compounds. Expectorants. Urea. Calcium salts. Strontium. Oxalic acid and oxalates. Fluorides. Bromides. Iodine, iodides and thyroxin. Reaction of the body. Organic acids and their salts, acetates, formates. Succinates, lactates, malates. Citrates. Urate solvents. Metals and their compounds. Inorganic and organic arsenic compounds. Tellurium. Selenium. Vanadium. Titanium, molybdenum, uranium. Antimony. Bismuth. Iron. Anti-anemic liver and stomach preparations. Metals. Appendix—bibliography of papers appearing since 1921. Index.

Note: Written for the student and practitioner, this book furnishes an extensive outline of current knowledge of drug actions, especially from the point of view of their practical importance in medicine, therapeutics, and toxicology. The sixth edition has been revised to include the advances in the fields of sulfonamides, antimalarial agents, anesthetics and hypnotics, convulsants and anticonvulsants, synthetic autonomic agents, and in hormones and vitamins.

SINK, WESLEY WILLIAM

Sulfanilamide and related compounds in general practice. Second edition, revised and reprinted. Chicago, Ill.: Year Book Publishers, Inc., 1944. 376 p. illus. 21 cm. (The general practice manuals) \$3.00. 2142

Contents: Historical development. The sulfonamide compounds: general considerations. General principles of therapy. Treatment of streptococcal infections. Treatment of staphylococcal infections. Treatment of upper respiratory infections and pneumonia. Treatment of meningitis. Treatment of infections of the genito-urinary tract. Treatment of intestinal diseases and a miscellaneous group of infections. Local use of the sulfonamide compounds: including oral and parenteral therapy in surgical conditions. Prophylactic use of sulfonamide compounds. Use of the sulfonamide compounds in dermatology. Use of the sulfonamide compounds in dentistry. Toxic manifestations of the sulfonamide compounds. Subject index. Bibliography.

Note: A clinical handbook for physicians and surgeons on the use of the sulfonamides, this volume covers all the approved methods of application, and the diseases and branches of medicine and surgery to which these compounds are applicable. Dosage and dosage control for the indicated usages are given in grains, in grams, and in many instances, in the number of tablets of commercial preparations; exact amounts for first-dose medication and for continued therapy are stated, and the periods over which it is usually advisable to continue treatment for specific conditions are outlined. Rule of thumb guides are provided to meet the need for insuring early satisfactory blood concentration when laboratory means of determination are not available. Tables list choice of drugs for various diseases, infectious conditions susceptible to the sulfonamides, characteristic reactions, etc. Adopted by the United States Army.

STRECKER, EDWARD ADAM, AND FRANCIS T. CHAMBERS, JR.

Alcohol: one man's meat. New York: The Macmillan Company, 1938. 230 p. 21 cm. \$3.00. 2143

Contents: The psychology of alcoholism: Alcohol, the camouflaged narcotic. The identification of the alcoholic. Further identification of the alcoholic. Suggested psychological mechanisms in

abnormal drinking. The alcohol saturated personality. Alcohol and sex. The alcoholic breakdown. Treatment of alcoholism: Theory of treatment. Approach to treatment. Physiological and nutritional factors.

Note: These authors stress the importance of recognition by the doctor, the patient, and the family of the neurosis responsible for alcoholism. Habitual drunkards are classified into three general types: maniac, inferior, childhood dominant. The course of treatment recommended considers psychological, nutritional, and physiological factors.

STUHR, ERNST THEODORE

Manual of Pacific Coast drug plants; a consideration of the medicinal plants thriving throughout the Pacific Slope states—presenting the scientific and common names, part used, therapeutic uses and approximate range of the respective plants; especially adapted as a reference of existing economic plants. Lancaster, Pa.: The Science Press, 1933. 189 p. illus. 23 cm. \$2.65. 2144

Contents: Abbreviations of authorities and symbols. Manual of Pacific Coast drug plants. Bibliography (references). Technical botanical terms. Technical therapeutical terms. Index of plant families. Scientific names of plants. Common and generic names of plants.

Note: A compilation of information for the botanist and pharmacist, drawn from scattered sources. Each entry gives the botanical name, the common name, a descriptive note, use as a drug, range, and habitat.

THIENES, CLINTON HOBART

Clinical toxicology. Philadelphia: Lea & Febiger, 1940. 309 p. illus. 20 cm. \$3.50. 2145

Contents: Convulsant poisons. Central nervous system depressants. Peripherally acting nerve poisons. Poisons acting on nerve trunks, ganglia and nerve endings. Muscle poisons. Protoplasmic poisons. Poisons of the blood and hematopoietic organs. Principles of treatment. An outline of symptom diagnosis. Chemical diagnosis of poisoning. Appendix.

Note: This work is both a classroom text and a guide for the general practitioner. Fundamental facts are presented in the earlier chapters and generalities at the end of the book. Poisons are grouped according to their major toxic action. The chemical tests are those which have been found to give the best reactions for identification. Those which are specific for their respective compounds are described fully. Biological tests are included in those cases where they are of value and where chemical evidence for a specific organic substance is not clear.

TRUMPER, MAX

Memoranda of toxicology. Third edition. Philadelphia: The Blakiston Co., 1937. 304 p. 16 cm. \$2.00. 2146

Contents (abridged): Part I, General toxicology and corrosives: Definition, diagnosis, duties of the practitioner, treatment, detection, classification, concentrated mineral acids, corrosive vegetable acids, corrosive organic derivatives, caustic alkalies and carbonates. Part II, Simple irritants: Potassium salts, lime, zinc, silver, tin, bismuth, chromium, iron, vegetable, animal, gases. Part III, Specific irritant poisons: Iodine, potassium iodide, bromine, potassium bromide, phosphorus, arsenic, antimony, mercury, lead, copper salts, barium salts, vegetable, animal cantharides. Part IV, Neurotic poisons: Narcotics, anesthetics, inebriants, delirants, convulsants, paralyzants, hyposthenisants, depressants, asphyxiants, abortives. Appendix.

Note: Presents in convenient pocket size a practical discussion of poisons and poisoning and gives the latest methods of treatment. It includes newly developed views in regard to antidotes and methods of treatment resulting from extensive studies in toxicology, physiology, and clinical chemistry, supplemented by observations in medical clinics and hospitals.

UNDERHILL, FRANK PELL

Toxicology; or, The effects of poisons. Thoroughly revised by Theodore Koppányi. Third

edition. Philadelphia: The Blakiston Co., 1936. 325 p. 20 cm. \$2.50. 2147

Contents: The principles of toxicology. Inorganic poisons—corrosive acids and alkalies. Poisonous gases. Metallic poisons, Alkaloidal poisons. Miscellaneous organic poisons. Index.

Note: A concise and easily readable treatise especially suited for didactic purposes. It discusses a number of new substances and includes newer knowledge on known poisons, their actions and antidotes.

VON OETTINGEN, WOLFGANG FELIX, AND OTHERS

Experimental studies on the toxicity and potential dangers of trinitrotoluene (TNT), by W. F. Von Oettingen, D. D. Donahue, R. K. Snyder, B. L. Horecker, A. R. Monaco, A. H. Lawton, T. R. Sweeney, and P. A. Neal. Washington, D.C.: Government Printing Office, 1944. 78 p. illus. 23 cm. (United States. Public Health Service. Public health bulletin no. 285) \$0.15. 2148

Contents: Introduction. Spectrophotometric analysis of urine samples for TNT, 2, 6-dinitro-4-hydroxylaminotoluene, and 2, 6-dinitro-4-aminotoluene. A new test for the detection and appraisal of exposure to TNT. Toxicity of TNT for dogs with inhalation of its fumes. Toxicity of TNT for dogs with daily insufflation of TNT dust. Appraisal of the toxic dose of TNT with continued oral administration to dogs. Effect of continued feeding of TNT to dogs. Production of methemoglobin and denatured globin in dogs poisoned with TNT. Effect of ingestion of small quantities of TNT on humans. Absorption of TNT through the intact skin of swine. Absorption of TNT through the intact skin of human subjects. Relationship between dietary factors and TNT poisoning in dogs. Effect of feeding ascorbic acid on TNT poisoning in guinea pigs. Summary and conclusions.

Note: This publication reports the details of a number of experiments to test the toxicity of TNT. References are given at the ends of chapters.

VON OETTINGEN, WOLFGANG FELIX, AND OTHERS

Studies on the mechanism of carbon monoxide poisoning as observed in dogs anesthetized with sodium amytal, by W. F. Von Oettingen, D. D. Donahue, P. J. Valaer, and J. W. Miller. Washington, D.C.: Government Printing Office, 1941. 50 p. illus. 22 cm. (United States. Public Health Service. Public health bulletin no. 274) \$0.10. 2149

Contents: Introduction. Experimental procedure. Effect of sodium amytal on the physiologic functions. Effect of exposure to 1 per cent carbon monoxide in air. Effect of inhalation of 0.25 per cent carbon monoxide in air. Effect of inhalation of air in carbon monoxide poisoning. Summary. Acknowledgments. Bibliography.

Note: This bulletin reports experiments performed with dogs to show the effects upon the central nervous system of carbon monoxide poisoning. The results are shown in tables and graphs as well as in the text.

VON OETTINGEN, WOLFGANG FELIX

The therapeutic agents of the quinoline group, cinchophen, plasmoquine, nupercaine, quinine, and acridine dyes; the relation between their chemical constitution and pharmacologic action. New York: The Chemical Catalog Company, Inc., 1933. 301 p. 23 cm. (American Chemical Society monograph series. No. 64) \$6.00. 2150

Contents: Introduction. Quinoline. Alkyl and aryl substituted quinolines. Hydroxyl derivatives of quinoline. Hydrogenation products of quinoline. Quaternary bases of quinoline. Quinoline carboxylic acids. Aminoquinoline derivatives. Quinine group. Hydrocupreines. Quinoline dyes. Acridine dyes. Phosphines. Index.

Note: This volume is intended to serve as a guide to the literature of the quinoline derivatives, for the use of the research chemist and pharmacologist. It also brings together the available pharmacological data relating to each derived compound. Chemical data and references to literature dealing with the chemical aspects of the subject are less complete. All references are cumulated at the end of the volume. The same author has written the following supplement to this work: *The therapeutic agents of the pyrrole and pyridine group, including the tropinol, scopoline, ecgonine, and granatoline derivatives*, Ann Arbor, Mich., 1936, 258 p., \$4.75.

WALTON, ROBERT PETRIE

Marihuana, America's new drug problem. A sociologic question with its basic explanation dependent on biologic and medical principles. With a foreword by E. M. K. Geiling and a chapter by Frank R. Gomila and M. C. Gomila Lambou. Philadelphia: J. B. Lippincott Company, 1938. 223 p. illus. 23 cm. \$3.00. 2151

Contents: History of the hashish vice. Distribution of the hashish vice. Present status of the marihuana vice in the United States, by Frank R. Gomila. Public consciousness of the problem. Appraisal of the situation. The menace to public safety. The plant source. Technique of ingestion or administration. Descriptions of the hashish experience. Literary descriptions. Scientific descriptions. Acute effects. Chronic effects. Therapeutic applications. Pharmaceutical and chemical considerations relating to the drug. Chemical composition of the active material. Nomenclature. Bibliography. Indexes.

Note: The material presented in this study is mainly a collection and summary of previously published literature. The sources of the data are extremely diverse in origin and the chief contribution of this work is the assembling of such material into one book. Primarily a reference source for those seeking information on the particular features of this drug practice, the work is also interesting to the lay reader and to public health and police officials.

WOOD, GEORGE BACON

The dispensatory of the United States of America, twenty-third edition, based on the twelfth revision of The United States Pharmacopoeia, The National Formulary, seventh edition, and The British Pharmacopoeia 1932 and its Addenda. By Horatio C. Wood, Jr., and Arthur Osol, assisted by Heber W. Youngken and Louis Gershenfeld. Philadelphia: J. B. Lippincott Company, 1943. 1881 p. illus. 26 cm. \$15.00. 2152

Contents: Explanatory introduction. Abbreviations. Part I, Drugs recognized by the United States Pharmacopoeia, The Pharmacopoeia of Great Britain or The National Formulary. II, Drugs not recognized by the above. III, Processes, reagents, solutions, and tables of The United States Pharmacopoeia or The National Formulary. General index.

Note: In this book the following data are given for each drug: official titles, synonyms, abbreviations, official definition, unofficial synonyms and foreign language titles, source or manufacturing process, history, official description and therapeutic uses, toxicology, dosage, storage directions, and official preparations. The revolutionary changes in pharmacology and therapeutics which have occurred during the seven years since the appearance of the 22nd edition have necessitated many changes in this edition. The practice of quoting the U.S. Pharmacopoeia in its entirety has been continued so far as possible, all supplements published up to February 1, 1943, having been included. All changes in the National Formulary released prior to the same date have also been included. The standards of the British Pharmacopoeia and its five Addenda published before this book went to press are given in abstract, and special notation has been made of differences between American and British standards. Replacements for scarce drugs, recommended by the United

States and British official compendia and announced prior to February 1, 1943, are noted. General articles on certain groups of chemically related active principles, such as the glycosides, the alkaloids, the sterids, amino acids, and the surface-active agents, are a new feature of this edition. Similar monographs on the fixed and volatile oils, hydrogen ion concentration, radioactivity, and the colloids, have been revised. The use of graphic chemical formulas for organic compounds has been greatly extended.

YOUNGKEN, HEBER WILKINSON

Text-book of pharmacognosy. Fifth edition. Philadelphia: The Blakiston Company, 1943. 1038 p. illus. 24 cm. \$7.50. 2154

Contents (abridged): Part I, Morphologic considerations of drugs: Fundamental considerations. Morphological classification of crude drugs. Therapeutic classes of drugs. Part II, Taxonomic consideration of drugs: Drugs of vegetable origin. Drugs of animal origin. Microanalytical methods. Bibliography. Index.

Note: This is a systematic text for the use of students in colleges where pharmacognosy is taught either from the morphologic or taxonomic viewpoint. It also meets the requirements of the drug analyst, wholesale and retail pharmacist, and the collector of crude drugs, giving the synonyms, titles, habitats, ash, limit of impurities, physical characteristics, microscopical structure, and constituents of crude drugs of the U.S. Pharmacopoeia and the more common unofficial drugs, condiments, etc., of commerce. Comparative tables of crude drugs, and information as to the geographical sources of supply of many substances are provided. The fifth edition contains new material on constituents of drugs, average doses, animal drugs, therapeutic classes of drugs, commercial sources, methods of production, uses of organic drugs, cultural directions for drug and condiment plants, and other changes in conformity with United States Pharmacopoeia XII, 1942.

Pharmacy

AMERICAN MEDICAL ASSOCIATION. COUNCIL ON PHARMACY AND CHEMISTRY

Annual reprint of the reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1943, with the comments that have appeared in The Journal. Chicago: American Medical Association, 1944. 150 p. 20 cm. \$1.00. 2155

Contents (abridged): Aminophylline. Ampuls of camphor. Anthiomaline. Anti-trichomonas vaginitis agents. Bencllophen. Bismuth subsalicylate in oil. Council standards and medical advertising (editorial). Criteria for evaluation of skin disinfectants. Diethylstilbestrol; enteric coated dosage forms not acceptable. Dosage of vitamin preparations. Hope (false) for victims of arthritis. Human convalescent measles serum and human convalescent scarlet fever serum. Local use of sulfonamides. Menadione bisulfate. Metric system. Mustard cerate. Newspaper advertising of proprietary medicines. Nomenclature of endocrine preparations. Organography with diodrast concentrated solution 70%. Report of Board of Trustees to House of Delegates, 1943. Sodium nicotinate and ampul solution sodium nicotinate-breon. Sta-O-Gen liquid, etc. Staphylococcus toxoid (digest-modified). Status of dichlorophenarsine hydrochloride; of the oral use of the sodium salts of the sulfonamides. Status report on conception control; on the external use of cod liver oil. Sulfadiazine surgical powder sterile, etc. Theobromine. Thytutary. Use of amphetamine sulfate in control of obesity; of estrogens in treatment of prostatic carcinoma; of vitamin D in treatment of refractory rickets. Vitamin D and dihydrotachysterol. Zinc insulin crystals. Index of products and distributors.

Note: These volumes, which have appeared annually since 1905, include reports previously published in The Journal, together with the more technical and scientific portions omitted there, and also reports of lesser importance not published in The Journal.

AMERICAN PHARMACEUTICAL ASSOCIATION

The pharmaceutical recipe book. Third edition. Prepared by the Committee on Recipe Book of the American Pharmaceutical Association. 615.13
Am 3 p3

tion. Washington: The American Pharmaceutical Association, 1943. 551 p. 23 cm. \$5.00.

2155a

Contents (abridged): Historical introduction. Code of ethics. Pharmaceutical formulas. Flavoring extracts and imitation flavors. Table of certified (colors) coal tar dyes. Cosmetic formulas. Technical and miscellaneous formulas. Table of average doses of unofficial drugs. Schedule of antidotes for poisons. Table of solubilities and table of equivalents for preparing percentage solutions. Table of synonyms. Table of Latin terms and abbreviations. Vitamin review. Index.

Note: A compilation of formulae and recipes for the practicing pharmacist, intended to supplement the *National Formulary*, as well as to make available such material as was deleted from the *United States Pharmacopoeia* xii and the *National Formulary* vii. Suggestions from physicians, chiroprapists, veterinarians, etc., were incorporated in this revision.

ARNY, HENRY VINECOME, AND ROBERT P. FISCHELIS

Principles of pharmacy. Fourth edition, reset, with 294 illustrations. Philadelphia: W. B. Saunders Company, 1937. 1139 p. illus. 23 cm. \$8.00.

2155b

Contents (abridged): Pharmaceutic operations and appliances. Galenic pharmaceutic preparations. Inorganic chemistry. Organic chemistry. Pharmaceutic testing. Dispensing of prescription. Index.

Note: Intended for students of pharmacy, this text also is of interest to the graduate pharmacist and chemist, and to the physician. Part i includes the arithmetic of pharmacy. Part ii deals with galenic preparations of the pharmacopoeia and those unofficials worthy of notice. Wherever possible, these preparations are grouped around a typical pharmacopoeial recipe, thus avoiding repetition. Part iii has an introductory chapter on chemical theories, and discusses chemical arithmetic. Part iv discusses the organic chemicals used in pharmacy, according to modern classification. Part v summarizes the analytic methods of the pharmacopoeia. Part vi takes up the prescription from the time it is written to the time it is dispensed. Laboratory work has been distributed throughout the book. A list of abbreviations is given in the front of the book, also a list of reference books. The fourth edition is based on the *United States Pharmacopoeia* xi and the *National Formulary* vi. A supplement issued in 1943 and included with the book at the price noted above was designed to make it conform to the *United States Pharmacopoeia* xii and the *National Formulary* vii.

BLOME, WALTER HENRY, AND CHARLES H. STOCKING

Fundamentals of pharmacy, theoretical and practical. With a chapter on hospital pharmacy, by Edward C. Watts. Philadelphia: Lea & Febiger, 1939. 364 p. illus. 24 cm. \$4.50.

2156

Contents: Theoretical pharmacy. Introduction. The pharmacist's library. Weights and measures. Instruments for determining weight and volume. Specific gravity. Heat. Methods and apparatus employed to secure varying intensities of heat. Filtration and straining. Decantation, siphoning, separation of immiscible liquids. Clarification and decolorization. Precipitation. Commimution. Solutions. Extraction. Crystallization. Practical pharmacy. Introduction. Aquæ, aquæ aromaticæ, aromatic waters. Infusions and decoctions. Syrupi, syrups. Liquors, solutions. Mucilages, honeys, lotions, magmas, jellies, mixtures, gargles, vinegars, wines, glycerites. Emulsions. Elixiria, elixirs. Spiritus, spirits. Collodia, collodions. Preparations made by percolation, or maceration, of by a combination of these processes. Fluidextracta, fluidextracts. Tinctura, tinctures. Extracta, extracts. Oleoresinæ, oleoresins, resinæ, resins. Preparations for external use. Linimenta, liniments. Unguenta, ointments. Cerata, cerates. Pastæ, pastes. Emplastra, plasters. Suppositoria, suppositories. Pulveres, powders. Electuaries, masses, pills. Tabellæ, tablets. Trochisci, pastilli. Troches, pastils. Hypodermic or parenteral medication. Biological products. Animal products, vitamins, protein extracts. Homœopathic pharmacy. Hospital pharmacy. Index.

Note: A text intended to give concise but "essential information necessary to a working knowledge of the theory and practice of the art that has to do with the preparation, standardization, and preservation of drugs and medicines." Historical background is given, as well as an outline of modern, large-scale manufacturing processes.

BRADLEY, THEODORE JAMES

A laboratory manual of qualitative chemical analysis for students of pharmacy. Fifth edition. Philadelphia: Lea & Febiger, 1936. 170 p. illus. 20 cm. \$2.25.

2157

Contents: Introduction. The metals. Groups of metals. Groups 1-7. Analysis of a solution for all groups of the metals. The Acids. Groups of the acids. Groups A-C. Analysis of a solution for the important metals and acids. Qualitative analysis of a solid. Qualitative examination of official inorganic chemicals. Destruction of organic matter. General qualitative tests of the *United States Pharmacopoeia*. Identification tests for chemicals. Reagents and test solutions. Index.

Note: This manual for use in the laboratory assumes a knowledge of descriptive and theoretical inorganic chemistry, and of the technique of laboratory work. The aim is to prepare the student to carry out qualitative tests required of the pharmacist.

BURLAGE, HENRY M., AND OTHERS

Fundamental principles and processes of pharmacy, by Henry M. Burlage, Joseph B. Burt, Charles O. Lee, and L. Wait Rising. New York: McGraw-Hill Book Company, Inc., 1944. 615 p. illus. 20 cm. \$4.50.

2158

Contents: Historical development of the profession of pharmacy, by C. O. Lee. Ethical principles for the practice of the profession of pharmacy, by H. M. Burlage. The pharmaceutical curriculum: Part i, The basic sciences, by H. M. Burlage. Part ii, The professional and applied professional subjects, by H. M. Burlage. The branches of and opportunities in pharmacy, by H. M. Burlage. The essential pharmaceutical literature, by C. O. Lee. Metrology, by J. B. Burt. The physical properties of matter, by J. B. Burt. Theory, generation, and control of heat, by J. B. Burt. Applications of and processes involving heat, by J. B. Burt. Solutions, by L. W. Rising. The colloidal state, by L. W. Rising. Emulsification and emulsions, by C. O. Lee. Extraction, by C. O. Lee. Precipitation, crystallization, and granulation, by L. W. Rising. Mechanical subdivision of drugs, by L. W. Rising. The separation of substances by mechanical means, by H. M. Burlage. The storage and preservation of drugs, by L. W. Rising. The natural products used in pharmacy, by C. O. Lee. Appendixes. Pronouncing and subject index.

Note: A manual or guide to introductory pharmacy, intended to give the student of pharmacy a broad outline of the professional subjects he will study in his academic program. Orientative in character, the work aims to assist the student in a general way to learn the professional and commercial aspects, requirements, and opportunities of pharmacy, and in addition offers the essential principles and techniques necessary for progressing to the more difficult courses in the curriculum. Study questions and collateral reading lists follow each chapter.

CASPARI, CHARLES

A treatise on pharmacy for students and pharmacists. Eighth edition, thoroughly revised by E. F. Kelly. Philadelphia: Lea & Febiger, 1939. 553 p. illus. 24 cm. \$6.50.

2159

Contents: Part i, General pharmacy: Pharmacy and pharmaceutical standards. Weights and measures. Specific gravity, specific volume, viscosity, percentage. Heat and cold. Light and color. Mechanical subdivision of drugs. Solution. Extraction or partial solution. Separation of non-volatile matter. Crystallization. Separation of volatile matter. Sterilization. Classification of the materials used in pharmacy. Part ii, Practical pharmacy: Waters. Solutions or liquors. Decoctions and infusions. Emulsions. Mixtures and magmas. Incompatibility. Syrups. Mucilages, honeys, juices, glycerites and vinegars. Elixirs and wines. Spirits or essences. Tinctures. Fluidextracts and fluidglycerates. Extracts, abstracts and inspissated juices. Oleoresins and resins. Powders. Granular effervescent salts. Pills and masses. Confections and lozenges. Tablets. Capsules, cachets and ampuls. Collodions. Liniments, petroxolins, infused oils, lotions and oleates. Ointments, cerates and allied preparations. Plaster and plaster mulls. Suppositories and sprays. Antitoxins and vaccines, glandular products and digestive ferments. The standardization of drugs, chemicals and preparations as to their strength. Index.

Note: A text for the student and practicing pharmacist, with emphasis on applied pharmacy rather than on pharmaceutical chemistry or physics. This edition was revised in accordance with the eleventh revision of the *U.S. Pharmacopoeia* and the sixth edition of the *National Formulary*.

JENKINS, GLENN LLEWELLYN, AND WALTER H. HARTUNG

615.2
741.2 The chemistry of organic medicinal products. Second edition. New York: John Wiley and Sons, Inc., 1943. 675 p. illus. 22 cm. \$6.50.

2160

Contents: Hydrocarbons. Halogenated hydrocarbons. Hydroxyl derivatives of the hydrocarbons. Ethers and ether peroxides. Carbonyl group. Carboxyl group. Natural mixtures. Amines and amine derivatives. Cyanides and nitro compounds. Sulfur compounds. Compounds of phosphorus, arsenic, and antimony. Metallic derivatives of organic compounds. Heterocycles containing one heteroatom. Heterocycles containing two or more heteroatoms. Stereoisomerism. Some physicochemical properties of medicinal products. General bibliography. Index.

Note: Organizes the large number of organic compounds according to the accepted scheme of chemical classification. The second edition is revised and enlarged, with a new chapter added on physicochemical properties of medicinal products. The book includes the chemistry of methods of preparation, properties and descriptions of the more important compounds of each class. The uses and modes of administration are given so that some idea of the relative importance of the compound may be gained.

JENKINS, GLENN LLEWELLYN, AND ANDREW G. DU MEZ

Quantitative pharmaceutical chemistry, containing theory and practice of quantitative analysis applied to pharmacy. Second edition. New York: McGraw-Hill Book Company, Inc., 1937. 466 p. illus. 21 cm. (McGraw-Hill publications in pharmacy) \$3.50.

2161

Contents (abridged): Part I, General methods used in official pharmaceutical analyses: Remarks and general directions. Gravimetric analysis. Principles of volumetric titrimetric analysis. Acidimetry. Precipitation methods. Oxidation reduction methods. Part II, Physical methods used in official pharmaceutical analyses: Specific gravity and density. Refractometric measurements. Viscosity measurements. Photometric methods of analysis. Electrolytic methods. Part III, Special methods used in official pharmaceutical analyses: Ash and moisture determinations. Extractive and crude fiber content. Constants of fats, fatty oils, waxes, balsams, resins, etc. Alkaloidal assaying. Official type methods. Assay of enzyme-containing substances. Index.

Note: A textbook and laboratory manual presenting the theory and practice of quantitative analysis applied to pharmacy. The book covers all of the quantitative chemical and physico-chemical analytical methods of the *United States Pharmacopoeia* and *National Formulary* and certain special methods widely used in pharmacy. Changes were made in this edition to make the text conform to the *United States Pharmacopoeia* XI and the *National Formulary* VI. Other important changes have been made including new exercises and problems.

JORDAN, CHARLES BERNARD, AND HENRY GEORGE DEKAY

Qualitative analysis for students of pharmacy and medicine. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 178 p. 21 cm. \$2.50.

2161a

Contents: Part I, Introduction. Part II, Metal analysis. Part III, A. Acid analysis. B. Systematic analysis. Index.

Note: A text designed expressly for students in schools of pharmacy. Changes were made in this edition to make the material conform to the *U.S. Pharmacopoeia* XI and the *National Formulary* VI. Other important changes were made.

KREMERS, EDWARD, AND GEORGE URDANG

615.01
K88h History of pharmacy; a guide and a survey. Thirty illustrations. Philadelphia: J. B. Lippincott Company, 1940. 466 p. illus. 23 cm. \$4.50.

2162

Contents: Part I, Early backgrounds in the Old World: Ancient civilization. The Arabs and the European Middle Ages. Part II, The rise of professional pharmacy in Europe: Medical

theories and materia medica. Development in Italy, France, Germany, England. International trends. Part III, Pharmacy in the United States: The period of unorganized development: North American colonies. Revolutionary War. The young republic and pioneer expansion. The period of organized development: The growth of associations. Rise of legislative regulation. Development of education. Establishment of a literature. Economic structure. Part IV, Discoveries, inventions and other contributions to society by pharmacists: The pharmacist and society. Contributions to science and industry. Bibliography. Chronology. Glossary. Index.

Note: This history of pharmacy was prepared with particular reference to the needs of American students. Facts and events have been grouped in accordance with their organic relationships in order to present an integrated picture of the development of all parts of the history of pharmacy, and insofar as space permitted, the background of cultural and political history has been included as an essential framework. The material is organized so that it may be used in conjunction either with a course of lectures or for topical studies. Details not essential to the development of the subjects have been supplied in a glossary, and numerous original references are given here as an aid to research on the part of the students.

MERCK AND COMPANY, INC.

The Merck index; fifth edition. An encyclopedia for the chemist, pharmacist, physician, dentist, and veterinarian. Rahway, N. J.: Merck and Company, Inc., 1940. 1061 p. illus. 23 cm. \$3.00.

2163

Contents: Atomic weights and measures. Chemicals and drugs. Coal-tar colors for foods, drugs and cosmetics. Indicators. Minerals. Chemical clinico-chemical reactions, tests and reagents by authors' names. List of chemical, clinico-chemical reactions, tests and reagents. Culture media. Fixatives. Staining solutions. Metric and United States systems of weights and measures. Thermometric equivalents. Specific gravity comparisons. Antifreeze mixtures. Cooling mixtures. Constant humidity solutions. Boiling temperature of liquids. Solidification temperature of liquids. Refractive index of liquids. Specific gravity of liquids. Specific gravity of solids. Weight of liquids per gallon. Saturated solutions. Percentage solution tables. Antidotes for poisons. Literature references.

Note: An encyclopedic reference tool for physicians, chemists, and pharmacists. Approximately the first 600 pages are occupied by a dictionary of terms for chemical and pharmaceutical substances. Data given in a typical listing include the chemical formula, synonyms, molecular weight, color, odor, specific gravity, boiling point, solubilities, medical uses and dosage, industrial uses. The alphabetically arranged list of reactions, tests, and reagents occupies about 350 pages and is an important and useful feature.

RUDDIMAN, EDELS ALEXANDER, AND ADLEY B. NICHOLS

Incompatibilities in prescriptions, for students in pharmacy and medicine, practicing pharmacists and physicians. Sixth edition, rewritten and reset. New York: John Wiley & Sons, Inc., 1936. 337 p. 22 cm. \$2.75.

2164

Contents: Part I, Incompatibilities. Part II, Prescriptions with criticisms. Tables: Table of solubilities. Index to incompatibilities. Index to prescriptions.

Note: This book is designed to provide a compact source of information regarding possible incompatibilities, together with specific examples. In the preparation of this edition, Part I was thoroughly revised, and in Part II numerous prescriptions were omitted and more recent ones inserted. The first part of the book deals with the theoretical consideration of individual prescription items, arranged alphabetically according to their Latin titles. The reactions of the substance with other substances are discussed, the most important of these being given in large type. Part II consists of a large number of typical prescriptions, illustrating various important and interesting incompatibilities; and following the presentation of the prescriptions themselves is a section devoted to criticisms and analyses of these prescriptions.

SCOVILLE, WILBUR LINCOLN

Scoville's The art of compounding, by Justine L. Powers and George E. Crossen. Seventh edi-

tion. Philadelphia: The Blakiston Company, 1943. 457 p. illus. 24 cm. \$4.00. 2165

Contents (abridged): Introduction. The prescription. Nomenclature and vocabulary. Incompatibility. Therapeutic and physical incompatibilities. Chemical incompatibility. Solutions. Percentage, saturated, gaseous, and stock solutions. Adjusted, colloidal solutions. Liquids containing insoluble substances. Emulsions. Confections, electuaries, jellies. Pills. Tablets. Lozenges, pastils, etc. Powders, species, cachets, capsules, wafers. Suppositories. Bougies, pessaries, politzer plugs. Ointments, cerates, plasters. Miscellaneous external preparations. Biological products. Vitamins. Homeopathic pharmacy. Sterilization and disinfection. Key to state board prescriptions. Index.

Note: This book assembles and classifies the numerous details needed at the prescription counter. It includes empirical material of great value to dispensers. The principles underlying each subject are presented systematically and the student is given the theories as well as the operations of compounding. An abundance of prescriptions and official or standard formulas illustrate the principles discussed and show their range and variety of application. A chapter on adjusted solutions giving new methods for calculating tone factors or freezing points of solutions; new theories of emulsification; chapters on biological products and vitamins; material on incompatibilities; chemical incompatibilities, etc., and a number of new illustrations are included for the first time in this edition.

SPEASE, EDWARD

Pharmaceutical mathematics. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 150 p. illus. 21 cm. \$1.75. 2166

Contents: Tables and prescription forms—apothecaries', troy, and avoirdupois. Tables and prescription forms—metric tables. Tables of equivalents and miscellaneous tables. Percentage. Dosage. Specific gravity of solids. Specific gravity of liquids. Miscellaneous problems in specific gravity. Compounding and dispensing. Manufacturing in quantity. Percentage solutions. Solution by parts. Saturated solutions. Temperature. On the use of tables. Proof degrees. Dilution of solids. Dilution of liquids. Alligation. Percentage composition of chemicals. Chemical-reaction calculations. Commercial discounts. Profit and loss.

Note: An elementary text on the mathematics necessary for the practice of pharmacy. In the new edition the chapters on manufacturing and percentage solutions have been almost completely rewritten. The former covers new, shorter, practical, and accurate methods for manufacturing pharmaceuticals in quantity. The chapter on percentage solutions conforms with the *United States Pharmacopoeia*, recently revised, in which standards for the manufacture of these solutions are set down for the first time. There are 500 problems in the new edition.

STOCKING, CHARLES HOWARD, AND ELMON L. CATALINE

Arithmetic of pharmacy. Seventh edition, revised and enlarged, based on the original text by Alviso B. Stevens. New York: D. Van Nostrand Company, Inc., 1942. 163 p. illus. 21 cm. \$2.00. 2167

Contents: Weights and measures. Specific gravity. Weight and volume. Percentage solutions. Concentration and dilution. Alligation. Commercial calculations. Problems based on the tables of the pharmacopoeia. Thermometers and temperature. Chemical calculations. Tables.

Note: This elementary textbook explains and illustrates the calculations made by pharmacists and nurses in compounding prescriptions for medicines. An exceptionally large number of problems is furnished for solution by the student, providing sufficient practice to assure accurate results. This seventh edition has been fully revised in accordance with the *United States Pharmacopoeia* XI.

WRIGHT, HAROLD NOEL GRANT

Manual of prescription writing and medical jurisprudence. Second edition, revised. Minneapolis 15, Minn.: Burgess Publishing Company, 1944. 117 p. illus. 27 cm. Paper, \$1.50. 2168

Contents (abridged): Section I, Prescription writing: Historical development of the prescription. Drug forms and preparations. The form of the prescription. Systems of weights and measures; Latin abbreviations in prescriptions. Factors modifying the dosage of drugs. Rules for calculating dosages for children. The preparation of quantitative solutions and dilution of stock solutions. Prescriptions for ointments, cerates, and pastes. Prescriptions for lotions, liniments, and sprays. Prescriptions for tablets, capsules, pills, powders, and suppositories. Incompatibilities and errors in prescriptions. Section II, Medical jurisprudence: Legislation governing the prescribing of narcotic, hypnotic, and dangerous drugs. Medico-legal aspects of prescriptions. Medical and expert testimony. Section III, Prescription Latin. The technique of writing prescriptions in Latin. Appendices: Important drugs having widely different Latin and English titles. Important official preparations often called by common names. Latin-English vocabulary; English-Latin vocabulary.

Note: The revised edition of this manual, brought up to date with the *United States Pharmacopoeia*, twelfth edition and first bound supplement, and the *National Formulary*, seventh edition, was made necessary in large part by the many changes in the new editions of these two works. The new edition of the manual also contains a new section on medical jurisprudence.

YEAR BOOK OF GENERAL THERAPEUTICS

The 1944 Year book of general therapeutics. Edited by Oscar W. Betha. Chicago: The Year Book Publishers, Inc., 1944. 447 p. illus. 18 cm. \$3.00. 2168a

Contents: General therapeutic technic: Miscellaneous devices. Tests. Antipathogen therapy: Sulfonamides. Penicillin. Patulin. Penatin. Tyrothricin. Antiseptics and germicides. Lums. Antimalarials. Antisymphilitics. Antimony. Para-aminobenzoic acid. Antirheumatics. Antibodies and antigens. Restoratives: Oxygen. Helium. Hematinics. Transfusions and infusions. Hormones. Vitamins. Function modifiers: Anesthetics. Sedatives, hypnotics, and antispasmodics. Drugs acting especially on the autonomic nervous system. Drugs acting especially on the heart and blood vessels. Anticoagulants. Diuretics. Miscellaneous agents. Thiouracil. Miscellaneous measures. Nonpharmacological therapeutics.

Note: An illustrated annual digest of the current international literature of general therapeutics. Material abstracted from about 330 articles covers the latest ideas and practices described in current clinical and scientific literature of the subject, representing the contents of the medical journals of about a dozen countries. Advances in pharmacology applicable in diagnosis are discussed, but emphasis is placed on treatment, with details of a large number of therapeutic procedures usable in a wide variety of disease conditions. Prescriptions and dosages are included, together with editorial comments in smaller type. Bibliographical references are given in footnotes.

YOUNGKEN, HEBER WILKINSON

A college textbook of pharmaceutical botany; with pharmaceutical and medical applications, especially adapted for the use of students of pharmacy and economic botany and as a reference for pharmacists, chemists and students in structural and systematic botany. Sixth edition. Philadelphia: The Blakiston Company, 1938. 793 p. illus. 23cm. \$4.75. 2169

Contents (abridged): Scope and importance of botany. General characteristics of plants. The living cell. Life history of the male fern. Non-protoplasmic cell contents. Plant tissues. The root. The bud. The stem. The leaf. The inflorescence. The flower. The fruit. The seed. Classification and naming of plants. The thallophytes. The fungi. The lichens. The bryophytes. The pteridophytes. The spermatophytes. The monocotyledons. The dicotyledons. Ecology. Genetics and evolution. Classified list of reference works. Glossary. Index.

Note: Earlier editions of this work have appeared under the title *Pharmaceutical botany*. The sixth edition has been prepared for the needs of students of botany in university schools of pharmacy as well as in the independent pharmaceutical institution. A broad treatment of general botany is presented, with particular stress upon such phases as histology, cell contents, taxonomy, and medical plants. A chapter on cytology given in earlier editions has been deleted and new chapters on the living cell and non-protoplasmic cell contents have been substituted. There is also new material on mitosis, plasmodesma, hormones, vitamins, genetics and evolution, plant tissues, and other subjects, plus

additions to the glossary and list of references. There are over 500 drawings and photographs. The author's *Laboratory manual of botany*, second edition, Philadelphia: The Blakiston Company, 1940, 70 p., \$1.00, is published to coordinate the laboratory directions with the subject matter of the present textbook.

Physical Therapy

AMERICAN MEDICAL ASSOCIATION. COUNCIL ON PHYSICAL THERAPY

Manual of physical therapy, prepared by the Council on Physical Therapy of the American Medical Association, the Sub-committee on Physical Therapy and the Committee on Information of the Division of Medical Sciences of the National Research Council. Chicago, 1942. 35 p. illus. 25 cm. \$0.25. 2170

Contents: Chronic arthritis and rheumatoid conditions. Sprains and dislocations. Traumatic synovitis. Contusions and muscle strains. Volkmann's ischemia (contracture). Bursitis. Nonsuppurative tenosynovitis. Fractures. Peripheral nerve injuries. Stiff joints. Amputations. Circulatory diseases of the extremities. Painful feet. Backache. Traumatic cerebral spastic paralysis. Gonococcal infections resistant to chemotherapy. Dementia paralytica. Cutaneous diseases. Tuberculosis. Psychiatry and neurology.

Note: This manual was prepared in response to a request directed to the Division of Medical Sciences of the National Research Council, to furnish the medical departments of the United States Army and Navy with compact presentations of necessary information to be used by medical officers of the Army and Navy in the emergency.

BARR, DAVID PRESWICK, EDITOR

Modern medical therapy in general practice. Baltimore: The Williams & Wilkins Company, 1940. 3 v. illus. 26 cm. \$35.00. 2171

Contents (abridged): Volume I, General therapy: Psychotherapy, use of drugs, vaccines, sera, dietotherapy, physiotherapy, etc. General diseases: Diseases of metabolism. Allergy. Deficiency diseases. Diseases due to physical agents. To chemical agents. Intoxications. Volume II, Infectious diseases: Bacillary, coccal, virus, rickettsial diseases. Spirochetal, mycotic, protozoan, metazoan infections. Diseases of the nervous system. Of the gastrointestinal tract. Volume III, Diseases of other organs and systems: Respiratory tract. Circulatory system. Hematological dyscrasias. Diseases of the ductless glands. Kidneys and urinary tract. Gynecological conditions. Diseases of the locomotor system. Skin. Ear. Eye.

Note: This encyclopedic work is designed for the use of the general practitioner. The non-surgical treatment of disease is its subject, and the complexity of the subject has necessitated the collaboration of a large number of specialists, who are teachers in medical schools, investigators, or students of the diseases discussed. Emphasis is placed throughout on those conditions in which treatment is effective or preventive measures are significant, and on accepted agents and methods. Although treatment of the disease is the primary consideration, an introduction giving something of its etiology, pathology, and natural history is included in almost every chapter.

BIERMAN, WILLIAM

The medical applications of the short wave current. With a chapter on physical and technical aspects, by Myron M. Schwarzschild. Second edition. Baltimore: The Williams & Wilkins Company, 1942. 344 p. illus. 23 cm. \$5.00. 2172

Contents (abridged): History. Physics of short wave current, by M. M. Schwarzschild. Temperature determinations. Physiologic responses. Specificity. Technique. Fever therapy. Clinical applications to the locomotor, respiratory, circulatory, digestive, genitourinary, and nervous systems; to local infections; to diseases of eye, ear, nose and throat; to miscellaneous conditions. Bibliography. Index.

Note: A general survey of the application of short wave current therapy to the treatment of human disease. After a discussion of the theory of short wave currents and fever therapy, the author presents a review of the results obtained by many workers in this field, together with a brief description of the various techniques employed. The physiologic and therapeutic changes produced by the current are considered to be best explained as the result of its heat-producing effect. The second edition includes references to the literature on the subject up to January, 1942, and new drawings have been added.

BIERMAN, WILLIAM

Physical medicine in general practice. With 310 illustrations. New York: P. B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 1944. 654 p. illus. 24 cm. \$7.50. 2173

Contents: Heat and cold. Hydrotherapy. Climatotherapy and spa therapy. Visible and infra-red radiation. Diathermy. Short wave current. Fever therapy. Surgical diathermy. Galvanic current. Ultraviolet radiation. Massage. Exercise. Occupational therapy. Conduct of treatments. Diseases of the locomotor system. Neurological diseases. Cardiovascular diseases. Diseases of the digestive system. Genito-urinary diseases. Gynecological diseases. Diseases of eye, ear, nose, throat. Respiratory diseases. Dermatological diseases. Appendix. Apparatus. Index.

Note: For physicians, technicians, nurses, physical and occupational therapy aides. Explains in manual form the technics for applying, using, and understanding thermal, mechanical, electrical, and chemical therapeutic measures. Over 300 line drawings are integrated with the text so as to create the clarity of a personal demonstration. There are series showing sequential steps, a group which forms an atlas of neuro-muscular anatomy, and illustrations of some of the author's own, now well-established technics.

COULTER, JOHN STANLEY

Physical therapy. With 15 illustrations. New York: P. B. Hoeber, Inc., 1932. 142 p. illus. 17 cm. (Clio medica; a series of primers on the history of medicine. VIII) \$1.50. 2174

Contents: Physical therapy from ancient times to the Renaissance. Massage and exercise. Water. Electricity. Radiant energy. Bibliography. Indexes.

Note: This volume offers a short history of physical therapy which, as the author states, is intended to show the progress of this healing art, and to indicate the many blind alleys into and out of which its development has led it. Such a record, he trusts, will be of aid in present-day research in the use of physical agents in medicine.

EWALT, JACK RICHARD, AND OTHERS

Fever therapy technique, by Jack R. Ewalt, Ernest H. Parsons, Stafford L. Warren, and Stafford L. Osborne. Foreword by Franklin E. Ebaugh, M.D. New York: P. B. Hoeber, Inc., 1939. 161 p. illus. 19 cm. \$2.50. 2175

Contents: Introduction. Principles of fever therapy. Methods of inducing fever. The radiant energy technique of administering artificial fever. The hypertherm technique. The high frequency currents technique. Malaria. Intravenous typhoid vaccine. Complications and methods of control. Therapeutic dosage. Miscellaneous considerations. Present status of fever therapy. Index.

Note: This manual presents in a brief space the actual technique of administering the various forms of therapeutic fever. Intended as a basic source of information for the nurse technician and physician who administer artificial fever, the work describes the physiological changes which occur during fever and the methods available for the control of these changes. The theory or rationale of pyretotherapy and the results of treatment are intentionally omitted.

HOUSTON, WILLIAM RICHARDSON

The art of treatment. New York: The Macmillan Company, 1936. 744 p. illus. 24 cm. (Macmillan medical monographs, G. R. Minot, editorial advisor) \$5.50. 2176

Contents (abridged): The art of treatment. Patients who are to be treated chiefly by nursing care. Specifics. Conditions in which the chief therapeutic method is psychotherapy or guidance. Diseases which impose a limitation upon life as the condition of treatment. Disorders in which physiological considerations guide treatment. Conditions in which treatment is tentative and experimental. Index.

Note: Based on a series of conferences held with senior medical students and young doctors, this book begins with the point at which treatment comes up for consideration. The author sets forth a therapeutic plan which seeks to employ the remedial agents most effective in helping the sick man. Following general consideration of treatment is a detailed discussion of the treatment of the several diseases. Other considerations discussed are the use of drugs, chemicals, and biological products in treatment, the relation of diagnosis to treatment, the physician's relation to the patient and to the public in the matter of honesty and cost of treatment, the question of the doctor's attitude toward new methods of treatment, and his responsibility in society as health educator.

KRUSEN, FRANK HAMMOND

Light therapy. Forty-two illustrations. Second edition, revised and enlarged. New York: P. B. Hoeber, Inc., 1937. 238 p. illus. 20 cm. \$3.50. 2178

Contents (abridged): Definition and history. Physics. Sources of therapeutic light. Need for more accurate selection of therapeutic rays. Physiology. Technique of application. Forms of administration. Indications for ultraviolet irradiation. Ultraviolet irradiation for diseases of the alimentary tract. Ultraviolet irradiation for diseases of the circulatory system; for diseases of the respiratory system; for diseases of the nervous system; for diseases of the bones, joints, and muscles; for skin diseases; for genitourinary and gynecological diseases; for diseases of the eye, ear, nose and throat and mouth; for systemic and miscellaneous diseases. Indications for luminous heat and infrared irradiation. Contraindications to light therapy. Dangers and limitations of light therapy. Conclusions. References. Index.

Note: Based on the premise that light therapy has a definite but not unlimited field of usefulness in the treatment of various diseases, this manual for the clinician is an attempt to rationalize the method, to point out the fact that our knowledge of light therapy is still incomplete, and to indicate some of its possibilities for future development. The material is drawn largely from the works of other writers but includes case histories in the author's own experience. Physiological and bactericidal effects of light rays are discussed together with the indications, contraindications, dangers, and limitations of the technique. The second edition contains additional material on physiology, new illustrations, and an increased number of bibliographic references.

KRUSEN, FRANK HAMMOND

Physical medicine; the employment of physical agents for diagnosis and therapy. Philadelphia: W. B. Saunders Company, 1941. 846 p. illus. 25 cm. \$10.00. 2179

Contents: History. General application of heat. Local application of heat. Local and general applications of cold. Light therapy. Electrotherapy: Constant (galvanic or direct) current. Static electricity. Faradic current. Interrupted galvanic and sinusoidal currents. Diathermy. Hydrotherapy: General, local. Mechanotherapy: Massage. Exercise. Rest and relaxation. Mechanical devices. Physical therapy in relation to general medicine and surgery. Arthritis. Orthopedic surgery. Relation of physical therapy to management of backache. Teaching of physical medicine. Hospital department of physical therapy. Index.

Note: Written with the purpose of presenting in one volume the modern concepts of physical medicine. It has been prepared for the practicing physician, the medical student, and the physiotherapist. The aim has been to describe the various phases in balanced relationship to one another and to the entire field of medicine. Each physical agent is considered, so far as possible, under these headings: Definition, development, present status, physics, source, device or method of production, physiologic effects, technique of application, indications, contraindications, dangers and limitations, and conclusions. Wherever possible details of construction have been given of many of the less complicated physical devices. References are placed at the ends of chapters and there are 351 illustrations, virtually all of which were taken in the department of physical therapy, the Mayo Clinic.

NEYMANN, CLARENCE ADOLPH

Artificial fever, produced by physical means; its development and application. Springfield, Ill.: Charles C. Thomas, 1938. 294 p. illus. (part col.) 25 cm. \$4.00. 2180

Contents (abridged): The basic theories and principles in the treatment of disease with artificial fever. The history of hyperpyrexia produced by physical agents with especial emphasis on hot baths and balneotherapy—technic of balneothermotherapy. The physiology of hyperpyrexia—a comparison of fever produced by external heat and fever produced by high frequency currents. The physiology of hyperpyrexia. The technic of electropyrrexia. Dementia paralytica. Syphilis of the central nervous system. Primary and secondary syphilis. Multiple sclerosis. Chorea minor. Arthritis. Gonorrhea. Asthma. Other diseases. Dreams and facts. Bibliography. Subject index. Author index.

Note: Based upon the author's experience in treating with artificial fever some 300 patients, and on a review of about 550 articles. It informs as to what diseases can or cannot be treated successfully with hyperpyrexia. It discusses how and how often to administer fever therapy, and the complications experienced in some patients.

OSBORNE, STAFFORD LENNOX, AND HAROLD J. HOLMQUEST

Technic of electrotherapy and its physical and physiological basis. Springfield, Ill.: Charles C. Thomas, 1944. 780 p. illus. (part col.) 23 cm. \$7.50. 2181

Contents (abridged): Part A, Direct current: General considerations. Technic of application. Part B, Muscle stimulation by electric currents: General considerations. Types of apparatus in use. Technic of application. Part C, Radiation: General considerations. Thermogenic radiation. Ultraviolet radiation. Part D, High-frequency currents: Elementary alternating-current circuit theory. Alternating currents of high frequency. Technic of local application. Technic of general application (artificial fever). Physiology of artificial fever by physical means. Appendix. Index.

Note: Intended primarily as a technical manual on the physical and physiological applications of electrotherapy to supplement those texts which emphasize the clinical aspect of the subject. The book is written for those medical students who are well grounded in science and desire a thorough training in the fundamentals of electrotherapy, and also for those whose training in science is limited. For the latter group the advanced theory which is contained in footnotes may be omitted without interfering with the continuity of the text. There is an extensive treatment of the electrical theory of high frequency currents as well as a detailed account of their therapeutic applications. Numerous references are given in footnotes and there are many short bibliographies throughout the text.

RATHBONE, JOSEPHINE LANGWORTHY

Corrective physical education. Third edition, reset. Philadelphia: W. B. Saunders Company, 1944. 275 p. illus. 20 cm. \$3.00. 2182

Contents (abridged): Introduction. Practical review of anatomy and mechanics of joint action. Practical review of physiology of neuromuscular system. Faulty development. Fatigue and conscious relaxation. Orthopedic lesions. Exercise program for reconstructive or physical education. Physical education in rehabilitation. School problem. Glossary. Bibliography. Index.

Note: Presents, for students of physical education and physical therapy, the essential facts of human anatomy and physiology as they pertain to the subject of corrective exercise. It deals primarily with the development of sound bodies through exercise. To each physical handicap, Dr. Rathbone applies the latest measures designed to correct, to strengthen, or to re-train. The steps of each exercise are given in move-for-move descriptions. For the third edition new material was added on muscular activity in general conditioning, and on fatigue in periods of war and reconstruction. There is also a new discussion of causes and treatment of poliomyelitis, including an appraisal of Sister Kenny's ideas; new material on "orthopedic rest" especially as applied in fracture therapy, and the chapter on physical education in rehabilitation has been broadened to cover war casualties as well as the usual peacetime groups.

YEAR BOOK OF PHYSICAL MEDICINE

The 1944 Year book of physical medicine. Edited by Richard Kovács. Chicago: The Year Book Publishers, Inc., 1944. 416 p. illus. 19 cm. (The practical medicine year books) \$3.00.

2183

Contents: Part I, Physical therapeutic methods: General considerations. Thermotherapy. Electrotherapy. Light therapy. Hydrotherapy. Spa therapy. Climatotherapy. Mechanotherapy. Miscellaneous. Occupational therapy. Related subjects. Industrial medicine. Part II, Applied physical therapy: General considerations. Physical therapy in war. Cardiovascular considerations. Peripheral vascular disease. Respiratory conditions. Miscellaneous medical conditions. Arthritis and rheumatic conditions. Traumatic conditions. Orthopedic conditions. Paralysis. Mental conditions. Gynecologic conditions. Syphilis and gonorrhea. Proctologic conditions. Dermatologic conditions. Ophthalmologic conditions. Rhinolaryngologic conditions. Indexes.

Note: An annual publication which classifies and abstracts the current literature of this subject. Each chapter is made up of a number of abstracts of considerable length (300-500 words). A footnote reference to the original article is given in all cases. Frequently an abstract is accompanied by a short note by the editor. Full subject and author indexes are provided.

Other Therapies

ANDREWS, ALBERT HENRY

Manual of oxygen therapy techniques, including carbon dioxide, helium and water vapor. Chicago: Year Book Publishers, Inc., 1943. 191 p. illus. 18 cm. \$1.75, cloth bound; \$1.00, paper bound nurses' and students' edition. 2184

Contents: Physiology of respiration and rationale of inhalation therapy. Cases, cylinders and regulators. Handling of oxygen equipment. Safety precautions. Charting. Emergency oxygen. Comparison of tent, catheter and mask methods of administration. Oxygen tent. Open top oxygen tent. Incubators for oxygen therapy. Oxygen analysis. Oropharyngeal insufflation or catheter and oxygen therapy. Nasopharyngeal oxygen therapy. Nasal cannula. B.L.B. mask. Meter, O.E.M. or Barach mask. Puritan mask. O.E.M. face tent. Lombard inhaler and face masks. Mask administration for children. Oxygen therapy in the home. Improvised oxygen therapy. Carbon dioxide therapy. Helium-oxygen therapy. Water vapor therapy. Positive pressure therapy. Administration of vaporized solutions. Oxygen therapy department or service. Subject index.

Note: A technical handbook for physicians and surgeons, nurses and students, on correct administration of therapeutic (non-anesthetic) gases, in hospitals and homes and under emergency conditions in the field. Covers (1) oxygen therapy by tent, catheter, nasal cannula, and various types of masks and face tents; (2) the principal methods of carbon dioxide therapy; (3) mask administration of helium; (4) water vapor therapy via mask, tent and high humidity chamber. Medical indications for gas therapy are not given, the text being limited to approved techniques of administration. Installation and maintenance of an oxygen therapy department of a hospital is described, and all details of care of equipment in hospital and home are included.

BARACH, ALVAN LEROY

Principles and practices of inhalational therapy. 59 illustrations. Philadelphia: J. B. Lippincott Company, 1944. 315 p. illus. 23 cm. \$4.00. 2185

Contents: Historical and physiologic background. Acute altitude sickness, acute anoxia. Pneumonia. Edema of the lungs. Congestive heart failure. Coronary thrombosis and coronary sclerosis. Shock. Pulmonary infarction. Massive collapse of the lung. Postoperative atelectasis. Bronchial asthma. Obstructive lesions in the larynx, trachea, and bronchi. Pulmonary emphysema. Accidental asphyxia. Asphyxia of the newborn. Hemorrhage. Peripheral arteriosclerosis. Migraine, seasickness, gas gangrene, and tetanus. Anesthesia and anoxia. Aero-embolism. War gas poisoning and lung irritants. Postencephalographic headache. Anoxia and brain lesions following fever therapy. Head injuries. Paralysis of the respiratory musculature. Cerebral

embolism and thrombosis. Chronic pulmonary tuberculosis. Blast injuries of the lungs. Aerial transportation of patients with miscellaneous diseases. Oxygen poisoning. Submarine medicine and caisson disease. Hiccough. Some considerations concerning research in respiratory function and inhalational therapy. Methods of inhalational therapy. Care of equipment. Respirators. Oxygen analyzers. Index.

Note: A handbook for physicians who wish to understand the physiologic bases of disturbances in respiratory function as well as the techniques of inhalational therapy. Methods of therapy are presented in considerable detail. There are bibliographies at the end of most of the chapters.

BIEGELEISEN, HYMAN I.

Primer of sclerotherapy, injection treatment. New York: Froben Press, 1944. 75 p. illus. 22 cm. \$2.00. 2185a

Contents: Introduction. Varicose veins. Phlebitis or inflamed veins. Ulcers or open sores of the leg. Eczema of the legs. Enlargement of the legs or swollen legs. Capillary veins or spider veins. Hernia or rupture (inguinal type). Femoral hernia. Abdominal hernia or rupture of the belly wall. Umbilical hernia or rupture of the navel (belly-button). Recurrent hernia or ruptures that come back after unsuccessful operation. Hernia that cannot be operated on due to other diseases of the body. Hernia in children. Hydrocele or water in the bag (scrotum). Varicocele or enlarged veins in the scrotum. Hemorrhoids or piles. Fissure or cracks around the anus. Pilonidal cyst above the rectum. Bursitis or water on the knee (housemaid's knee). Ganglion; a swelling on a joint. Angiomas or birth marks. Limitations of sclerotherapy. Table of solutions.

Note: A simplified statement of the author's studies published in advance of the author's projected textbook on this subject. Injection cures because a scar is formed, as in surgery, except that the scar is invisible because it is under the skin. Photographs illustrate most of the conditions listed in the contents. A bibliography is included.

KILDUFFE, ROBERT ANTHONY, AND MICHAEL DEBAKEY

The blood bank and the technique and therapeutics of transfusions. With two hundred fourteen illustrations and one color plate. St. Louis: The C. V. Mosby Company, 1942. 558 p. illus. (part col.) 25 cm. \$7.50. 2186

Contents (abridged): History. Rationale, indications, and contraindications. Military aspects. Special types. Technique of blood typing and compatibility tests. Anomalous blood typing reactions. The "universal donor" and the "universal recipient." The blood bank. Changes in stored blood. Biochemical changes. Operation of a blood bank. Plasma transfusion. Preparation and preservation of citrated plasma. Of concentrated and dried plasma. Methods and technique. Complications. Index.

Note: The authors have endeavored to present this subject in as comprehensive a manner as possible, drawing freely upon the experience of others, but the final evaluations and opinions expressed, particularly concerning indications, technical considerations, and complications, are their own. Their experience covers some 7000 transfusions. The bibliography is extensive. Particularly in the matter of methods and technique, a subject of growing significance in military practice, an effort was made to present a sufficient variety based on publications appearing through July, 1941. The book is intended for physicians, surgeons, and all others having to do with blood banks and transfusions.

LAURENS, HENRY

The physiological effects of radiant energy. New York: Reinhold Publishing Corporation, 1933. 610 p. illus. 23 cm. (American Chemical Society monograph series. No. 62) \$6.00. 2186a

Contents: Introduction. Physics of radiant energy. The effects on the skin. The effects on wounds and on some skin diseases. The effects on the eye. The effects on the circulatory system. The effects on the blood. The effects on metabolism. The effects on body temperature, respiration and blood reaction. Photodynamic or optical sensitization. The effects on tuberculosis and some other diseases. The effects on bacteria, and other microorganisms, toxins, antitoxins, proteins, ferments, etc. Mode of action of radiant energy on physiological and pathological processes. Bibliography. Author and subject indexes.

Note: This volume is intended as a source book and not as a definitive work in the field. A review is made of results reported by experimenters on the physiological effects of radiant energy (infra-red, luminous, and ultra-violet) on the human and other animal organisms. Effects on metabolism receive the most detailed treatment. Seventeen pages of references are cited.

McPHEETERS, HERMAN OSCAR, AND JAMES KERR ANDERSON

Injection treatment of varicose veins and hemorrhoids. Illustrated with 86 half-tones and line engravings and one color plate. Second revised edition. Philadelphia: F. A. Davis Company, 1942. 323 p. illus. (part col.) 24 cm. \$4.50.

2186b

Contents (abridged): Anatomy. Embryology with particular reference to valve development. Etiology: A theoretical and clinical evaluation of factors. Differential diagnosis of varicose veins and associated conditions. Direction of venous flow in varicose veins. The Trendelenburg test. X-ray demonstration and blood-pressure readings in varicose veins. Pathology seen and associated with varices. Varicose ulcer. Treatment: a general discussion. Treatment by operation. Treatment by injection: history. Equipment needed. Technic of the injection treatment. Results following the injection treatment of varices. Complications. Treatment of varicose ulcer. Injection treatment of hemorrhoids: Embryology and anatomy. Etiology. Gross pathology. Symptoms. Principles of injection treatment. Technic of injection. Advantages and disadvantages. Complications. Contraindications. Typical case reports. Conclusions. Bibliography. Index.

Note: The similar pathology present in varicose veins of the extremities and in varicosities of the hemorrhoidal plexuses is recognized in this monograph for practitioners and specialists, and the value and technique of the injection treatment outlined in detail in each case. The bibliography lists 245 works on varicose veins and 37 on hemorrhoids.

MUDD, STUART, AND WILLIAM THALHIMER, EDITORS

Blood substitutes and blood transfusion. Springfield, Ill.: Charles C. Thomas, 1942. 407 p. illus. 24 cm. \$5.00.

2187

Contents (abridged): The etiology and mechanisms of secondary shock. Methods of preservation of plasma and serum by desiccation and by freezing. Hemoglobin, serum albumin and casein digest as blood substitutes. Blood substitutes in the world emergency. Whole blood: storage, transportation, administration; isoagglutinins and blood group specific substances. Therapeutic experiences with serum and plasma. Summary: recapitulation and outlook. Appendix. Index.

Note: Seventy American investigators in clinical and scientific medicine present descriptions of the best current theory and practice on many pertinent matters concerned with the management of shock, plasma, serums, hemoglobin, serum albumin, protein and casein digests, and problems involved in procuring blood substitutes for the armed forces. Technical procedures and organization for the storage, transportation and administration of whole blood and relevant problems are included. Therapeutic experiences are described. The book includes papers presented at the 1941 meeting of the American Human Serum Association at Cleveland.

RICE, CARL OLIVER

Injection treatment of hernia. With the assistance and cooperation of Hamlin Mattson. 83 illustrations. Philadelphia: F. A. Davis Company, 1937. 266 p. illus. 23 cm. \$4.50.

2187a

Contents (abridged): Historical. Classification of hernia. The anatomy of the abdominal wall in relation to the various types of hernia. The etiology of hernia. Diagnosis and differential features of hernia. The truss. Treatment of hernia by the injection method. Complications and sequelae. Results associated with the injection treatment of hernia. Histopathology of the injection treatment of hernia. Medico-legal aspects of hernia. Summary. Bibliography. Index.

Note: A monograph on a relatively simple but long-neglected method of treating certain types of hernia, especially in patients that are poor surgical risks. It relates directly to work done from 1927 onwards in the hernia clinic of the Minneapolis

General Hospital. The avowed purpose of the work is to bring back into good repute a method that for many years has been little used in spite of its known efficacy.

RIDDLE, PENN

Injection treatment of hernia, hydrocele, ganglion, hemorrhoids, prostate gland, angioma, varicocele, varicose veins, bursae, and joints. With 153 illustrations. Philadelphia: W. B. Saunders Company, 1940. 290 p. illus. 25 cm. \$5.50.

2188

Contents: Hernia. History. Anatomy of abdominal wall. Classification, etiology and structure. Diagnosis. Trusses. Sclerosing. Complications. Results. Bibliography. Varicose veins. History. Anatomy. Classification, pathology and etiology. Diagnosis. Sclerosing. The varicose theory of anal fissure, fistula, and pruritus. Bibliography. Injection treatment of hydrocele, varicocele, ganglion, bursae, joints, angioma and prostate gland. Bibliography. Index.

Note: The purpose of this book is to present all those conditions to which the injection method of treatment may properly be applied. It is particularly adapted to the office use of physicians and surgeons who include treatment of these disorders as a part of their regular practice. It is based on clinical observation of a large number of cases—from diagnosis on through the treatments and study of end-results. Because sclerosing therapy is not always the method of choice, the author has devoted considerable space to indications and contraindications in order to prevent indiscriminate use. In each instance, the full technique of treatment is given, including solutions, dosage, site of injection, etc. The 153 original illustrations are an important part of the book, since most of them are step-by-step portrayals of technique. The necessity of a sound grasp of anatomic and physiologic principles is stressed and each treatment is prefaced by the data necessary to insure its proper and safe use.

YEOMANS, FRANK CLARK, EDITOR

Sclerosing therapy; the injection treatment of hernia, hydrocele, varicose veins and hemorrhoids. With 185 illustrations on 117 figures. Baltimore: The Williams and Wilkins Company, 1939. 337 p. illus. 26 cm. \$3.50.

2189

Contents: Part I, Injection treatment of hernia, by Arthur F. Bratrud: Introduction. Historical. Inguinal hernia. Trusses. Experimental and histopathological. Selection of cases. Technic of injection of inguinal hernia. Femoral hernia. Umbilical and epigastric hernia. Results. Legal aspects. References. Part II, Injection treatment of hydrocele, by George F. Hoch. References. Part III, Injection treatment of varicose veins, by Harold J. Shelley: Introduction. History. Anatomy of the venous system of the legs. Definition. Etiology. Pathology. Symptomatology of varicose veins. Diagnosis and differential diagnosis of varicose veins and ulcers. Histological basis for injection treatment of varicose veins. Indications for and contraindications to the injection treatment. Solutions for use in the injection treatment. Equipment. Treatment. Complications of untreated varicose veins and their treatment. Complications of the injection treatment of varicose veins. Failures of the injection treatment. References. Part IV, Injection treatment of hemorrhoids, by Frank C. Yeomans. References. Index.

Note: In this work, the experience of each contributor in his assigned subject is used as a basis of evaluating the merits, indications, and limitations of treatment, and for presenting the definite technique, with emphasis on the solutions employed and the results obtained in practice. There are numerous original illustrations, and references are given at the end of each section.

Radiology

DYKE, CORNELIUS GYSBERT, AND LEO M. DAVIDOFF

Roentgen treatment of diseases of the nervous system. With 12 engravings, 7 charts and 16 graphs. Philadelphia: Lea & Febiger, 1942. 198 p. illus. 24 cm. \$3.25.

2190

Contents: Introduction. The effect of radiation on normal nervous tissue—experimental evidence. The effect of radiation on pathologic processes affecting the nervous system—brain tumors—infectious and inflammatory diseases of the nervous system—spinal cord tumors—miscellaneous conditions of the nervous system. Bibliography.

Note: This book presents a summary of the literature of the subject in English; and, in addition, studies of over 200 selected cases of which 80 are described in detail as to treatment, clinical course, and outcome. Of interest to general practitioners interested in diseases of the nervous system and to specialists in radiotherapy.

FERGUSON, ALBERT BARNETT

Roentgen diagnosis of the extremities and spine, with five hundred and fifty-four Roentgen-ray studies and eight clinical illustrations. First edition, enlarged. New York: P. B. Hoeber, Inc., 1941. 462 p. illus. 21 cm. (Annals of roentgenology. Vol. xvii) \$12.00. 2191

Contents: Introduction. Calcareous matter. Reticular bone. Diaphyseal fractures and infections. Diaphyseal malignancy. Metaphyseal bone. Inherent disturbances of bone formation. Cartilage lines, fracture lines and anomalies. Fractures. Healing of fractures. Epiphyses and small bone masses. Non-osseous tissues. Arthritides. Tuberculous arthritis. Non-tuberculous infectious arthritis. The spine. Index of case histories. General index.

Note: The author correlates roentgenographic and clinical findings, and shows X-ray appearances from the viewpoint of general pathologic change, his descriptions being clinical and diagnostic rather than anatomic. The graphic presentation shows how to diagnose bone conditions directly from the roentgenogram, instead of by textbook descriptions. This volume tells, in text and pictures, how to recognize the characteristic traits in order to distinguish the lesion which is present from those that might be present, and how to list these traits so as to draw a logical diagnostic conclusion. It is intended as a practical guide for surgeon, diagnostician, and roentgenologist, and contains 554 X-ray studies, selected from the author's case-files. This "enlarged first edition" contains corrections and a new chapter on the spine.

GENERAL ELECTRIC X-RAY CORPORATION, CHICAGO. TECHNICAL SERVICE DEPARTMENT

Medical radiographic technic, prepared by the Technical Service Department of General Electric X-ray Corporation, under the editorial supervision of Glenn W. Files, director, in association with these contributors: John R. Armstrong, George A. Ashworth, Charles H. Buckingham [and others]. Springfield, Ill.: Charles C. Thomas, 1943. 365 p. illus. 26 cm. \$6.00. 2192

Contents: Fundamental electrical concepts. Electron theory and the X-ray tube. Basic X-ray generating circuits. X-ray apparatus. Radiographic calibration. Factors affecting the quality of the radiography. The processing room. Stereoscopy. Planigraphy. Foreign-body localization. Fluoroscopy. Soft-tissue radiography. Anatomy. Positioning and technic. Dental technic. Photograph of the fluorescent screen image. Index.

Note: This book will interest radiologists and technicians. In it the fundamentals of electricity and physics are explained in simple terms, aided by the liberal use of illustrations. Factors affecting the quality of radiographs are considered in detail, while the following subjects are treated briefly: stereoscopy, planigraphy, foreign-body localization, fluoroscopy, soft-tissue radiography, and photofluorography. The atlas on positioning and technique is of especial value for technicians. A photograph of each standard position is shown on a separate page, with views of the patient from both the top and side, obtained simultaneously by means of a mirror. On the same page appear a reproduction of the radiograph and a description of the position. Full-page anatomical plates are also provided. The book contains 381 original figures and has an excellent cross index.

GLASSER, OTTO, AND OTHERS

Physical foundations of radiology, by Otto Glasser, Edith H. Quimby, Lauriston S. Taylor

and J. L. Weatherwax. New York: P. B. Hoeber, Inc., Medical Book Dept. of Harper & Brothers, 1944. 426 p. illus. 19 cm. \$5.00. 2192a

Contents: Historical milestones in radiology. Fundamental concepts of matter. Nature of corpuscular and electromagnetic wave radiations. Fundamentals of electricity and magnetism. High voltage generators. Roentgen ray tubes. Production and nature of X-rays. Interaction of radiation and matter. Physical principles of X-ray diagnostic procedures. Measurement of X-ray quantity. Measurement of X-ray quality. Tissue dosage in X-ray therapy. Radioactivity. Measurement of gamma ray quantity. Neutrons and artificial radioactivity. Dosage in gamma-ray therapy. Dependence of the biologic reaction on quality and intensity of radiation. Roentgen ray and radium therapy records. Roentgen ray and radium protection. Appendix: Roentgen ray depth dose tables. Indexes.

Note: This book represents a pooling of the experience of the four authors in the teaching of this subject. It was written with a view to the needs of two groups with whom they had worked, physicians preparing to enter the field of radiology, and those already in the specialty and desirous of review or of further information. The treatment is elementary and non-mathematical. General bibliographies and special references are given as a means of supplementing the subject matter, if the text is used in medical schools. The place of radiologic physics as a part of the whole subject of modern physics is stressed throughout the book.

GOLDEN, ROSS, EDITOR

Diagnostic roentgenology. New York: Thomas Nelson and Sons, 1941. 2 v. illus. 26 cm. \$30.00. 2193

Contents (abridged): Volume I: Diagnosis of diseases of the skull and intracranial contents, by Cornelius G. Dyke. Examinations of the paranasal sinuses and the mastoids, by C. W. Grier. Radiology of the chest, by Coleman B. Rabin. Clinical roentgenology of the cardiovascular system, by Hugo Roesler. Examination of the digestive tract, by Ross Golden. Diagnosis of diseases of bones, by Paul C. Hodges, D. B. Phemister, and Alexander Brunschwig. Volume II: Diagnosis of spinal cord tumors, by Cornelius G. Dyke. Diagnosis of diseases of the urinary tract, by Leopold Jaches and Marcy L. Sussman. Uterotubography, by Samuel A. Robins and Albert A. Shapira. The use of the Roentgen ray in obstetrics, by Howard C. Moloy and Paul C. Swenson. Diagnosis of fractures and dislocations, by L. Henry Garland. Dental roentgenology, by Leroy M. Ennis. The soft tissues of the air and food passages of the neck, by Barton R. Young. The abdomen, by Ross Golden. Roentgen diagnosis in infants and children, by John Caffey. Soft-tissue roentgenography, by James R. Lingley and William J. Elliott. Development and applications of body section radiography, by Sherwood Moore. Angiography, by John D. Camp and Edgar V. Allen. Index.

Note: A comprehensive summary of the theory and practice of Roentgen examination in both normal and pathologic conditions, intended as a guide and reference work for the radiologist, pathologist, surgeon, and general practitioner. The editorial policy of the work is to lay stress on the importance of training and experience, upon the necessity for continuous study of groups of cases and the correlation of the Roentgen manifestations of disease with the pathology disclosed at the operation or necropsy. There are extensive bibliographies at the end of most of the chapters plus 1,627 reproductions of roentgenograms and clinical photographs. The loose-leaf feature permits insertion of periodic revisions issued by the publisher and sold at approximately two cents per page.

HOLMES, GEORGE WINSLOW, AND HOWARD E. RUGGLES

Roentgen interpretation. Sixth edition, thoroughly revised. Illustrated with 246 engravings. Philadelphia: Lea & Febiger, 1941. 364 p. illus. 24 cm. \$5.00. 2194

Contents (abridged): Introduction. Confusing shadows and artefacts. Anatomical variations and development. Fractures and dislocations. Bone pathology. The skull. The spine. The joints, tendons and bursae. The chest. The gastro-intestinal tract. The genito-urinary tract. Fluoroscopic technic.

Note: In the sixth edition of this standard work the subject matter has been reviewed and brought up to date, recent important advances in Roentgen diagnosis have been included, and new illustrations have been added. No attempt has been made to change the general character of the book or to cover the entire

subject completely. The authors' original intention, to present the essentials in a comprehensive form, has been adhered to. The references given with each chapter have been selected for the most part from among those which are written in the English language. The volume is thus a useful one for the student as well as for the practicing physician and the specialist.

JACKSON, CHEVALIER, AND CHEVALIER L. JACKSON

Foreign body in air and food passages roentgenologically considered; with two hundred and thirty-six Roentgen-ray studies, and ten clinical illustrations. New York: P. B. Hoeber, Inc., 1934. 265 p. illus. 27 cm. (Annals of roentgenology, edited by J. T. Case. Vol. 16) \$12.00.

2195

Contents: Axioms with illustrative roentgenograms. Differential diagnosis of foreign bodies in the air and food passages. Diagnosis of radiopaque foreign body in the air passages. Diagnosis of radiopaque foreign bodies in the bronchi. Foreign bodies in the stomach and intestines. Roentgenologic requirements of the bronchoscopist. Collateral data useful for the roentgenologist. Fluoroscopic endoscopy. References. Index.

Note: The subject covered by this monograph is treated from the viewpoint of how the roentgenologist can be of help to the endoscopist in the diagnosis of foreign bodies which, if undiscovered, may sooner or later prove fatal. The statements made are based on a clinical experience of more than 3,000 cases of foreign bodies in the air and food passages. Clinical data and facts rather than theories are presented, and each case is accompanied by one or more roentgenograms showing the location of the foreign body. The bibliography is largely a list of the authors' previous publications in the same field.

KAPLAN, IRA I., AND SIDNEY RUBENFELD

A topographic atlas for X-ray therapy. Chicago: Year Book Publishers, Inc., 1939. 120 p. illus. 28 cm. \$4.00.

2196

Contents: The skeleton. The brain. The pituitary gland. The paranasal sinuses. The tonsils and larynx. The tongue. The thymus in children. The thyroid and the parathyroid glands. The lymphatics of the head and neck. The lungs and pleural reflections. The deep lymphatic nodes of the thorax. The breast. The lymphatics of the breast. The stomach and the esophagus. The stomach: pylorus. The stomach: fundus. The lymphatics of the esophagus and stomach. The pancreas. The liver and gall-bladder. The large intestine. The rectum. The lymphatics of the large intestine, rectum and anus. The spleen. The kidneys and adrenals. The lymphatics of the kidneys, ureters, adrenals, and testes. The bladder and prostate. The lymphatics of the bladder, prostate and urethra. The female genital organs. The lymphatics of the female genitalia. The lymphatics of the vulva and anus. The nerve plexuses.

Note: A guide to the correct positioning for X-ray therapy of any internal organ. Fifty-five full-page plates, each one showing: 1, visible anatomic landmarks; 2, palpable internal landmarks; 3, the internal part or parts to be irradiated; 4, the placement of the treatment-cone with respect to those landmarks so as to direct dosage to the organ and tissues to be treated and avoid danger to surrounding and intervening structures. In outline form opposite each plate is a description of the anatomic landmarks, position of the cone and its direction. The techniques illustrated represent current practice in the Radiation Therapy Department of Bellevue Hospital, New York, of which the senior author is director. The atlas is intended for physicians and technicians, and for students.

KELLY, JAMES FRANCIS, AND D. ARNOLD DOWELL

Roentgen treatment of infections. Chicago, Ill.: The Year Book Publishers, Inc., 1942. 432 p. illus. 23 cm. \$6.00.

2197

Contents (abridged): Part I, X-ray physics and fundamentals. Part II, General considerations. Clinical features of X-ray therapy of infections. Evolution of the mobile therapy apparatus. Advantages of X-rays for military use. Bibliography. Part III, Gas bacillus infection. History and classification. Diagnosis. Mortality. History of treatment with X-rays. Surgical treatment. Use of

serum and X-rays. X-ray prophylaxis. X-ray technic for treatment of gas bacillus infection. Bibliography. Part IV, Abdominal infections. Peritonitis. Acute conditions of the abdomen. Bibliography. Part V, Miscellaneous infections. Superficial and other infections (erysipelas, boils and carbuncles). Infections of upper half of face. Infections in athletes. Human bite. Ludwig's angina. Recent extractions. Fractured jaw. Superficial ocular infections. Impetigo. Acne. Dermatomyces. Plantar warts. Granulomas. Lymphogranuloma venereum. Rheumatoid arthritis. Fibrositis and neuritis. Bursitis. Enlarged glands. Diphtheria carriers. Sinusitis. Meningitis. Active rheumatic heart disease. Parotitis and mastoiditis. Pneumonia. Bibliography. Part VI, Contraindications to X-ray therapy. Review of the literature.

Note: To the textbooks on Roentgen therapy of malignancies and of skin diseases, this work adds data on Roentgen therapy of inflammatory conditions. It is confined to that type of treatment applicable with the ordinary low-voltage diagnostic apparatus. Based on two decades of clinical experience and investigation on the part of the senior author, the book is largely a presentation of his work on treatment of gas gangrene; but the management of 26 other inflammatory conditions is also presented. Emphasis is placed on treatment of sulfonamide-fast pneumonia. The authors originated the mobile X-ray therapy unit, and describe its evolution and its bearing on military and industrial practice. One hundred and four variously treated cases are reported, with evidence of the diagnoses and the record of results. A succinct review of the literature on Roentgen treatment of infections is presented in an appendix.

LOWER, WILLIAM EDGAR, AND BERNARD H. NICHOLS

Roentgenographic studies of the urinary system. With 812 illustrations. St. Louis: The C. V. Mosby Company, 1933. 812 p. illus. 26 cm. \$6.00.

2197a

Contents: Introduction. Important points. Examination of male urethra. Examination of bladder. Examination of ureter. Examination of kidneys. Intravenous urography. Indications for examination of upper right quadrant. Author index. Subject index.

Note: This work consists chiefly of descriptions of a large series of cases, each with text material on the left-hand page, facing roentgenogram of the patient on the right-hand page. In each case, the roentgenographic findings are described, followed in order by the clinical history, the physical findings, and the urinary findings. The surgical procedure, if any, is described, then the pathological findings are stated, followed by the diagnosis. The diagnosis is placed last deliberately, for the benefit of the reader chiefly interested in the roentgenogram.

MCNEILL, CLYDE

2nd, 1946

Roentgen technique. Second edition. Springfield, Ill.: Charles C. Thomas, 1941. 329 p. illus. 23 cm. \$5.00.

2197b

Contents: Part I, Head. Part II, Extremities. Part III, Trunk. Part IV, Exposure technique. Index.

Note: A handbook of X-ray positioning intended for the use of surgeons and X-ray technicians. Positions are illustrated with a reproduction of a photograph, a diagram of the part of the body being photographed, and a brief textual statement giving such details as size of film, distance, type of screen, type of tube, and concise, practical directions for placing the patient and directing the ray. The book contains nothing on the theory of X-ray apparatus and relatively little on its manipulation, although there is a useful section on exposure technique. Many of the changes in the second edition are minor, but there is new material on fluorography, fluoroscopy, cholangiography, laminagraphy, and pineal localization.

PANCOAST, HENRY KHUNRATH, AND OTHERS

The head and neck in Roentgen diagnosis, by Henry K. Pancoast, Eugene P. Pendergrass, and J. Parsons Schaeffer. Springfield, Ill.: Charles C. Thomas, 1940. 976 p. illus. (part col.) 26 cm. \$6.50.

2198

Contents (abridged): The skull: external aspect, internal aspect of the cranium, occiput, base, skull in the infant and child, landmarks and points on the surface, meninges and related structures. Fractures and dislocations. Diseases of bone: osteomyelitis

(non-specific), tuberculosis, syphilis, actinomycosis, rickets, Padget's disease, hyper- and hypothyroidism, hyper- and hypopituitarism, spondylitis deformans. Tumors of the scalp, skull and cervical spine. The teeth and jaws: periapical dental lesions; destructive changes of the teeth, constructive changes in the dentine and dental pulp. The nose, lacrimal passageways and paranasal sinuses: malignant tumors of the maxillary sinus, ethmoidal cells. The temporal bone and affections of the mastoid and petrosa: structural and relational considerations, classification of mastoid disease. Intraorbital and intraocular foreign bodies. Intracranial tumors. Cerebral pneumography. The neck: divisions, variations and anomalies, glands and other structures and their affections; myelography. References. Index.

Note: This book is designed to aid in the correlation and integration of the basic and technical aspects of radiology with the apposite facts in developmental and adult morphology, physiology, pathology, and observations in clinical medicine and surgery and the special branches. For each structure there is a consideration of the normal gross anatomy and its variations, the normal Roentgen anatomy, the technique of Roentgen examination, and the Roentgen diagnosis of disease processes. The numerous illustrations, negative prints of roentgenograms, photographs of patients and of basic technical procedures, form an important feature of the book. This volume is intended especially for roentgenologists and students of this specialty.

POHLE, ERNST ALBERT, EDITOR

Clinical Roentgen therapy. Foreword by George W. Holmes. Illustrated with 199 engravings and a colored plate. Philadelphia: Lea & Febiger, 1938. 819 p. illus. (part col.) 24 cm. \$10.00. 2199

Contents: Roentgen therapy in diseases of the blood and blood-forming organs, by O. O. Meyer. Diseases of the circulatory system, by R. Golden and O. L. Henderson. Roentgen therapy in diseases of the respiratory system and of the breast, by G. E. Richards. Roentgen therapy in diseases of the gastro-intestinal tract including its glands, by H. Holfelder. Radiation therapy in diseases of the female genital organs, by C. L. Martin. Roentgen therapy in diseases of the urinary tract and the male genital organs, by C. A. Waters. Roentgen therapy in diseases of the nervous system, by A. Zimmermann and J. A. Chavany. Roentgen therapy in diseases of the eye and ear, by A. W. Desjardins. Roentgen therapy in diseases of the muscles, tendons, bones and joints, by O. Jüngling. Roentgen therapy in diseases of the glands of internal secretion, by H. Langer. Roentgen therapy in diseases of the skin, by J. J. Eller. Roentgen ray reactions and injuries, by G. M. MacKee. The medico-legal aspects of injuries following the application of Roentgen rays, by M. J. Hubeny.

Note: This work represents the practical applications of the theoretical principles discussed in the editor's companion volume, *Theoretical principles of Roentgen therapy*. It offers the radiologist a guide in the treatment of conditions amenable to irradiation. Controversial discussions have been eliminated and the methods described are those which the contributors have found valuable and safe in their experience.

POHLE, ERNST ALBERT, EDITOR

Theoretical principles of Roentgen therapy. Foreword by W. Edward Chamberlain. Illustrated with 132 engravings. Philadelphia: Lea & Febiger, 1938. 271 p. illus. 24 cm. \$4.50. 2200

Contents: Physics of Roentgen rays, by K. W. Stenström. Roentgen therapy apparatus, by R. R. Newell. Dosimetry, by L. S. Taylor and E. A. Pohle. Radiobiology and radiopathology, by F. C. Wood. Protection from Roentgen-rays, by L. S. Taylor.

Note: This book has been written to serve two groups: the radiologist who must have a thorough understanding of the theoretical principles underlying Roentgen therapy and the research worker who is less interested in the clinical application of Roentgen rays than in other phases of the subject. It deals exclusively with the theoretical principles.

RHINEHART, DARMON ARTELLE

Roentgenographic technique; a manual for physicians, students and technicians. Third edition, thoroughly revised, illustrated with 201 engravings. Philadelphia: Lea & Febiger, 1943. 471 p. illus. 24 cm. \$5.50. 2201

Contents: Electricity and electric currents. Roentgen-ray machines. Roentgen-rays or X-rays. Dark-room equipment and technique. Introductory experiments. A basic roentgenographic technique. Advanced experiments. Roentgenograms. Combinations of exposure factors. Roentgenographic technique with the unit type Roentgen-ray machines. Miscellaneous instructions. The upper extremity. The lower extremity. The vertebral column, thorax and pelvis. The head. The teeth. The thoracic viscera. The abdomen and the gastro-intestinal tract. The urinary tract. Miscellaneous examinations.

Note: Designed for X-ray technicians, medical students in classes of roentgenology, and physicians who do roentgenographic work. In this third edition new material has been added, and thirty-one new figures have been provided. Emphasis is placed on the method of developing a Roentgen technique by experimental exposures and by charting the results of actual diagnostic exposures.

RICLER, LEO GEORGE

Outline of Roentgen diagnosis; an orientation in the basic principles of diagnosis by the Roentgen method. 254 illustrations shown in 227 figures, presented in drawings and reproductions of roentgenograms. Figures 6 to 51 and 55 to 72 are drawings in an original technic by Jean E. Hirsch. Second edition. Philadelphia: J. B. Lippincott Company, 1943. 196 p. illus. 26 cm. \$6.50. 2202

Contents: General principles of Roentgen diagnosis. Bones and joints. Diseases of the spine and the spinal cord. The skull and its contents. Thorax. Digestive tract. Biliary tract. Abdomen, miscellaneous. Urinary tract. Female generative organs. Miscellaneous topics. Index. Pictorial atlas.

Note: A synopsis, in outline form, of the principles and practice of diagnosis by means of roentgenology. A thorough knowledge of the physical basis, method of application, and the risks involved in the use of Roentgen rays is assumed on the part of the reader, and discussions of these phases are therefore omitted. For each disease treated there is a summary of the X-ray findings to be anticipated and the diagnoses which can be made on the basis of such information. Special preparation of the patient, wherever necessary, is outlined and the various techniques briefly described. There are 227 reproductions of roentgenograms accompanied by explanatory captions. The second edition contains references to such new syndromes as sarcoidosis, brucellosis, erythroblastic anemia, and many others, plus a new treatment of the technique and value of fluoroscopy.

ROBERTSON, JOHN KELLOCK

Radiology physics; an introductory course for medical or premedical students and for all radiologists. New York: D. Van Nostrand Company, Inc., 1941. 270 p. illus. 23 cm. \$3.50. 2202a

Contents: Alternating currents. Production of high voltage. Measurement and control of high tension voltage. Cathode rays. Positive rays and isotopes. Roentgen tubes. Valve rectification. General properties of X-rays. Electromagnetic waves. Measurement of wave length of X-rays. Secondary X-rays and absorption. Roentgen ray dosage. Radioactivity. Supervoltage tubes and high speed particles. Artificial radioactivity. High frequency currents. Appendix: Some useful constants and conversion factors. Table of atomic numbers, atomic weights and stable isotopes. Problems and examination questions. International recommendations for X-ray and radium protection. Index.

Note: A textbook developed at Queen's University, Kingston, Canada. It is useful also to radiologists and radiological technicians as an elementary explanation of X-rays and X-ray apparatus.

TEMPLETON, FREDERIC EASTLAND

X-ray examination of the stomach; a description of the roentgenologic anatomy, physiology, and pathology of the esophagus, stomach, and duodenum. Chicago, Ill.: The University of Chicago Press, 1944. 516 p. illus. 23 cm. \$10.00. 2203

Contents (abridged): Introduction. Apparatus. Examination. Basic principles of interpretation. The normal pharynx, esophagus, stomach, and duodenum. Abnormalities of the pharyngoesophageal region. Pathologic changes giving rise to roentgenologic signs of disease. Inflammations. Peptic ulcers. Neoplasms. Benign hypertrophy of the pylorus. The stomach after the operation. Varices. Cardiospasm. Diverticula. Diaphragmatic hernia. Foreign bodies. Differential diagnosis. Bibliography. Index of names. Index of subjects.

Note: This book describes an intensive study of the upper digestive tract, using the X-ray as the medium. It includes a presentation of modern roentgenologic methods, their use and interpretation, together with a detailed consideration of the normal and abnormal manifestations encountered in the stomach, esophagus, and duodenum and a careful differential diagnosis.

YEAR BOOK OF RADIOLOGY

The 1944 Year book of radiology. Part I, Diagnosis, edited by Charles A. Waters and Whitmer B. Firor. Part II, Therapeutics, edited by Ira I. Kaplan. Chicago: The Year Book Publishers, Inc., 1944. 448 p. illus. 23 cm. \$5.00. 2204

Contents: Part I, Radiologic diagnosis: Osseous system. Skull. Soft tissues. Respiratory system. Cardiovascular. Gastro-intestinal. Genito-urinary. Obstetrics and gynecology. Nervous system. Technic. Teaching and principles of practice. Part II, Radio-therapeutics: Introduction. General considerations. Radiation biology. Physics. Radiation in general medicine. In neurology. Ophthalmology. Dermatology. Otolaryngologic conditions. Chest. Breast. Gastro-intestinal. Gynecologic. Genito-urinary. Bone. Radiation injuries and trauma. Indexes.

Note: This is one of the titles comprising the Practical medicine series of year books. It is an illustrated digest of the international literature on radiologic diagnosis and treatment, appearing annually in October, and has been published since 1932. For a representative issue of this publication about 130 articles on diagnosis and about 110 on therapeutic procedures are chosen by the editors and are abstracted. Approximately 350-450 illustrations are also selected, the majority being reproduced from original documents loaned for this purpose by authors and clinics. This book is intended for radiologists and for general physicians and surgeons.

Nutrition

BRIDGES, MILTON ARLANDEN

Dietetics for the clinician. Fourth edition, thoroughly revised. Philadelphia: Lea & Febiger, 1941. 960 p. illus. 24 cm. \$10.00. 2205

Contents: Mechanics of digestion. Physiology and chemistry of digestion. Vitamin factors in the diet. Classification and structure of foods. Acid-base factors in nutrition. Practical evaluation of foods. Tabulation of food factors. Food adjuncts. Supplementary methods of feeding. Diseases and their diet. Appendix. Alcoholic beverages. Definitions and descriptions. Bibliographies.

Note: This fourth edition had been planned by the late Dr. Bridges, and was carried to completion by his associates. The tables and bibliography have been expanded and the text revised. Among the changes are: the substitution of typical diets for sample menus; revision of the section on vitamins; discussion of acid-base factors in nutrition; and the tabulation of the pH values for practically every natural food and many recipe items.

FIELD, RICHARD MITCHELL

The complete book of diets for all ages including medical dietetic suggestions for 325 common ailments. Garden City, N.Y.: Doubleday, Doran & Co., Inc., 1942. 272 p. illus. 21 cm. \$2.50. 2206

Contents (abridged): Diet chart index of normal and corrective diets. How bad dietary habits start. Health questionnaire. War worry or chronic fear neurosis and its relation to malnutrition. The malnutrition problem: two suggested solutions. Normal and corrective diets: basic dietary requirements of the various ages. Logical allowances from strict dietary routines. Five practical dietary rules for normal health. Artificial milk-feeding formulas. Normal diets from infancy to old age. Corrective diets

adapted for 325 different ailments. Principles of balanced nutrition: how to balance your own diet. Why animal proteins should be eaten only once daily. Why oily or fatty foods should not be eaten to excess. Why soups or liquids should not be eaten with high-protein meals. Recent changes in practical dietetics. Calories alone are not important in most diets. Balanced diet is of prime importance. Artificial vitamins are greatly overrated. How to select the right foods. Packaged foods.

Note: A guide for the layman to the role of correct diet in preventive and corrective medicine. The first part of the book presents diets for well people in all age groups, and for persons suffering from any of 325 common ailments. The second part gives reasons for the make-up of diets and offers guidance in preparing diets.

HAWLEY, ESTELLE ELIZABETH, AND ESTHER E. MAURER-MAST

The fundamentals of nutrition. Including table of 100-calorie portions by Estelle E. Hawley, Esther E. Maurer and Herbert F. Van Epps; and discussions of the dietary management in specific conditions by collaborators associated or formerly associated with the University of Rochester, School of Medicine and Dentistry, with a foreword by John R. Murlin. Springfield, Ill.: Charles C. Thomas, 1940. 477 p. illus. 25 cm. \$5.00. 2207

Contents (abridged): Metabolism. Fundamentals of nutrition. Diet therapy. Modification of diet in: A. Diseases of metabolism, by Samuel H. Bassett and others. B. Diseases of the digestive system, by Harry L. Segal and others. C. Specific disease groups—cardio-vascular and renal diseases, by E. Henry Keutmann. Diet and the anemias, by Freda S. Robscheit-Robbins. The ketogenic diet in the treatment of epilepsy, urinary infections, and other conditions, by Irvine McQuarrie. Food allergy, by Jerome Glaser. The toxemias of pregnancy, by Ward L. Ekas. The influence of diet on urolithiasis, by Winfield W. Scott. Dietary treatment of metallic poisoning, by Paul Garvey. D. The treatment of surgical patients, by W. J. Merle Scott. E. Other conditions—diet in pregnancy and lactation, by Ray G. Daggs. Diet in relation to dental development, by D. C. M. Day. The feeding of normal children, by Samuel W. Clausen. Minerals and mineral metabolism, by Harold B. Pierce. Vitamins and vitamin deficiencies. Diet planning: the table of 100-calorie portions. Appendix. Index.

Note: The primary concern of this book is with the fundamentals of nutrition for the normal person. Also it includes discussions of the practical adjustments needed for sick persons. Presented by 23 specialists with a large and comprehensive experience, the book is designed for use by practicing physicians.

MCLESTER, JAMES SOMERVILLE

Nutrition and diet in health and disease. Fourth edition, thoroughly revised. Philadelphia: W. B. Saunders Company, 1943. 849 p. illus. 24 cm. \$8.00. 2208

Contents: Nutrition in health. Utilization of food. Fuel requirements. Protein problem. Vitamins. Minerals and water. Nutritional factors of lesser importance. Milk and milk products. Meat, fish, and eggs. Other foods. Diet in health. Normal diet. Feeding of infants. Diet and reproduction. Nutrition in disease. Deficiency diseases. Diabetes mellitus. Gout. Obesity and leanness. Food poisoning and allergy. Diseases of the kidney and urinary tract, of digestive organs. Febrile diseases. Diseases of heart and arteries, blood, joints, nervous system. Endocrine disorders. Diseases of the skin. Feeding the surgical patient. Nutrition in industry. Appendix: Special methods of feeding. Storing and processing of foods. Methods of cooking. Tables of height, weight, age, equivalents. Composition of American food materials and alcoholic beverages. Vitamin and mineral potency in cooked and canned foods. Index.

Note: This book has application to the needs of physicians, medical students, nutritionists, and others concerned with the subject. It is not alone concerned with the prescription of diet in the treatment of nutritional and general disorders, but also brings out the importance of proper nutrition in keeping the well person healthy. Bibliographies follow each chapter. Because of the constant advances in the knowledge of nutrition, the fourth edition is the result of extensive revision, particularly insofar as

such parts as those dealing with vitamins, minerals, changes in distribution and composition of the commoner foods, storage and processing of foods, deficiency diseases, etc. A section has been added on feeding the aged and an entire chapter incorporated on nutrition in industry.

NEWBURGH, LOUIS HARRY, AND FRANCES MAC-KINNON

613.2
The practice of dietetics. New York: The Macmillan Company, 1934. 264 p. illus. 22 cm. (Macmillan medical monographs) \$4.00. 2209

Contents: The material needs of the organism: Introduction. Structural substances. Energy. Regulatory substances. Metabolic mixture. Nutritive value of foods. The selection of food: Sources; groups; standards. Therapy by means of diet: Types of therapeutic diets. The kinds of abnormality appropriate for diet therapy. How to fit the food to the abnormality. Dietary control of diabetes mellitus. Dietary treatment of renal diseases.

Note: The aim of this book, written primarily for the medical practitioner, the medical student, and the dietitian, is to present methods for deciding whether and how disease may be ameliorated by diet. In the first part of the book the authors have brought together the existing, well established knowledge of all those things that the body needs to grow into and maintain itself in a state of robust health. The second part deals with the methods of selecting and supplying these materials.

Medical Climatology

HUNT, VIRGINIA LLOYD (FOX)

How to live in the tropics. New York: Harcourt, Brace and Company, 1942. 178 p. 21 cm. \$2.00. 2210

Contents: So you're going to the tropics. Preparations. Climate. Environment. Daily routine of keeping fit. Victuals and drink. Hobbies. Women, children, servants. Insect enemies. Communicable diseases. Home nursing. Emergency first aid. Where to look it up. Index.

Note: A brief handbook that treats the practical problem of living in the tropics from the standpoint of the traveler used to temperate zones. Deals with such topics as the preparatory physical examination, heat injuries, choice of a dwelling, insect and rat control, care of the skin, diet, precautions against communicable disease, treatment of symptoms, and related subjects. Intended only for the civilian traveler.

HUNTINGTON, ELLSWORTH

506
Weather and health: a study of daily mortality in New York City. Prepared under the direction and with the advice of the Committee on the Atmosphere and Man, Division of Biology and Agriculture, National Research Council. Washington, D.C.: The National Research Council of the National Academy of Sciences, 1930. 161 p. illus. 24 cm. (Bulletin of the National Research Council. No. 75, April, 1940) Gratis. 2211

Contents: Materials and methods. Temperature and the death rate. Relative humidity and the death rate. Interpretation of effects of temperature and humidity by climographs. Variability of temperature. A climographic interpretation of interdiurnal variability. The general effect of climatic variability. Summary. Bibliography. Tables.

Note: A technical report of an investigation made between 1921 and 1929 in order to determine more precisely the relation between weather and health. The results here set forth confirm the idea that man, like other animals, is subject to distinct optimum of temperature, estimated at 63° F. for day and night together, although this optimum is shown to vary greatly for different ages and with respect to resistance to different diseases. Moderate temperatures at high atmospheric humidity are shown to be associated with better health than at low humidity. In addition, the paper attempts to demonstrate that a drop in daily temperature is systematically accompanied by a relatively low death rate, and a rise by a high death rate; also, variable

weather in New York City at least is shown to be more healthful than uniform weather.

MILLS, CLARENCE ALONZO

Climate makes the man. New York: Harper & Brothers, 1942. 320 p. illus. 22 cm. \$3.00. 2212

Contents: Sun worshipers. Helpers in the laboratory. Farm animals in the tropics. Vitamins and climate. The fallacy of early tropical maturity. The price of activity. Drugs and stimulants. Stormy weather and respiratory infections. Tuberculosis, leprosy, and rheumatic infections. Cancer. Shadows over our cities. Killing heat. Bad moods and falling barometers. Climate and human reproduction. Made-to-order indoor climates. Life, sunspots, and the atmosphere. Ice ages and climates of the future. Climate, weather, and world dominance. Thermometers and history. Climate and world war. Migration for health. From flood tide to beginning ebb. Epilogue.

Note: A discussion for the layman of the effects climate has on man—his rate of growth, speed of development, resistance to infection, fertility of mind and body, happiness, and length of life.

MILLS, CLARENCE ALONZO

Medical climatology; climatic and weather influences in health and disease. Springfield, Ill.: Charles C. Thomas, 1939. 296 p. illus. 23 cm. \$4.50. 2213

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Contents: Climate versus weather. The energy basis of human existence. Climatic dominance over growth and development. Changes in fertility and sexual functions. World climates as they directly affect man. Climate and disturbances of metabolism (diabetes, goiter, pernicious anemia and leukemia). Infectious diseases and body resistance (acute respiratory infections, tuberculosis, acute nephritis, acute appendicitis, leprosy). Sclerosis and failure in the circulatory system. Mental function (suicides, homicides, mental instability and breakdown). Susceptibility to heat effects. Dental caries. Seasonal and regional factors in acute rheumatic fever and rheumatic heart disease. Therapeutic uses of natural and artificial climates. Colonization for climatically handicapped individuals. The conditioning of indoor environments. Tides in sickness and death rates. Season of birth. Fluctuations in the climatic drive. References. Index.

Note: The influence of climate and weather upon health and disease on the North American continent is discussed in relation to metabolism, body resistance, infectious diseases, the circulatory system, fertility, growth, dental caries. Extrinsic factors that basically influence the fundamentals of human existence are presented, and made more useful by a plentiful provision of graphs and figures.

PRICE, ARCHIBALD GRENFELL

White settlers in the tropics; with additional notes by Robert G. Stone. New York: American Geographical Society, 1939. 311 p. illus. 25 cm. (American Geographical Society. Special publication no. 23) \$4.00. 2214

Contents: Part I, Nature and history of the problem of white settlements in the tropics: The problem of white settlement in the tropics. Prescientific invasion of the tropics. British failures in the West Indies. The scientific invasions of the tropics. Part II, Some white settlements in the tropics—regional studies: The trade-wind margins. Florida. Queensland. Islands of the West Indies. The arid and wet-dry tropics: Australia. Tropical plateaus: Costa Rica. South America. Africa. The Americans in Panama. Part III, Some factors governing white settlements in the tropics: Racial problems. Some environmental factors. Acclimatization and health. Diet, clothing, exercise. Some administrative and economic problems. Summary and conclusions. Notes. Appendixes: Some results of modern physiological research in relation to acclimatization in the tropics. Comfort zones and acclimatization. A note on the cooling power. Additional references on physiology and acclimatization in the tropics. Index.

Note: Presents a record of many types of white settlements in the tropics, covering the general problem of why colonization by whites has largely failed, and indicating the degree of progress made since earliest recorded times. Contradictory theories are discussed and evaluated. The problem is examined in the light of historical, statistical, and laboratory research, based largely on the literature of the field. References are given in notes in the appendix and there is an additional list on physiology and acclimatization.

Disease, General

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. SECTION ON MEDICAL SCIENCES

Tuberculosis and leprosy, the mycobacterial diseases; editor, Forest Ray Moulton; publication committee: Esmond R. Long, chairman, George W. McCoy, Earl B. McKinley [and others]. Washington: The American Association for the Advancement of Science, 1938. 133 p. illus. 26 cm. (Its Symposium series. Vol. 1) \$2.50. 2215

Contents (abridged): Tuberculosis, leprosy and other diseases caused by acid-fast bacteria, by William Charles White. Some morphological characteristics of the tubercle bacillus, by Morton C. Kahn and José F. Nonidez. Chemical studies on the tubercle bacillus and other acid-fast bacilli; Part 1, by Rudolph J. Anderson; Part 2, by Michael Heidelberger and Arthur E. O. Menzel; Part 3, by Florence B. Seibert. Immunity to mycobacterial diseases, with special reference to tuberculosis, by Max B. Lurie. The pathology of tuberculosis, by Florence R. Sabin. Discussion of the common characteristics of the acid-fast bacteria, by H. J. Corper. Tuberculosis in domestic animals, by George W. Stiles. The histopathology of the intradermic tuberculin reaction in cattle, by William H. Feldman. The specificity of the tuberculin reaction in cattle and laboratory animals, by Arthur B. Crawford. On certain acid-fast bacteria as the probable cause of skin lesions in tuberculin-reacting non-tuberculous cattle, by Lyman L. Daines. Johne's disease or paratuberculosis of cattle, with a note on the disease in sheep, by William A. Hagan. The bacteriology and immunology of leprosy, by Malcolm H. Soule and Earl B. McKinley. The pathology of leprosy, by Sam H. Black. Salient features in the epidemiology of leprosy, by James A. Doull. Discussion on leprosy in the United States, by George W. McCoy. Heredity in leprosy, by Ralph Hopkins. Institutional segregation in leprosy, by Hermon E. Hasseltine. Tuberculosis, leprosy and allied mycobacterial diseases, by Esmond R. Long.

Note: Papers presented at Denver in June, 1937, as the seventh symposium organized by the Section on Medical Sciences of the American Association for the Advancement of Science. References are given at the end of most of the chapters.

AMERICAN MEDICAL ASSOCIATION

Standard nomenclature of disease and standard nomenclature of operations, edited by Edwin Pratt Jordan. Third edition. Chicago: American Medical Association, 1942. 1022 p. 19 cm. \$4.00. 2216

Contents: I, Standard nomenclature of disease: Instructions to record librarians. Scheme of classification. Diseases of: Psychobiologic unit; mental disorders. The body as a whole; regional and general diseases. Skin and mucous membranes. Breast. Musculoskeletal system. Respiratory system. Cardiovascular system; manifestations of cardiac disease. Hemic and lymphatic systems. Digestive system; abdomen and peritoneum; portal, hepatic and mesenteric vessels. Urogenital system; obstetric conditions and diseases. Endocrine system. Nervous system; manifestations of diseases of the nervous system; convulsive disorders. Eye. Ear. Supplementary lists: General manifestations of disease; non-diagnostic terms for hospital record. Index. Table of eponymic diseases. II, Standard nomenclature of operations: Classification. Operations on: Regions of the body. Mediastinum. Skin and mucous membranes. Breast. Musculoskeletal system. Extremities. Respiratory system. Cardiovascular system. Hemic and lymphatic systems. Digestive system. Urogenital system. Fetus and fetal structures. Endocrine system. Nervous system. Eye. Ear. Supplementary lists: Anesthetic agents and methods. Index.

Note: The National Conference on Nomenclature of Disease was formed in 1928 and the basic plan for this system of classifying disease was adopted in 1930. The first edition of this book appeared in 1933, the second in 1935, both under the title, *Standard classified nomenclature of disease*. Responsibility for periodic revision of the text was taken over by the American Medical Association in 1937. In the present edition no essential change has been made in the arrangement, but about 3500 additions, deletions, and corrections have been made in individual diagnostic entries. Except for the new section on the nomenclature of operations, the book is designed primarily for clinicians.

BAUER, JULIUS

Constitution and disease; applied constitutional pathology. New York: Grune & Stratton, 1942. 208 p. illus. 22 cm. \$3.50. 2218

Contents (abridged): Preface. Introduction. Constitutional pathology and its general significance. Constitutional biological inferiority of organs and tissues. Integrative systems of individual constitution: the endocrine system. Endocrine vs. constitutional anomalies. The nervous system. Psychosomatic medicine. Classification of normal and abnormal constitution. Some major diseases with chiefly constitutional etiology. Principles of treatment. Bibliography.

Note: Applied constitutional pathology is defined by the author as the correlation of facts taught in endocrinology, and in other branches of medicine as well, to the particular situation encountered in individual patients. It is his thesis that in American medicine too much emphasis is placed on exogenous factors, to the neglect of the endogenous constitutional factors, and it is his purpose in this book to emphasize the importance of the latter. Medicine, he says, is more than an applied exact science, it requires an integrative comprehension of the patient's personality, both physical and mental. No attempt has been made in this book to compile the considerable literature on constitution and disease. It is simply a statement of the author's own beliefs, based on his long years of experience. The volume is intended for the medical student, the general practitioner, and specialists in the field of neurology and psychiatry. A selected bibliography is given.

BAUER, WILLIAM WALDO

Contagious diseases; a guide for parents. Second revised edition. New York: A. A. Knopf, 1944. 188 p. 20 cm. \$2.50. 2219

Contents (abridged): Through the microscope. Quarantine. Regulations for the control of communicable diseases. Home nursing. Scarlet fever. Measles. Whooping cough. Vaccination prevents smallpox. Rabies. "Polio." Colds and consequences. Itch. Tuberculosis. Tropical diseases. The safest place in town. Miscellany. Conclusion. Glossary of terms. Index.

Note: An informal account of the nature and treatment of the more common contagious diseases of childhood from the viewpoint of the responsibilities of the parent in the home and as a supplement to the doctor's instructions. Parents are warned of certain indications which may arouse suspicions of the particular disease and given instructions in the various phases of home nursing as well as in the means of prevention, particularly in the case of smallpox and the respiratory diseases. The second edition contains a bibliography on home nursing, a reprint of the University of Chicago's regulations for the control of communicable diseases in chart form, plus new material on the sulfonamide drugs in the treatment of meningitis and pneumonia.

BLUM, HAROLD FRANCIS

Photodynamic action and diseases caused by light. New York: Reinhold Publishing Corporation, 1941. 309 p. illus. 23 cm. (American Chemical Society monograph series. No. 85) \$6.00. 2220

Contents: The nature of radiation and its effects. General biological effects of radiation. Photodynamic action. General photochemical aspects of photodynamic action. Light absorption in photodynamic action. The role of oxygen in photodynamic action. The mechanism of photodynamic action. Factors determining apparent photodynamic effectiveness. Other theories of photodynamic action. Variety of photodynamic effect. Photodynamic action and other photobiological processes. Diseases produced by light in domestic animals. Diseases of domestic animals—General. Hypericium (St. Johnswort poisoning). Geeldikkop (Yellow thick head). Fagopyrism (Buckwheat poisoning) and other diseases attributed to photodynamic action. Diseases produced by light in man. Abnormal sensitivity to light in man. The response of normal skin to light: the sunburn spectrum. Abnormal response to blue and violet light (Urticaria solare). The photosensitizing action of porphyrins in man. Abnormal sensitivity to the sunburn spectrum. Polymorphic light eruption. Effects of long exposure to sunlight. Skin cancer and the sunburn spectrum. Xeroderma pigmentosum. Photosensitization by substances coming into contact with the skin. Photosensitization by substances applied internally. Other diseases attributed to the action of light. Bibliography. Author index. Subject index.

Note: This study of the biological effects of light on animals and human beings is based on a survey of the literature of the subject. Part one reviews the fundamentals of radiation and photochemistry, while part two provides an analysis of the mechanism of photodynamic action. The two final sections discuss those diseases resulting from over-exposure to sunlight, and from a sensitivity to light produced by the presence of various substances in the body. The 13-page bibliography is arranged alphabetically by author.

BODANSKY, MEYER, AND OSCAR BODANSKY

Biochemistry of disease. New York: The Macmillan Company, 1940. 684 p. illus. 24 cm. (The Macmillan medical monographs) \$9.00. 2221

Contents: Diseases of: Blood. Heart. Respiratory tract. Kidney and urinary tract. Digestive tract. Liver and biliary tract. Pancreas. Adrenals. Pituitary. Thyroid. Parathyroids. Bone. Muscle. Male gonads. Applications of biochemistry in obstetrics and gynecology. Miscellaneous disorders of nutrition. Miscellaneous disorders of metabolism. Biochemical aspects of neurologic and psychiatric disorders. Indexes.

Note: This book was written primarily for the practicing physician. It is a systematic presentation of the biochemical aspects of the various diseases, arranged according to the clinical entities. Subjects such as carbohydrate, protein, fat, and mineral metabolism, oxidation reduction, etc., are considered only in connection with the various disease conditions, and descriptions of laboratory tests are limited to those functional tests in which the physician must participate. Bibliographies are given at the end of chapters.

BOYD, WILLIAM

The pathology of internal diseases. Fourth edition, thoroughly revised. Philadelphia: Lea & Febiger, 1944. 857 p. illus. (part col.) 24 cm. \$10.00. 2222

Contents: Diseases of the heart. Diseases of the arteries. Diseases of the respiratory system. Diseases of the stomach and duodenum. Diseases of the intestines. Diseases of the liver and gall-bladder. Diseases of the pancreas. Diseases of the kidneys. Diseases of the adrenal glands. Diseases of the thyroid gland. Diseases of the parathyroid glands. Diseases of the pituitary body. Diseases of the blood. Diseases of the bone-marrow. Diseases of the spleen. Diseases of the lymph nodes and thymus gland. Diseases of the nervous system. Index.

Note: An illustrated textbook of internal medicine written from the point of view not of diagnosis or of cure, but of the mechanism of disease. The book touches upon the realm of pathological physiology where morbid anatomy in itself is insufficient to explain the relation of symptoms to lesions. For the fourth edition many new sections have been added, while others have been rewritten and additional illustrative material has been supplied, in order that advances made, particularly in the field of the diseases of the cardiovascular system, might be included. References at the end of each chapter. The book is intended for the practicing physician as much as for the student. It is a companion volume of the author's *Surgical pathology* (see Index).

CHAMBERS, JOHN SHARPE

The conquest of cholera, America's greatest scourge. New York: The Macmillan Company, 1938. 366 p. illus. 22 cm. \$4.75. 2223

Contents: Heritages of 1832. Cholera's first invasion of the new world. Pestilence of 1832 along the Atlantic seaboard. Black Hawk war, Old Man River and the cholera of 1832. Scourge of 1833 in the interior valley. The 1833 epidemic in the Bluegrass. Medical contributions, 1833 to 1849. Second American invasion and the '49 gold rush. Pasteur and the microbes. Epidemic of 1866. Cholera of 1873. Miasms to microbes. Bibliography. Index.

Note: The advance of medicine from miasms as a speculative philosophy to microbes as a scientific fact is dramatically presented in this book, which deals in particular with the fight against Asiatic cholera in the United States. It covers the period from the outbreak of this pestilence in 1832 to its final conquest in 1892 and shows how ships, river steamboats, stage coaches, emigrant parties, and individual travelers contributed to its spread. The story is based on an extended study of contemporary newspapers and public and private records.

DICK, GEORGE FREDERICK, AND GLADYS HENRY DICK

Scarlet fever. Chicago: The Year Book Publishers, Inc., 1938. 149 p. illus. (col.) 21 cm. \$2.00. 2223a

Contents: History. Etiology. Pathologic anatomy. Symptoms. Varieties of scarlet fever. Complications. Diagnosis and prognosis. Treatment. The preparation of scarlet fever toxin. The skin test for susceptibility to scarlet fever. Prophylaxis. Specificity of hemolytic streptococci. Allergy. Antibacterial immunity. Local immunity and oral immunization. References. Index.

Note: A classic text by two workers who have contributed much to our knowledge of the etiology and preventive procedures for scarlet fever. The colored illustrations are designed to aid in the diagnosis and treatment of the disease.

DRAPER, GEORGE, AND OTHERS

Human constitution in clinical medicine, by George Draper, C. W. Dupertuis and J. L. Caughey, Jr. New York: P. B. Hoeber, Inc., 1944. 273 p. illus. 24 cm. \$4.00. 2223b

Contents: Introduction. Perception and response. History-taking, or clinical biography. Genetics and clinical medicine: personal inheritance and personal disease. Growth, development, decline, and death. Mosaic of androgyny. Problems of observation, correlation, and interpretation. Anthropometry. Somatotypes. Constitutional physiology. Constitutional physiology: clinical application. Problems and examples in the clinical use of constitution studies. Unity of the organism. Conclusion. Bibliography. Index.

Note: To demonstrate the clinical application of the constitutional approach to medicine, three diseases have here been used as examples: diabetes, acute anterior poliomyelitis, and peptic ulcer. Dr. Draper and his associates of Columbia University's Constitution Clinic discuss growth, development, extragenital sex, and constitutional differences pointing to disease susceptibility; the patient and the disease are not considered as separate but as integrated and interdependent. Case histories and examples of patient management are used to make the book concretely concerned with clinical medicine. It is intended primarily for the medical profession.

FROST, WADE HAMPTON

Papers of Wade Hampton Frost, M. D.; a contribution to epidemiological method, edited by Kenneth F. Maxcy, M. D. New York: The Commonwealth Fund, 1941. 628 p. illus. 24 cm. \$3.00. 2224

Contents: Introduction. Section I, Investigations of epidemics: Water supply of Williamson, West Virginia, its relation to an epidemic of typhoid fever. Septic sore throat: a milk-borne outbreak in Baltimore, Maryland. Epidemiological studies of acute anterior poliomyelitis. Section II, Stream pollution and water purification: Some considerations in estimating sanitary quality of water supplies. Sewage pollution of streams; its relation to public health. Review of work of United States Public Health Service in investigations of stream pollution. Section III, Studies of endemic acute infectious diseases: Epidemiology of influenza. Statistics of influenza morbidity, with special reference to certain factors in case incidence and case fatality. Incidence and time distribution of common colds in several groups kept under continuous observation. Acute minor respiratory diseases prevailing in a group of families residing in Baltimore, Maryland, 1928-1930; prevalence, distribution and clinical description of observed cases. Minor respiratory diseases as observed during the influenza epidemic of 1928-1929 and in a non-epidemic period. Infection, immunity and disease in epidemiology of diphtheria, with special reference to some studies in Baltimore. Diphtheria in Baltimore; a comparative study of morbidity, carrier prevalence and antitoxic immunity in 1921-1924 and 1933-1936. Section IV, Epidemiological principles and public health practice: Epidemiology. Familial aggregation of infectious diseases. Rendering account in public health. Authoritative standards and association policy. Section V, Studies of infectious diseases of long duration: Tuberculosis. Bibliography. Index.

Note: Dr. Frost was considered the dean of American epidemiologists. In this volume his most important papers have been gathered together, with discussions of the significance of his contributions. The collection shows his development of a more exact quantitative technique in dealing with the problems of epidemiology, and his influence upon its change from a descriptive to an analytic science.

HARRIS, SEALE, AND OTHERS

Clinical pellagra, by Seale Harris, assisted by Seale Harris, Jr., with foreword by E. V. McCollum. St. Louis: The C. V. Mosby Company, 1940. 494 p. illus. (part col.) 25 cm. \$7.00. 2226

Contents (abridged): Early history and epidemiology of pellagra. History and epidemiology in the United States. Alcoholic pellagra. Early theories on the etiology of pellagra. The relation of infections to pellagra. Food deficiency theories. Experiments on animals in the quest for the cause of pellagra. Vitamin deficiency theories. Conditions and diseases which increase susceptibility to pellagra. The effects of sunlight in the genesis of pellagra. The genesis of pellagra: the author's view. Pellagra, pernicious anemia, and sprue. Pathology. Clinical investigations: Studies on pellagra at Duke University School of Medicine, by Julian Ruffin. Studies on pellagra at the University of Georgia, by V. P. Sydenstricker. The treatment of pellagrous lesions with an anterior lobe pituitary extract, by Don C. Rutton. The symptoms of pellagra. Skin manifestations. Complications. Laboratory findings. Differential diagnosis. Pellagra in childhood, by Katherine Dodd. The heart in endemic pellagra, by William B. Porter. Prognosis. Prevention. Plagues from the use of devitaminized foods. Pellagra and southern prosperity. Specific therapy—nicotinic acid and liver in pellagra. Dietary management. Treatment of symptoms and complications. Bibliography. Index.

Note: This is a factual treatise on pellagra in which the various phases of the subject are discussed, including summaries of the most important contributions, by authorities on the subject. One of the features of the work is the author's own contribution on the genesis of pellagra, in which he concludes that while the essential factor in the production of this endemic skin and spinal disease is a deficiency of nicotinic acid and the pellagra-preventive factor in vitamin B, the underlying pathogenesis of the nicotinic acid deficiency is probably insufficiency of the stomach and liver. Other important material is contained in the chapters summarizing investigations at Duke University and the University of Georgia. The bibliography contains about 500 items on the world literature of the subject.

HOLMES, WILLIAM HENRY

Bacillary and rickettsial infections, acute and chronic; a textbook, black death to white plague. New York: The Macmillan Company, 1940. 676 p. illus. 24 cm. \$7.00. 2227

Contents (abridged): The Pasteurella infections. The rickettsial infections of man. The Brucella infections. The enteric infections. Bacillary intoxications. Hemophilus infections. The mycobacterial diseases. Miscellaneous bacillary infections. Index.

Note: This author believes that medicine should be studied as it has evolved, in relation to the growth of civilization. He combines here history, thought, and modern diagnosis, and by using this broad approach produces a book that serves as an introduction to internal medicine for students and practitioners, and as preparation for internists applying for certification by the American Board of Internal Medicine. With many of the sections a comprehensive list of references is given.

HUDDLESON, IRVIN FOREST

Brucellosis in man and animals. Contributing authors: A. V. Hardy, J. E. Debono, and Ward Giltner. Revised edition. New York: The Commonwealth Fund, 1943. 379 p. illus. (part col.) 23 cm. \$3.50. 2228

Contents: The genus Brucella. Methods of isolating Brucella. Differentiation of the species of the genus Brucella. Brucellosis in human beings. Historical survey. Brucellosis in the United States. Brucellosis in Malta. Treatment. Brucellosis in animals. *Brucellosis bovis*. *Brucellosis suis*. *Brucellosis caprinus* and *ovinus*. Brucellosis in the guinea pig. Laboratory diagnosis of brucellosis. Allergic methods. The opsonocytophagic test. The blood picture in brucellosis in human beings and in bovine animals. Eradication or control of sources of brucellosis infection. Appendix: Case reports. Bibliography. Index.

Note: The 1943 edition of this well-known treatise on the history, nature, diagnosis, treatment, and control of the disease includes a more complete description of the variant or dissociated types of the organism and a detailed discussion of the simple and rapid method, recently developed, of determining the virulence of the species of Brucella. The value of new agents such as vac-

cines and drug therapy in the treatment of human brucellosis, and recent information on the epidemiology and diagnosis of human brucellosis, are set forth. There is a detailed presentation of the considerable body of information gathered in recent years as to the nature of the disease in animals and as to immunization in cattle.

HULL, THOMAS GORDON

Diseases transmitted from animals to man. Second edition. Springfield, Ill.: Charles C. Thomas, 1941. 403 p. illus. 24 cm. \$5.50. 2229

Contents: Section I: Tuberculosis. Anthrax. Foot-and-mouth disease. Brucellosis. Milk sickness. Smallpox and cowpox. Glanders. Rabies. Psittacosis. Swine erysipelas. Louping ill. Sore mouth in sheep. Equine encephalomyelitis. Rift Valley fever. Food infections. Infections produced by animal parasites. Fungous diseases. Section II: Plague. Tularemia. Leptospirosis. Rat-bite fever. Typhus fever. Rocky Mountain spotted fever. Relapsing fever. Section III: Relation of human infections to animals. Septic sore throat. Diphtheria. Scarlet fever. Section IV: Botulism. Tetanus. Gas gangrene. Section V: The role of cattle, horses, swine, sheep and goats, dogs, cats, rats and mice, poultry, birds, and wild game.

Note: All the chapters of the first edition have been revised and brought up to date. The chapters on animal parasites, on fungous diseases, and on psittacosis have been entirely rewritten. New chapters have been added on louping ill, sore mouth of sheep, equine encephalomyelitis, Rift Valley fever, typhus fever, and relapsing fever. These authorities collaborated on various chapters: James F. Couch, G. M. Dack, R. E. Dyer, C. R. Eskey, Ernest C. Faust, Edward Francis, Leslie C. Frank, W. D. Frost, I. F. Huddleson, R. A. Kelsner, Joseph V. Klauder, G. W. McCoy, Karl F. Meyer, J. R. Mohler, Henry Field Smyth, Fred W. Tanner, Fred D. Weidman, R. A. Vonderlehr.

MAJOR, RALPH HERMON

Classic descriptions of disease, with biographical sketches of the authors. Second edition. Springfield, Ill.: Charles C. Thomas, 1939. 727 p. illus. 25 cm. \$5.50. 2229a

Contents (abridged): Infectious diseases. Diseases of metabolism. Lead poisoning. Diseases of the circulatory system. Diseases of the blood. Kidney diseases. Respiratory diseases. Deficiency diseases. Allergic diseases. Diseases of the digestive tract. Index.

Note: A collection of 403 case reports and other notable accounts. Under each disease, the accounts are arranged chronologically, and are usually quoted in full. The biographical sketches are a useful reference feature, and there are numerous illustrations of historical value.

MOULTON, FOREST RAY, EDITOR

A symposium on relapsing fever in the Americas. Publication committee: Frederick G. Novy, honorary chairman, Malcolm H. Soule, chairman. Washington, D.C.: American Association for the Advancement of Science, 1942. 130 p. illus. 26 cm. (American Association for the Advancement of Science. Publication no. 18) \$3.00. 2230

Contents: Part I, Introduction: Historical introduction to the symposium on relapsing fever, by W. H. Moursund. Otto H. F. Obermeier, by Konrad Birkhaug. Part II, Distribution: Present distribution of relapsing fever in Oklahoma, by W. M. Fisher. Present distribution of relapsing fever in California, by M. Dorothy Beck. Present distribution of relapsing fever in Texas, by J. M. Coleman and H. E. Wright. Relapsing fever in Panama, by H. C. Clark. Part III, Parasitology: The taxonomy of the relapsing fever spirochetes, by H. G. Johnstone. Species unity or plurality of the relapsing fever spirochetes, by Gordon E. Davis. The laboratory diagnosis of relapsing fever, by S. W. Bohls and J. V. Irons. The cultivation of the spirochetes of relapsing fever, by M. H. Soule. The serology of the relapse phenomenon in relapsing fever, by V. T. Schuhardt. Part IV, Tick vectors: Tick vectors and life cycles of ticks, by Gordon E. Davis. Determination of *Ornithodoros* species, by R. A. Cooley. The longevity of fasting and non-fasting *Ornithodoros turicata*, by E. Francis. The distribution of the spirochete within the body of the vector,

Ornithodoros hermsi, by C. M. Wheeler. Part v, Epidemiology: The epidemiology of relapsing fever, by H. L. Wynns. Part vi, Symptomatology: Symptomatology, clinical diagnosis and therapy, by George R. Magee. Symptomatology of relapsing fever superimposed on neurosyphilis, by D. H. Lawrence and J. L. Terrell. Pathology and immunity, by H. A. Kemp, E. von Haam, W. M. Fisher, and H. L. Evans. Part vii, Public health aspects, by S. W. Bohl.

Note: These papers were presented before the meeting of the Association at Dallas, Texas, December 30-31, 1941. They constitute a comprehensive and documented discussion of relapsing fever in the United States, including its symptomatology, diagnosis, etiology, epidemiology, immunity, pathology and immunity, vectors, treatment, and public health aspects.

O'HARA, DWIGHT

Air-borne infection, some observations on its decline. New York: The Commonwealth Fund, 1943. 114 p. illus. 22 cm. \$1.50. 2231

Contents: The scope of preventive medicine. Smallpox. Diphtheria. Air-transfer of disease. The common cold and others. Pneumonia. Streptococcus infections. Rheumatic fever. Tuberculosis. Natural amelioration. Raw material of health. The aging process. Conclusion. Appendix. Index.

Note: The decline in air-borne infections in the present century has been spectacular. In one state, for example, the six most common air-borne diseases that twenty-five years ago killed approximately 330 out of every hundred thousand of the population each year now account for a scant 100 deaths. Dr. O'Hara in a thoughtful discussion of air-borne diseases and our efforts at their control presents an interesting analysis of this phenomenon, some of the factors contributing to it, and some of its implications for the future health of the individual and the community.

RIVERS, THOMAS MILTON

Lane medical lectures: Viruses and virus diseases. Stanford University, Calif.: Stanford University Press, 1939. 133 p. illus. 25 cm. (Stanford University publications. University series. Medical sciences. Vol. iv, no. 1) \$2.50. 2232

Contents: Introduction. Lymphocytic choriomeningitis. Pathology of virus diseases. Immunological and serological phenomena of virus diseases. Nature of viruses. Treatment and prevention of virus diseases. Index.

Note: General aspects of virus diseases and the agents inducing them are discussed, along with the nature of the responsible agents. A presentation is also given of methods of treatment and prevention.

SMITH, GEDDES

Plague on us. New York: The Commonwealth Fund, 1941. 365 p. illus. (part col.) 23 cm. \$3.00. 2233

Contents: Prologue. Pestilence. The black death. The English sweat. "The Poore's plague." Yellow fever and the founding fathers. Asiatic cholera on the march. Yellow fever in the headlines. The "Spanish" influenza. Past thinking. Contagion. The physical environment. The human factor. Chronological digression. Miasma vs. contagion. Bacteria. The sick man. The parasite. Approach of the parasite. Entrance of the parasite. Effect of the parasite. Reception of the parasite. Fate of the host. Fate of the parasite. The sick crowd. The infective agent. Infection at home. Infection in transit. Infection and the herd. Some determinants. The epidemic formula? Defenses. Curing or killing the giver. Isolating the giver. Cutting communication. Isolating the taker. Reinforcing the taker's resistance. Detective work. The case of the Methodist ladies. The case of the wading boys. The case of the ladylike oysters. The case of the elderly villagers. The case of the sleepy lobsters. The case of the plumber's patchwork. Unfinished business. Influenza, pneumonia, the common cold. Tuberculosis. Sundry items. Malaria. Yellow fever. Plague. Epilogue.

Note: Wars, mass migrations, and epidemics have always gone together. In spite of the brilliant achievements of medicine in preventing and curing communicable disease, the world is in danger of devastating explosions of disease to add to the miseries it already suffers. This gives point to the present account of man's past experience. The fascinating story has been written by a layman for laymen, and has been checked for accuracy by medical authorities.

SNAPPER, ISIDORE

Medical clinics on bone diseases, a text and atlas. New York: Interscience Publishers, Inc., 1943. 225 p. illus. 22 cm. \$10.75. 2233a

Contents (abridged): Preface. Recklinghausen's disease: Hyperparathyroidism. Supplement. Hyperplasia of parathyroids secondary to other diseases. Avitaminosis D: Fetal rickets, infantile rickets, late rickets and osteomalacia. Paget's disease of bone. Lipoid granulomatosis of bones. Xanthomatosis of bones. Gaucher's disease. Multiple myeloma. Author index. Subject index.

Note: Written especially with relation to the theories developed following the observations of Mandl in 1926 regarding the relation between the function of the parathyroids and conditions involving decalcification of the bones. The author's personal experience covers practice both in the West and in China, upon which he has drawn for his interpretations. Numerous photographic plates, including several of Chinese patients. Bibliographies are included at the end of each chapter.

SNYDER, LAURENCE HASBROUCK

Medical genetics; a series of lectures presented to the medical schools of Duke University, Wake Forest College, and the University of North Carolina. Durham, N.C.: Duke University Press, 1941. 130 p. illus. 20 cm. (Duke University publications) \$1.50. 2234

Contents: The study of human heredity. Medicolegal applications. Mental disorders. Eye and ear abnormalities. Abnormalities of the skin. Skeletal and muscular abnormalities. Diatheses and susceptibilities. Diseases of the blood. Cancer. The future development of medical genetics. Bibliography and index.

Note: Designed to give practical help to the physician using modern genetic knowledge in his practice. It will aid in both the diagnosis and the prevention of heritable diseases and abnormalities, in giving correct advice in prospective marriages and prospective pregnancies, and in determining the paternity of children in disputed paternity cases. It should be of interest to teachers and students of genetics, in pointing out the practical applications of heredity in human beings.

STIMSON, PHILIP MOEN

A manual of the common contagious diseases. Third edition, thoroughly revised. Illustrated with 54 engravings and 6 plates, 4 in color. Philadelphia: Lea & Febiger, 1940. 465 p. illus. (part col.) 20 cm. \$4.00. 2235

Contents: Principles of contagion. Serum reactions. Diphtheria. Vincent's angina. Scarlet fever. Measles. Rubella. Whooping cough. Mumps. Chickenpox. Smallpox. Vaccination against smallpox. Meningococcus meningitis. Poliomyelitis. General management of contagious diseases. Summary of common contagious diseases. Glossary. Index.

Note: A clinical guide for practitioners, specialists in children's diseases, health officers, school and industrial physicians, internes, and nurses. A large part of the book has been rewritten in this edition. The descriptions of the etiology of scarlet fever, the etiology and therapy of measles, and the use of sulfanilamide and sulfapyridine are among the features which are largely new. A number of colored photographs were added. References follow each chapter.

THOMA, KURT HERMANN

Clinical pathology of the jaws, with a histologic and Roentgen-study of practical cases. Springfield, Ill.: Charles C. Thomas, 1934. 643 p. illus. (part col.) 25 cm. \$9.00. 2235a

Contents: Malformations of the head, face, and jaws: Deformities of the jaws due to abnormal development. Local conditions causing abnormal development of the jaws. General development diseases causing abnormal formations of face and jaws. Malformations of the skull. Atrophy. Fractures: of the maxilla; of the mandible. Infections: of jaws; of maxillary sinus; of mandibular joint. Endocrine disturbances. Nutritional disturbances and their effects on the head and jaws. General diseases of uncertain etiology: lesions of head and jaws. Localized or traumatic cysts.

Fissural cysts. Odontogenic cysts: Follicular cysts. Radicular cysts. Paradental cysts. Benign giant-cell tumors of the jaws in otherwise normal skeleton. Oral neoplasms, introduction. Peripheral tumor of the oral tissues. Odontogenic tumors. Osteogenic tumors. Central tumors in the bone of non-osteogenic and non-odontogenic origin. Tumors derived from epithelium. Tumors to jaws metastatic. Appendix. Index of case reports. Index.

Note: A comprehensive book on malformations of the head, face, and jaws; on fractures of the jaws; diseases, neoplasms, and all types of lesions of the jaws. Clinical examination and clinical and X-ray findings are set forth for practical use. Pathogenesis and pathology are given with full details. One hundred and seventy-two case histories with notes on treatment and results are included. Each case is illustrated by photographs, X-ray, or photomicrographs from which the diagnosis was made. There are 424 illustrations.

VIRUS DISEASES, by members of the Rockefeller Institute for Medical Research. Ithaca, N.Y.: Cornell University Press, 1943. 170 p. illus. 24 cm. \$2.00. 2235b

Contents: Foreword, by Thomas M. Rivers. Virus diseases with particular reference to vaccinia, by Thomas M. Rivers. Chemical structure and the mutation of viruses, by W. M. Stanley. New hosts as a key to progress in plant virus disease research, by L. O. Kunkel. Swine influenza, by R. E. Shope. Human influenza, by F. L. Horsfall, Jr. Viruses and tumors, by Peyton Rous.

Note: A compilation of six lectures delivered at Cornell University in 1942 by eminent authorities in the field of virus research.

WEBSTER, LESLIE TILLOTSON

Rabies. New York: The Macmillan Company, 1942. 168 p. illus. 21 cm. \$2.00. 2236

Contents: The diagnosis of rabies: Rabies in animals and in man; is rabies a myth? the cause of rabies; how the virus causes rabies; how the virus damages the host; the diagnosis of rabies. Prevention of rabies: History and epidemiology of rabies; prevention of rabies prior to exposure; evaluation of rabies vaccines; prevention of rabies following exposure. Bibliography. Appendices: Disposal of rabid dogs. Licensing dogs and disposing of unowned dogs. Disposal of vicious dogs. Confining animals to prevent spread of rabies. Tables on immunizing potency of antirabies vaccines. Rabies antibodies and their relation to immunity. Index.

Note: The author here brings together all of the important knowledge of rabies both practical and theoretical. There is complete information on when and how to give rabies treatment. This work is directed not only to the physician, but to health officers, dog-owners, and the general public, upon whose cooperation the continuance of a decreasing incidence of this disease depends.

ZINSSER, HANS

Rats, lice and history; being a study in biography, which, after twelve preliminary chapters indispensable for the preparation of the lay reader, deals with the life history of typhus fever. Boston: Little, Brown and Company, 1935. 301 p. 20 cm. \$3.00. 2237

Contents (abridged): An explanation and apology. The relationship between science and art. Bacteria and other parasites—the origin of life. Parasitism in general. The changing nature of infectious diseases. So-called new diseases, and some that have disappeared. Diseases of the ancient world: a consideration of the epidemic diseases which afflicted the ancient world. Epidemics and the fall of Rome. The influence of epidemic diseases on political and military history, and the relative unimportance of generals. The louse: the environment which has helped form its character. Rats. Mice. The birth, childhood, and adolescence of typhus. Earliest epidemic exploits of our disease. Young manhood: the period of early vigor and wild oats. Appraisal of a contemporary and prospects of future education and discipline.

Note: This "biography of a disease" presents an informal though scientific account of the history of typhus fever and its influence upon the course of civilization. The style of the book is non-technical, conversational, and at times dramatic and humorous. There are a number of digressions into social and economic history, literature, geography, poetry, and natural science, somewhat suggestive, as the author points out, of the

discursive plan of Sterne's *Tristram Shandy*. Written for the general reader, the work offers a wide variety of miscellaneous information relating to the history of typhus, based on the author's extensive readings of the classical writers such as Herodotus, Aristotle, Thucydides, Galen, Justinian, Procopius, Mommsen, Shakespeare, Gibbon, Brill, Murchison, and others. In spite of its achronological and desultory treatment, the work attains unity through its constant emphasis on the role of typhus in world history.

Diseases of the Abdominal Cavity

LIVINGSTON, EDWARD MEAKIN

A clinical study of the abdominal cavity and peritoneum. New York: P. B. Hoeber, Inc., 1932. 866 p. illus. 27 cm. \$15.00. 2238

Contents: Section I, The cavity: Definitions and clinical applications. Roof, or diaphragm. Floor, or pelvis. Abdominal walls. Abdominal topography. Intraperitoneal fluids. Pressure variations. II, Gastrointestinal tract: Basic embryological considerations. Anatomical and physiological divisions. Vascular system. Lymph vessels and lymphatic glands. III, Visceral neurology: General considerations. Innervation of walls. Segmentation or metamorphism. Innervation of tract as a whole. Sympathetic division of the involuntary nervous system. Parasympathetic division. Viscerogenic reflexes. Gastrointestinal reflex phenomena. Clinical interpretation of viscerosensory phenomena or skin signs. Eponyms. Questionnaire. References. Index.

Note: This book was written for two types of reader, the student and the clinician. It is intended to serve as a comprehensive postgraduate review of both preclinical and clinical subjects, and as a reference work as well as a text for casual reading. Abdominal signs and symptoms are studied with particular reference to their causation. The peritoneal cavity is viewed first as an empty space, its parts are next considered, and finally the contained organs. The literature on the various subjects concerned is reviewed and original sources quoted.

NEUHOF, HAROLD, AND EDWARD E. JEMERIN

Acute infections of the mediastinum. Baltimore: The Williams and Wilkins Company, 1943. 407 p. illus. 23 cm. \$6.00. 2239

Contents (abridged): Part I, Introductory: Introduction. Survey of the literature. Part II, Presentation of cases: Group A, Acute infections of the mediastinum secondary to trauma. Group B, Secondary to upper respiratory infection. Group C, Secondary to infection of the lung or pleura. Group D, Of miscellaneous etiology. Part III, Fundamental considerations: Surgical anatomy. Classification. Etiology. Pathology and topography. Bacteriology. Pathogenesis. Part IV, Clinical considerations: History, symptoms, and signs. Diagnostic aspects. Part V, Treatment and results: Indications for operation. Treatment. Results. Concluding remarks. Bibliography. Index.

Note: The need for this book was twofold: no comprehensive survey of the literature on this subject had been made, and mediastinitis can occur as a complication of war wounds. The presentation of a large number of well documented cases seemed to the authors to be the best way to cover all the clinical aspects of the subject. The authors have analyzed 100 cases carefully, in great detail, in order to show the variety and complexity of the clinical problems encountered. The book is well illustrated, chiefly by the use of roentgenograms. It will be of interest to surgeons, internists, roentgenologists, and others concerned with infections and injuries of the upper alimentary and air passages.

STEINBERG, BERNHARD

Infections of the peritoneum, with a foreword by Frederick A. Collier. New York: P. B. Hoeber, Inc., Medical Book Dept. of Harper & Brothers, 1944. 455 p. illus. (part col.) 24 cm. \$8.00. 2240

Contents: Foreword by Frederick A. Collier. Developmental mechanism of peritoneal infections. Applied physiology. Associated chemical changes. Pathology. Infection and resistance. Progressive stages. Peripheral blood. Roentgen ray diagnosis and therapy. Peritoneal infections in children. Less common forms.

Penetrating abdominal injuries in war and in civil life. Case histories illustrating pathogenesis, diagnosis, and prognosis of peritoneal infections. Prevention and treatment of the early stages. Treatment of the late stages and complications. Case histories illustrating therapeutic management. Index.

Note: This volume was written for the practitioner of medicine. Most of the book is devoted to the clinical aspects of infections of the peritoneum, the remainder to descriptions of investigations carried out by the author and by other investigators, and to expositions of the basic medical sciences as they apply to this condition. Emphasis is placed on the developmental mechanism of the infectious processes which involve the peritoneum, and the progressively developing sequences of the infection are divided into stages. It is the author's belief that familiarity with the mechanism by which an etiologic agent enters the body, the character of injury it induces, and the defense activities which it provokes will rectify the confusion which prevails in regard to the preferred therapeutic procedures. Many new views on the developmental mechanism, etiology, diagnosis, and treatment are presented, and in the case of the more significant problems, protocols and descriptions of experimental procedures are offered to demonstrate the basis for the views.

Hematology

BIRCH, MRS. CARROLL (LAFLEUR)

Hemophilia, clinical and genetic aspects.

Urbana: The University of Illinois, 1937. 151 p. illus. 28 cm. (Illinois medical and dental monographs. Vol. 1, no. 4) Paper, \$2.00; cloth, \$2.50.

2241

Contents: History. Clinical manifestations. Blood findings. Diagnosis. Course of the disease. Transmission. Hemophilia in the female. Summary of ninety-eight cases. Interesting facts found in family histories. Death rate. Genealogical charts. Bibliographical references. Index.

Note: This monograph presents data collected by the writer during a period of nine years at the Research and Educational Hospital of the University of Illinois. Following a discussion of the various aspects of the disease, the case reports are presented with graphs and genealogical charts, the latter compiled with great care and limited largely to verified data. The book is well illustrated. It is intended for all students and practitioners of medicine.

BLACKFAN, KENNETH D., AND LOUIS K. DIAMOND

Atlas of the blood in children. With illustrations by C. Merrill Leister. New York: The Commonwealth Fund, 1944. 320 p. illus. (part col.) 28 cm. \$12.00.

2242

Contents: The blood cells. The erythrocytes in anemias. The leukocytes in disease. Leukemia. The platelets. Bibliography. Plates. Index.

Note: A work of interest to pediatricians and also to practitioners of medicine concerned with blood disorders in adults. It is based on the authors' clinical experience in the Infants' and Children's Hospitals in Boston. It does not represent an attempt to cover all of the blood disorders of childhood, but it does cover the diseases encountered by the authors in approximately twenty years of experience at these hospitals. The text occupies 144 pages, but it is supplemented by a selected bibliography of pertinent literature. The 70 plates are reproduced in color.

DOWNEY, HAL, EDITOR

Handbook of hematology. 1448 illustrations including 50 colored plates. New York: P. B. Hoeber, Inc., 1938. 4 v. illus. (part col.) 24 cm. \$85.00.

2243

Contents: Volume 1, Erythrocytes, by Raphael Isaacs. Polymorphonuclear neutrophile leucocytes, by C. H. Bunting. Eosinophile leucocytes and eosinophilia, by A. R. Ringoen. Mast cells, by Nicholas A. Michels. Lymphocytes and monocytes: theories of hematopoiesis, by William Bloom. Functions of the leucocytes, by C. H. Bunting. Blood platelets and megakaryocytes, by N. Rosenthal. Hemorrhagic diatheses: thrombocytopenia, thrombasthenia, capillary (hemorrhagic) toxicosis, hemophilia and

thrombocythemia, by N. Rosenthal. Supravital method of studying blood cells, by R. S. Cunningham and E. H. Tompkins. Application of supravital method to study of blood in pathological conditions, by Edna H. Tompkins and R. S. Cunningham. Evaluation of the supravital staining method, by Byron E. Hall. Volume II, Comparative hematology, by H. E. Jordan. Embryogenesis of mammalian blood, by William Bloom. Normal blood in infants and children, by Martha Wollstein. Reticulo-endothelial system, by R. H. Jaffé. Monocytic leucemia and leucemic reticulo-endotheliosis, by Hal Downey. Fibroblasts and histocytes, by William Bloom. The system of fixed histocytes in the liver, by Frank C. Mann and George M. Higgins. Lymphatic tissue; lymphatic organs, by William Bloom. Tissue cultures of blood and blood-forming tissues, by William Bloom. Volume III, The spleen, by Paul Klemperer. Hemolymph nodes, by Carl Vernon Weller. Normal bone marrow, by Florence R. Sabin and Franklin R. Miller. Bone marrow. Normal and pathologic physiology with special reference to diseases involving the cells of the blood, by Charles A. Doan. The myeloblast, by Hal Downey. Cytology of pathologic marrow cells with special reference to bone-marrow biopsies, by O. P. Jones. Myeloid metaplasia, by F. J. Lang. Classification of the anemias; blood pictures, and anemias of infancy and childhood, by Madeleine Fallon. Aplastic anemia and osteosclerosis, by N. Rosenthal. Pernicious anemia, by Cyrus C. Sturgis and Raphael Isaacs. Chronic hereditary hemolytic jaundice, by E. Meulengracht. Sickle-cell anemia, by Verne R. Mason. Ovalocytosis, by Verne R. Mason. Volume IV, Polycythemia, by George A. Harrop, Jr., and Maxwell M. Wintrobe. Pyrrol pigments, with particular reference to normal and pathologic hemoglobin metabolism, by C. J. Watson. Infectious mononucleosis, by Frank J. Heck. Heterophilic antibody reaction in infectious mononucleosis, by I. Davidsohn. Blood pictures of the infectious diseases occurring primarily in childhood, by Hugh W. Josephs. Action of benzol, Roentgen rays and radioactive substances on the blood and blood-forming tissues, by Laurence Selling and Edwin E. Osgood. Agranulocytosis and granulocytopenia, by N. Rosenthal. Leucocytosis, by Maurice N. Richter. Leucemia, by Maurice N. Richter. Leucemia in infants and children, by Stacy R. Mettler and William Palmer Lucas. Lymphosarcoma and leucosarcoma, by C. J. Watson. Index.

Note: These four volumes contain a critical digest of the international literature on hematology as well as conclusions and opinions of the authors, based on personal research in their various fields. The illustrations, particularly those done in color, are an important feature, as are the bibliographies appended to most of the sections. This work is intended for clinicians, pathologists, histologists, immunologists, pediatricians, and others.

FORKNER, CLAUDE ELLIS

Leukemia and allied disorders. New York: The Macmillan Company, 1938. 333 p. illus. (part col.) 24 cm. (Macmillan medical monographs, G. R. Minot, editorial advisor) \$5.00.

2244

Contents: Definition. Historical survey. Classification and terminology. Etiology. Transmission. Experimental production. Pathologic physiology. Systematic survey of the organs and organ-systems. Clinical aspects of acute leukemia. Clinical aspects of chronic leukemia. Leukemia in children. Pregnancy in leukemia. Monocytic leukemia. Subleukemic leukemia, pseudo-leukemia, leukanemia and related states. Erythroleukemia. Chloroma. Leukosarcoma. Leukemia of mature-cell type. Stem-cell leukemia. Eosinophilic leukemia. Basophilic leukemia. Plasma-cell leukemia. Megakaryocytic and megakaryoblastic leukemia. Mixed leukemia. Atypical leukemia. Leukemoid states. Spontaneous remissions. Reported cures. Treatment of leukemia. Bibliography. Index.

Note: A comprehensive survey of the subject, based on five thousand references, this work presents in simplified and consolidated form the various views, and a critical interpretation of the known facts in relation to what is unknown. Fundamental aspects of the etiology, pathologic physiology, and pathologic findings of leukemia are dealt with thoroughly before taking up the detailed clinical picture and hematologic features.

HADEN, RUSSELL LANDRAM

Principles of hematology. With 104 illustrative cases, and 167 illustrations including 173 original photomicrographs and 100 original charts and drawings. Second edition, thoroughly revised. Philadelphia: Lea & Febiger, 1940. 362 p. illus. (part col.) 24 cm. \$4.50.

2245

Contents (abridged): The blood. The hematopoietic system and blood formation. The erythrocyte and the erythropoietic system. Hemoglobin. The leukocytes and the leukopoietic system. The thrombocyte (platelet) and the clotting of blood. Technic of the blood examination. The mechanism of anemia and polycythemia. The mechanism of leukocytosis and leukopenia. The mechanism of abnormal bleeding. Treatment of anemia and polycythemia. Treatment of leukemia and leukopenia. Treatment of pathologic bleeding. The grouping of the blood disorders. Cases illustrating the classification of anemia based on the method of production. The macrocytic anemias. The hypochromic and microcytic anemias. The hemolytic anemias. The cryptic anemias. Pernicious anemia. The polycythemias. Cases.

Note: This work reflects the rapid advances of hematology in recent years and includes the more essential new methods for investigating the blood and the new clinical conceptions of the blood disorders. The purpose of this book is to simplify the study of these disorders for both the student and the physician. To this end, unusual and difficult technical methods have been purposely omitted and infrequent variations of the blood cells and rare blood dyscrasias have not been discussed. Several technical methods have been added and new developments, especially the role of vitamin K, have been included in this edition.

KRACKE, ROY RACHFORD

Diseases of the blood and atlas of hematology, with clinical and hematologic descriptions of the blood diseases, including a section on technic and terminology. Second edition, thoroughly revised, reset, and enlarged. Including 54 color plates and 46 other illustrations. Philadelphia: J. B. Lippincott Company, 1941. 692 p. illus. (part col.) 26 cm. \$15.00. 2246

Contents (abridged): I, Hematologic terminology; Principles. Definitions of terms. II, Development and morphology of blood cells: Origin and development. Morphology. Myeloblasts and myelocytes. Lymphocytes, monocytes and plasma cells. Erythroblasts, erythrocytes and thrombocytes. Supravital staining of leukocytes. III, Leukocytosis and leukopenia; Normal blood. Neutrophilic leukocytosis (neutrocytosis). Lymphocytosis, monocytosis, eosinophilia, and basophilia. The leukopenic diseases. IV, The anemias: Factors influencing erythropoiesis. Classification of anemias. Hemoglobin and derivatives and the porphyrin compounds. Hypochromic anemia. Idiopathic hypochromic anemia. Hemolytic anemias. Hemoglobinuria. Hemolytic jaundice. Hypochromic anemia of lead poisoning. Pernicious anemia. Diseases characterized by macrocytic anemia. Aplastic anemia. Sickle cell anemia. Anemias of childhood. V, The leukemias: The leukemic state. Chronic myelogenous leukemia. Chronic lymphatic. Acute. Monocytic. Atypical types. Treatment. VI, Hemorrhagic diseases: Mechanism and classification. Essential thrombocytopenic purpura. Hemophilia. Non-thrombopenic purpura. Vitamin K. VII, Miscellaneous: Infectious mononucleosis. Polycythemia vera. Bone marrow. Malaria. Hodgkin's disease. Blood groups and transfusions. Blood picture of normal laboratory animals. VIII, Hematologic technic. Index.

Note: This volume, based on experience gained in teaching hematology to medical students, is intended for use at the bedside, in the clinical laboratory, and in the research laboratory of hematology. The first edition was by Roy R. Kracke and Hortense Elton Garver. Contributors to the second edition include R. P. Custer, Lloyd F. Craver, W. Elizabeth Gambrell, and Francis P. Parker. In this edition new material is presented on fractionation of liver extract, the hemolytic anemias, hemoglobinuria, the action of drugs on the blood, hemoglobin and derivatives and porphyrin compounds, the bone marrow, osteosclerotic anemia, achrestic anemia, ovalocytosis, Hodgkin's disease, histoplasmosis. There are sections on the development of vitamin K, recent advances in the use of radiation and radioactive isotopes in the treatment of leukemia, and on blood transfusion, the operation of a blood bank, and the use of blood plasma.

MAGNER, WILLIAM

A textbook of hematology. Philadelphia: The Blakiston Co., 1938. 395 p. illus. (part col.) 23 cm. \$4.50. 2247

Contents: The cellular elements of the blood. The bone marrow—extramedullary hemopoiesis. The erythrocytes. Platelets. Leukocytes. Hemoglobin and its derivatives. Laboratory methods. The pathogenesis of anemia. Dyshemopoietic anemias. Post-hemorrhagic anemias—hemorrhagic diseases. Hemolytic anemias.

Polychthemia vera. The leukemias. Myelogenous, lymphatic and monocytic leukemias. References. Index.

Note: Discusses the origin and development of blood cells and the etiology of various blood diseases. It describes the clinical features of disorders of the hemopoietic system and the associated changes in blood and tissues, and presents a balanced account of the theory and practice of hematology of value to practicing physicians, students, laboratory workers, and teachers of medicine.

MURPHY, WILLIAM PARRY

Anemia in practice: pernicious anemia. Philadelphia: W. B. Saunders Company, 1939. 344 p. illus. (part col.) 24 cm. \$5.00. 2248

Contents (abridged): Classification, diagnosis and treatment of hypochromic anemias. Normocytic anemias. Pernicious anemia: Diagnosis. Present concept of physiology of blood formation and its relation to development of pernicious anemia. Liver therapy; effects. Comparative efficiency and cost of anti-pernicious anemia substance supplied as whole liver or an extract of liver. Prognosis. Incidence and etiology. Complications. Differential diagnosis. Practical management of the patient. Laboratory procedures. Transfusion of blood. Index.

Note: In this book effort has been made to emphasize the clinical pictures which may confront the practicing physician and to provide the doctor with the necessary data that will assist in making a definite diagnosis and instituting treatment. References to the literature are given at the ends of chapters. The illustrative material includes several charts and five original color plates showing the appearance of the blood in various types of anemia.

NYGAARD, KAARE K.

Hemorrhagic diseases; photo-electric study of blood coagulability. St. Louis: The C. V. Mosby Company, 1941. 320 p. illus. 25 cm. \$5.50. 2248a

Contents: Method of determining the coagulability of the blood. General considerations of the photo-electric principle. The photoelgraph. Physical and physiologic considerations of the photoelgraphic tracings. The fifth variable of the coagulgram. Experimental investigations of the coagulability of blood plasma. The interaction of thrombin and fibrinogen. The coagulative effect of thromboplastin, with particular reference to the quantitative estimation of prothrombin. Classification of hemorrhagic diseases. Hemophilia. Thrombocytopenic purpura. Vitamin K. The hemorrhagic tendency in diseases of the gall bladder, bile ducts, pancreas, or liver. Hemorrhagic disease of the newborn (hypothrombinemia, *hemorrhagica neonatorum*). Index.

Note: This monograph presents in the first part of the work an outline of various approaches to the measurement of blood coagulation and describes the photoelectric principle and its applicability to problems related to medical investigations in general, with further emphasis on the problem of blood coagulation in particular. A detailed analysis of factors influencing the velocity of blood coagulation, crystallizing in standardized methods of investigation, is also included. The second half of the book presents a fairly large clinical group comprising the main types of hemorrhagic diseases. Case histories and clinical data are used as a yardstick for evaluating the various methods of investigation. There are extensive bibliographies at the end of each chapter.

QUICK, ARMAND JAMES

The hemorrhagic diseases and the physiology of hemostasis. Springfield, Ill.: Charles C. Thomas, 1942. 340 p. illus. (part col.) 25 cm. \$5.00. 2249

Contents: History and general consideration of the coagulation mechanism. Thrombin. Prothrombin. Fibrinogen. Thromboplastin. Platelets. Anticoagulants—heparin. Thrombocytopenic purpura haemorrhagica. Hereditary hemorrhagic diatheses: pseudohemophilia and telangiectasia. Afibrinogenemia. Hemophilia. The hemorrhagic diathesis of avitaminosis K: obstructive jaundice, biliary fistula, and liver damage. The bleeding disease of the newborn, and toxic sweet clover disease. Classification of hemorrhagic diseases. Appendix: Determination of coagulation time. The skin bleeding time. The tourniquet test. Clot retraction. Platelet count. Determination of prothrombin. Assay of thromboplastin. Preparation and assay of thrombin. Assay of heparin. Determination of fibrinogen. Hippuric acid test for liver function. Index.

Note: The fundamental factors of the coagulation of the blood are presented and correlated with the general subject of hemostasis. Present day clinical knowledge of the important hemorrhagic diseases is summarized. Diagnosis and treatment of the various bleeding diseases are outlined. The main topic is the hemorrhagic diseases—not a treatise on blood coagulation. There are 24 illustrations and 9 tables.

WAUGH, THEODORE ROGERS

White blood cell differential tables. New York: D. Appleton-Century Company, Incorporated, 1943. 126 p. 18 cm. \$1.60. 2249a

Contents: The white blood cells. Enumeration of the leukocytes. The differential count. Use of the tables. Specific examples of use of the tables. The tables.

Note: These tables are designed to aid in computing rapidly the actual number per cubic millimeter of each type of white blood cell from the differential percentages. They are intended for the use of clinicians, pathologists, and laboratory workers. The introductory notes and description of their use are written in a very simple style for the benefit of less experienced workers and may be disregarded by trained technicians.

WEINMAN, DAVID

Infectious anemias due to Bartonella and related red cell parasites. Philadelphia: American Philosophical Society, 1944. 107 p. illus. 30 cm. (American Philosophical Society. Transactions. New series, Vol. 33, part III) \$1.25. 2250

Contents (abridged): Preface, by Ernest Edward Tyzzer. Introduction. Bartonella and human bartonellosis: Definition. History of the disease. Geographical distribution. Incubation. Clinical types: Oroya fever; verruga peruana. Intermediate and atypical clinical forms. Asymptomatic bartonellosis. Protistology. Epidemiology. Immunology. Therapy. Haemobartonella and animal bartonellosis: Description and affiliations of the haemobartonellae. The genus. The type species. *Haemobartonella muris* and the infectious anemia of rats. *Haemobartonella bovis, canis, microti, sturmani* of the buffalo, *tyzzeri* of the guinea pig. Haemobartonellae of undetermined specific rank. Haemobartonellalike structures in non-splenectomized mammals and cold-blooded animals. Eperythrozoon and the eperythrozoonoses: Description and affiliations. The genus. The type species. *Eperythrozoon coccoides, dispar, noguchii, ovis, perekropovi, wenyoni*. Eperythrozoon spp. and eperythrozoonlike structures. Public health aspects of bartonellosis: Importance of Carrion's disease. Present extent of bartonellosis. Epidemiological factors. Methods of protection and control. Conclusions.

Note: The studies reported in this monograph were undertaken because human bartonellosis has become an object of major concern in western South America. Causing at times alarming epidemics with high mortality, it is also established in widespread endemic centers. This paper presents a précis of pertinent and evaluated information, while deliberate emphasis has been placed upon those aspects of the problem which require additional investigation. A very extensive bibliography is supplied in which special attention has been directed to the South American literature. The monograph is intended for all persons interested in epidemiology, immunology, public health, and also research workers employing experimental animals.

WINTROBE, MAXWELL MYER

Clinical hematology. Illustrated with 167 engravings and 7 colored plates. Philadelphia: Lea & Febiger, 1942. 703 p. illus. (part col.) 24 cm. \$10.00. 2251

Contents: The origin and development of the cells of the blood in the embryo, infant and adult. The erythrocyte. The leukocytes. Blood platelets and coagulation. The blood as a whole. The principles and technic of blood examination. Anemia: general considerations and treatment. Pernicious anemia and related macrocytic anemias. The normocytic anemias. Hemolytic anemias. Hypochromic microcytic (iron deficiency) anemia. Anemia in infancy and childhood. Polycythemia. The purpuras. Hemophilia and other hemorrhagic disorders. Leukemia. Other tumors and tumor-like conditions involving the blood-forming organs. Agranulocytosis and infectious mononucleosis.

Note: This work brings together the accumulated information in the field. It describes the newer methods which are of practical value and outlines details of diagnosis and methods of treatment. Laboratory procedures which can be carried out in the office of the average physician are considered in detail.

WISCONSIN UNIVERSITY. MEDICAL SCHOOL

A symposium on the blood and blood-forming organs. Madison: The University of Wisconsin Press, 1939. 264 p. illus. 24 cm. \$3.50. 2252

Contents: Some historical aspects of hematology, by E. Meulengracht. The porphyrias and diseases of the blood, by Cecil James Watson. Aplastic anemia, by C. P. Rhoads. Anemias due to iron deficiency, by Clark W. Heath. Anemias of nutritional deficiency, by George R. Minot. The erythroblastic anemias, by Louis K. Diamond. Some etiological factors in pernicious anemia, by E. Meulengracht. The nature of hemolytic anemia, by Russell L. Haden. Experimental leukemia, by J. Furth. Monocytic leukemia and subleukemic (aleukocytic or aleukemic) leukemia, by Claude E. Forkner. The present status of Hodgkin's disease, by E. B. Krumbhaar. The reticulo-endothelial system, by Charles A. Doan. Hematologic and pathologic aspects of infectious mononucleosis, by Hal Downey. Polycythemia, by Paul Reznikoff. Marrow cultures, by Edwin E. Osgood. The present status of the blood coagulation problem, by Harry Eagle.

Note: This symposium on the blood and blood-forming organs makes available the papers given by distinguished representatives of leading medical schools and clinics in this country and abroad at an Institute held in Madison in September, 1939, under the auspices of the University of Wisconsin Medical School. They record experimental observations which have contributed significantly in recent years to the newer concepts of the etiology and therapy of the diseases under discussion. The conclusions are of interest and importance to medical investigators, teachers, clinical pathologists, practitioners, and others who desire authoritative information on etiologic, chemical, physiologic, pathologic, and therapeutic matters pertaining to the blood.

Cardiovascular and Renal Diseases

ABBOTT, MAUDE ELIZABETH SEYMOUR

Atlas of congenital cardiac disease. New York: The American Heart Association, 1936. 62 p. illus. 35 cm. \$5.50. 2252a

Contents (abridged): Development and comparative anatomy of the heart. Clinical classification of congenital cardiac disease: Group I, No abnormal communication (acyanotic group). Group II, Arterial venous shunt with terminal reversal of flow. Group III, Congenital cyanosis with permanent venous-arterial shunt.

Note: This volume consists of 25 plates made up of photographs, drawings, and diagrams, each occupying a full page, with a full page of explanatory text opposite. Four plates are devoted to embryology and anatomy. One plate has two pages of descriptive text relating to cardiac defects. Seven plates relate to Group I, four to Group II, and nine to Group III. A chart analyzing the statistics on 1,000 cases of congenital cardiac disease is included.

ADDIS, THOMAS, AND JEAN OLIVER

The renal lesion in Bright's disease. New York: Paul B. Hoeber, Inc., 1931. 628 p. illus. \$16.00. 2253

Contents: Introduction. Clinical methods. Clinical definitions. Clinical classification of Bright's disease in accordance with the nature of the renal lesion. Pathological methods. Pathological definitions. Clinical and pathological observations. Clinical summary and comparison of clinical and pathological data. Correlation of the clinical and pathological observations. A theoretical description of the course and sequence of the pathological processes in Bright's disease. A classification and theory of Bright's disease. References.

Note: The purpose of this monograph is to present a comparison of the clinical and pathological facts in Bright's disease in order to determine the degree of correlation between them. Methods for the determination of the nature and extent of the renal lesion during the lifetime of the patients are described. The original experimental basis of these methods is reviewed and the details of their clinical application to 72 cases, covering the various forms of the disease, are given. On the basis of the correlation of the clinical and pathological findings, a classification of the disease is suggested and a theory of its pathogenesis is outlined. The book is intended for physicians and pathologists.

ASHMAN, RICHARD, AND EDGAR HULL

Essentials of electrocardiography, for the student and practitioner of medicine. Second edition. New York: The Macmillan Company, 1941. 373 p. illus. 22 cm. \$5.50. 2254

Contents: The electrocardiograph, the measurement of the electrocardiogram, and artifacts. Relevant aspects of cardiac anatomy and physiology. The physical and physiological basis of the electrocardiogram. The normal human electrocardiogram and changes produced by disease. Chest leads and the effect of drugs. Disturbances of the cardiac mechanism. The electrocardiogram in diseases of the heart. Evaluation of the borderline electrocardiogram. Appendix. Bibliography. Index.

Note: A practical correlation of fundamental theory and authoritative applications, by a physiologist and an internist. In this edition the authors have considerably developed the theory and at the same time revised, amplified, and brought up to date all the practical material of the first edition. Thus, while retaining primary emphasis on electrocardiographic interpretation, this second edition also provides a thorough summary of the related aspects of cardiac physiology. The almost exhaustive list of criteria is based on more than 30,000 records. Much important new material on lead IV has been added, and this lead is shown in all the new electrocardiograms. This edition contains 62 new illustrations, making 123 in all. There are seven additional chapters.

BERGLUND, HILDING, AND OTHERS, EDITORS

The kidney in health and disease in contributions by eminent authorities, edited by Hilding Berglund and Grace Medes, with the collaboration of G. Carl Huber, Warfield T. Longcope, and Alfred N. Richards. Illustrated with 163 engravings. Philadelphia: Lea & Febiger, 1935. 774 p. illus. 24 cm. \$10.00. 2255

Contents: Anatomy and physiology. Clinical aspects of renal functions. Bright's disease and various other pathologic renal conditions. Albuminuria and edema. Ocular changes in Bright's disease. Clinical aspects of Bright's disease.

Note: This volume is the outgrowth of a symposium on the structure and function of the kidney in health and disease which took place in Minneapolis in the summer of 1930. This book represents the contributions to the symposium, amplified and revised by each of the contributors to cover the recent advances.

BURSTEIN, JULIUS

Illustrative electrocardiography. Originally written by the late Joseph H. Bainton and Julius Burstein. Second edition. New York: D. Appleton-Century Company, Incorporated, 1940. 292 p. illus. 17 cm. \$5.00. 2256

Contents: Fundamentals. The electrocardiogram in its normal variations. Disturbances of the pacemaker. Premature contractions. Tachycardias not of sinus origin. Auricular flutter and fibrillation. Ventricular fibrillation. Auriculoventricular block (heart block). Bundle branch block. T-wave abnormalities. The effect of digitalis on the electrocardiogram. Multiple abnormalities. Miscellaneous group. Artefacts on the electrocardiogram. Inferential pathology as disclosed by the electrocardiogram. The fourth and other precordial leads. Index.

Note: Intended for students and practitioners of medicine, the subject matter of this atlas has been arranged in a definite sequence. The fundamental principles of electrocardiography are presented first, followed by a series of plates displaying the normal electrocardiogram with variations which are within the normal range. The major portion of the book contains reproductions and diagnoses of more than 150 abnormal electrocardiograms. These records present progressive changes in the pathological physiology of the heart as demonstrated by the electrocardiogram. Each record emphasizes a single type of abnormality. The concluding chapters cover various types of graphic abnormalities and outside factors producing artificial distortions on the electrocardiogram. The second edition contains new material on chest or precordial leads, including standards or the American Heart Association for multiple precordial leads.

CHRISTIAN, HENRY ASBURY

The diagnosis and treatment of diseases of

the heart. New York: Oxford University Press, 1940. 579 p. illus. 25 cm. (Oxford monographs on diagnosis and treatment. Vol. III) \$7.00. 2258

Contents: Introduction. Diagnosis and treatment of acute endocarditis. Of acute myocarditis and of the circulatory failure of acute infectious diseases. Of acute pericarditis. Chronic pericarditis. Diagnosis of chronic cardiac valvular disease. Of chronic myocardial disease. Of cor pulmonale. Treatment of chronic cardiac valvular and myocardial diseases. Diagnosis and treatment of syphilis of the aorta. Of angina pectoris. Of cardiac infarction. Of the cardiac disturbances of thyroid disease. Of certain forms of arrhythmia. Of cardiac neuroses. Of congenital heart lesions. Of some rarer cardiac conditions. Pharmacological action of digitalis. Index.

Note: There is a voluminous annual literature on heart disease, and many nationalities have special journals limited to the publication of papers on cardiology. From these sources have been gleaned what seems most important and what will be most helpful to the practicing physician in his care of patients with circulatory deficiencies and defects. Into the discussion has been woven the experience of the author in his long period of activity as teacher, hospital physician, and consultant. Vegetative endocarditis, constrictive pericarditis, the therapy of chronic cardiac decompensation, angina pectoris, cardiac infarction, bundle branch block, besides the two new chapters, one on cor pulmonale, the other on more unusual cardiac lesions, are the topics that have been particularly rediscussed in the light of recently acquired knowledge.

DRESSLER, WILLIAM

Clinical cardiology, with special reference to bedside diagnosis, with 108 illustrations. New York: P. B. Hoeber, Inc., 1942. 692 p. illus. 24 cm. \$7.50. 2259

Contents: Introduction. The history: symptoms. Physical examination: signs. Electrocardiographic examination. Roentgenologic examination. Mechanisms of cardiac accommodation. Heart failure: physiology. Heart failure: clinical manifestations. Heart failure: treatment. Peripheral circulatory failure (shock, collapse). Angina pectoris. Pulsatory phenomena of the chest wall. Pulsations of the veins. Disorders of the cardiac rhythm. Fainting and syncope of cardiovascular origin. Rheumatic heart disease. Bacterial endocarditis. Pulmonary regurgitation. Cardiovascular syphilis. The heart in other infectious diseases. Pericarditis. Congenital heart disease. Arteriovenous fistula. Hypertension. Hypotension. Arteriosclerosis. Thrombosis and embolism. Dissecting aneurysm of the aorta. Angina pectoris of effort due to coronary stenosis. Myocardial infarction. Diseases of the myocardium. Heart disease due to disturbances of respiration. Heart disease due to disturbed function of the thyroid gland. The heart in vitamin B₁ deficiency. Cardiac neurosis. Traumatic heart disease. Heart disease in relation to marriage and pregnancy. Surgery and heart disease. Principles of diagnosis, prognosis and management of heart disease. Important points to remember. Index.

Note: Intended as a practical manual for general practitioner and internist, with special reference to bedside diagnosis, this book stresses clinical observations. Although the author is well known as an electrocardiographer, he believes that the achievements of clinical medicine must not be overlooked, and here lays particular emphasis on the techniques of physical diagnosis. Many simple methods of bedside diagnosis of heart disease are included.

DRY, THOMAS JAN

A manual of cardiology. Philadelphia: W. B. Saunders Company, 1943. 310 p. illus. 20 cm. \$3.00. 2260

Contents: Introduction. The normal heart and fundamental considerations of heart disease. What specific features should be looked for in order to make a diagnosis of heart disease. Cardiac murmurs, other heart sounds and diagnostic patterns of heart disease associated with murmurs. Abnormal pulsations helpful in diagnosis of cardiac disease. Alterations in cardiac size and cardiac contour. Disturbances of normal cardiac action including ectopic beats and ectopic rhythms. Significance and mode of production of abnormal electrocardiographic patterns. Congenital heart disease. Rheumatic heart disease including the rheumatic state and related diseases. Hypertensive heart disease. Coronary heart disease. The heart in certain metabolic states. Syphilitic heart disease. Pulmonary heart disease. Neoplastic involvement. Pericardial disease. General remarks on treatment in absence of decompensation. Congestive heart failure. Cardiac neurosis. Index.

Note: With the aim of simplifying heart problems for the physician and medical student, this manual has been planned so that the various disorders that produce similar disturbances of function and similar objective phenomena are grouped together, and features that distinguish these conditions from one another are, wherever possible, illustrated. Emphasis has been placed on the manner in which symptoms and signs are produced, and an attempt has been made to show what reasoning is involved in arriving at a practical diagnosis, what data should be included in determining the prognosis, and what factors should serve as a guide in the planning of treatment. Reference is made to sources that will prove helpful to those who wish to study certain principles in greater detail.

FISHBERG, ARTHUR MAURICE

Heart failure. Second edition, thoroughly revised. Illustrated with 25 engravings. Philadelphia: Lea & Febiger, 1940. 829 p. illus. 24 cm. \$8.50. 2261

Contents (abridged): The concept of circulatory failure and the cardinal circulatory syndromes. The cardiac output. The velocity of blood flow. The circulating blood volume. The arterial pressure and pulse; alternation of the pulse. The venous pressure and pulse. Exertional dyspnea. Paroxysmal dyspnea. Periodic breathing. Orthopnea. Cyanosis. Edema. The lungs: pulmonary engorgement, edema, infarction, and bronchopneumonia. The liver and spleen. The kidneys and urine. The central nervous system. Compensation of the heart. The mechanisms of heart failure. Murmurs due to functional valvular incompetence. Cardiac pain. Failure of the left side of the heart: the general picture. Hypertensive and arteriosclerotic heart disease. Valvular lesions. Heart failure initiated by insufficiency of the right side of the heart. Heart failure initiated by generalized cardiac strain. Hypodiastolic heart failure. Peripheral circulatory failure and shock. The treatment of heart failure. The treatment of the individual diseases with heart failure or angina pectoris. Treatment of peripheral circulatory failure and shock.

Note: This second edition contains much new material, including the introduction of quantitative methods for the measurement of some of the fundamental circulatory variables in health and disease, the elucidation of the manifestations of heart failure, and a better understanding of the dynamics of the diseased circulation. The author aims to interpret advances in clinical methods to the general practitioner in order that he may recognize, prevent, and treat cases of circulatory failure intelligently.

FISHBERG, ARTHUR MAURICE

Hypertension and nephritis. Fourth edition, thoroughly revised. Illustrated with 40 engravings and a colored plate. Philadelphia: Lea & Febiger, 1939. 779 p. illus. (part col.) 24 cm. \$7.50. 2262

Contents: Pathological physiology of renal function. Azotemia. Tests of renal function. Albuminuria and cylindruria. Edema. Uremia. Arterial hypertension: the measurement of blood pressure, the range of normal blood pressure and the occurrence of hypertension, pathological anatomy, pathogenesis. Hypertensive encephalopathy. The hypertensive retinopathies. The subdivision of Bright's disease. Benign albuminurias. The nephroses: Concept of nephrosis, the larval and necrotizing nephroses, chronic nephrosis, amyloid nephrosis. Acute glomerulo-nephritis: etiology, bacteriology, pathological anatomy and pathogenesis, clinical picture, diagnosis, prognosis and treatment. Chronic glomerulo-nephritis. Focal nephritis, acute interstitial nephritis and multiple glomerular embolization in subacute bacterial endocarditis. Essential hypertension: concept and pathological anatomy, etiology and clinical picture, diagnosis. Renal and hypertensive disease in pregnancy.

Note: Since the appearance of the previous edition of this work, the investigation of Bright's disease in almost all its phases has been both intensive and fruitful. To reflect the new knowledge in this edition, a radical revision of the text has been necessary. Many chapters have been largely rewritten and a new chapter on azotemia has been added. The work reviews the entire literature of the subject and summarizes all of the information, therapeutic and diagnostic.

GOLDRING, WILLIAM, AND HERBERT CHASIS

Hypertension and hypertensive disease. New York: The Commonwealth Fund, 1944. 253 p. illus. (part col.) 24 cm. \$3.50. 2263

Contents: Definition of hypertension. Clinical aspects of hypertensive disease. Systemic hemodynamic alterations in hypertension. Renal functional and renal hemodynamic alterations in hypertension. Function of the separate kidneys in hypertension. Role of a primary renal mechanism in the genesis of hypertension. Evaluation of medical and surgical treatment. The management of hypertensive disease. Blood pressure measurement: direct method. Cardiac output measurement. Peripheral resistance measurement. Methods for determining rate of glomerular filtration, effective renal plasma flow, maximal tubular excretory capacity, and maximal tubular reabsorptive capacity. Composite kidney function test. Functional and hemodynamic measurements in the separate kidneys. Presentation and discussion of renal functional data in hypertensive patients. Index.

Note: The authors present an up-to-date review of current information and concepts of hypertension and hypertensive disease. They clearly show that hypertension is a symptom and as such distinguish it from hypertensive disease. They interpret the hypertensive phenomenon in physiological terms, discuss the significance of blood pressure levels and the interpretation of kidney function tests, and point out the fallacies of many of the therapeutic procedures now in vogue. They have written primarily for the general practitioner and the medical student, but for the specialist they present in appendixes full information about the hemodynamic methods used in their study and their pioneer observations on the techniques and interpretation of methods for the measurement of renal blood flow, glomerular filtration rate, and maximal tubular excretory capacity in normal subjects and hypertensive patients.

HARRISON, TINSLEY RANDOLPH

Failure of the circulation. Second edition. Baltimore: The Williams & Wilkins Company, 1939. 502 p. illus. 23 cm. \$4.50. 2264

Contents: Historical review. Definitions. I, Forward failure: peripheral circulatory failure. Acute cardiac failure. II, Backward failure: General clinical considerations. Dynamics of congestive heart failure. Major phenomena of congestive heart failure. Minor phenomena of congestive heart failure. Prognosis and treatment of congestive heart failure. III, Mixed type of circulatory failure. IV, General circulatory disturbances without failure. V, Summary. Bibliography. Index.

Note: From intensive investigations of patients with diseases of the heart and from animal experimentation, the author of this book has come to place a somewhat different interpretation on some of the purely clinical features of cardiac disease, and the principal aim of this book is to present his point of view about this important subject. The methods he employed in investigating the subject were those of the physiologist and biochemist, but his interest and manner of attacking the problems have been entirely those of the clinician. Consequently the book will interest students and clinicians as well as specialists. Because the author is interested not so much in *what* happens as in *why* it happens, the usual approach to the subject from the standpoint of the various etiologic entities has been abandoned in favor of an analysis of the several major syndromes and the functional basis of each. This arrangement has been adhered to in general in the second edition. Some changes have been made, however. For example, the chapters on angina pectoris have been moved to the first major section because sudden death from this disorder represents the most acute type of forward failure of circulation, and the discussion of this disease has also been greatly amplified. Discussions of "cardiac syncope" and "cardiac collapse" have also been included.

HERRICK, JAMES BRYAN

A short history of cardiology. Springfield, Ill.: Charles C. Thomas, 1942. 258 p. illus. 22 cm. \$3.50. 2265

Contents: Introductory. Hippocrates to Harvey, 460 B.C.-1628. Harvey to Laennec, 1628-1819. Laennec to Virchow, 1819-1845. Virchow to Pasteur and Koch. Inflammation of the heart. Affections of the myocardium. Syphilis of the heart and aorta. The coronary artery and its diseases. A word as to prognosis. Index.

Note: In this brief history the author has written from the clinical rather than from the physiologic or experimental point of view, and it is his hope that the book may therefore prove interesting not only to the specialist in heart disease and general practitioner but also to the undergraduate. The period which has received most attention is that from Harvey to Roentgen, and while various phases of the subject are considered as related to certain periods and to certain countries, the discussions are in large measure centered about individuals who, because of their

personality, their important writings, or their influence on the development of knowledge, may properly be regarded as worthy of remembrance. Portraits are included of many of the men discussed, and in certain instances they are here reproduced for the first time.

HIGGINS, CHARLES CLAIR

Renal lithiasis. Springfield, Ill.: Charles C. Thomas, 1943. 140 p. illus. 19 cm. \$3.00. 2266

Contents: History of renal lithiasis, etiology. Symptomatology. Surgical treatment of renal lithiasis. Dietary treatment of renal lithiasis. Diets. Index.

Note: Modern knowledge of renal calculi, including the author's significant contributions, is presented in this concise, practical reference work. All phases of the subject are covered: etiology, symptomatology, diagnosis, technique of operative procedures, surgical and dietary treatment, tables of diets.

LEAMAN, WILLIAM GILMORE

Management of the cardiac patient. 255 original illustrations, two of which are in color. Philadelphia: J. B. Lippincott Company, 1940. 705 p. illus. (part col.) 23 cm. \$6.50. 2267

Contents: Approach to therapy. Heart failure. Problem of rheumatic heart disease. Pericarditis. Acute and subacute bacterial endocarditis. Syphilitic cardiovascular disease. Angina pectoris. Coronary artery disease including thrombosis. Hypertensive cardiovascular disease. Congenital heart disease. The heart in thyroid disease. Cardiac arrhythmias. Functional heart disease. Miscellaneous types. The heart in pregnancy. Allergy and the heart. Cardiac problems in surgical practice. The cardiac emergencies. Physiotherapy in the treatment of heart disease. Prescription of exercise. Diet. The senile heart. Social service in the treatment of heart disease. An introduction to the study of electrocardiography. Index.

Note: This volume, intended especially for the general practitioner, gives the essential facts in the management of the cardiac patient, and also the physical and laboratory methods of examination. Electrocardiography is described in the simplest terms possible. Emphasis is placed on the importance of classifying and treating heart disease according to its etiology and the functional capacity of the patient rather than in the light of the structural defect. Methods most useful in home treatment are given special consideration. Case-histories are used in presenting the subject, as a means of demonstrating the variations that occur in the different types of heart disease commonly encountered in office and clinic.

MAHER, CHAUNCEY CARTER, AND PAUL H. WOSIKA

616.12
2m2725
Electrocardiography. Third edition. Baltimore: The Williams & Wilkins Company, 1940. 334 p. illus. 26 cm. \$4.00. 2268

Contents: Clinical concepts of heart disease and the arrhythmias. The conductor system: The electrocardiograph. The electrocardiogram. Leads. Cardiac mechanisms (arrhythmias). Heart block. Ventricular conduction deformities. Axis deviation. The electrocardiogram in coronary disease. The effects of drugs on the electrocardiogram. Clinical syndromes and electrocardiographic diagnosis. Routine interpretation of electrocardiograms. Index.

Note: A treatise for the general practitioner, the medical student, and the specialist exclusive of the cardiologist, describing the value of the electrocardiogram in the diagnosis of cardiac disease, and presenting methods of correlating the electrocardiographic findings with clinical data. One hundred electrocardiograms are reproduced, accompanied by clinical diagnoses and interpretations. The third edition incorporates certain changes in technique such as the use of a fourth lead and serial tracings, the latter in acute coronary thrombosis.

MASTER, ARTHUR MORRIS

The electrocardiogram and X-ray configuration of the heart. Second edition, enlarged and thoroughly revised. Illustrated with 108 figures, containing 163 illustrations. Philadelphia: Lea & Febiger, 1942. 404 p. illus. 26 cm. \$7.50. 2269

Contents: Introduction. Method of taking teleoroentgenograms and electrocardiograms. The normal electrocardiogram. The normal teleoroentgenogram. The effect of age. The effect of respiration and change in body position on the electrocardiogram. Body habitus. Axis deviation and ventricular preponderance. Left ventricular enlargement and left axis deviation. Valvular disease of the heart. Symmetrical enlargement of the heart. Bundle-branch block and ventricular enlargement. Cardiac aneurysm. Congenital heart disease. Auricular enlargement (large P-waves). The heart in thyroid disease. Pericarditis. Pulmonary disease. Deformities of the chest. The heart in acute disease.

Note: This book is an atlas with the roentgenograms and electrocardiograms shown side by side. In this edition, new sections have been added to include tricuspid valve disease, the giant left auricle, myxedema, diodrast visualization of the cardiac chambers, and acute diseases. The sections on valvular disease, congenital heart disease, and pulmonary heart disease have been enlarged.

MOON, VIRGIL HOLLAND

Shock, its dynamics, occurrence and management. Illustrated with 36 engravings. Philadelphia: Lea & Febiger, 1942. 324 p. illus. 24 cm. \$4.50. 2270

Contents: Part I, Vascular dynamics of shock: The capillaries. Characteristic features of shock. Other characteristics—definition. Anoxia as related to shock. Theories concerning shock. Traumatic toxemia. Circulatory effects of tissue substances. Other proposed explanations. Similarities and distinctions between shock and the effects of hemorrhage. Sources of confusion. The pathology of shock. Effects of burns—heat and radiant energy. Shock in other conditions. Sub-lethal shock. Extrarenal uremia. Adrenal cortical insufficiency. Recapitulation. Part II, The prevention, recognition and management of shock: The prevention of shock. Prevention of absorption. Hemoconcentration. Early recognition and differential diagnosis. Therapeutic agents in treatment of shock. Transfusion and blood substitutes in the treatment of shock.

Note: A condensed practical treatise, in which is embodied much of the new information on diagnosis and treatment of shock.

MOULTON, FOREST RAY, EDITOR

616.1
1m38
Blood, heart and circulation. Publication committee: Malcolm H. Soule, chairman, Charles A. Doan, William F. Hamilton and others. Lancaster, Pa.: Published for the American Association for the Advancement of Science by the Science Press, 1940. 331 p. illus. 26 cm. (American Association for the Advancement of Science. Publication no. 13) \$4.25 2271

Contents (abridged): Prothrombin and thrombin, by H. P. Smith. Factors influencing the size and shape of the red blood cell, by R. L. Maden. Relation of porphyrins to erythroplasia, by C. J. Watson. Distribution of coronary blood flow, by G. K. Moe and M. B. Visscher. Views as to causes of coronary sclerosis, by M. C. Winternitz. Chest lead electrocardiogram in chronic cardiac anoxemia, by H. Feil. Failure of the heart versus weakness of circulation, by I. Starr. Circulation in hypertension, by J. M. Steele. Pressure relations in the pulmonary circuit, by W. F. Hamilton.

Note: The 39 papers in this symposium, contributed by 53 specialists, describe not only the diseases and treatment of the heart and circulatory system, but discuss the blood, heart, and circulation as physiological systems both in health and disease. They report on operational techniques and on the use of such instruments as the X-ray and the electrocardiograph in biological research. The authors' references to their own researches, and the citations included with each paper, constitute an extensive bibliography.

OCHSNER, ALTON, AND HOWARD MAHORNER

Varicose veins. With fifty text illustrations, two color plates. St. Louis: The C. V. Mosby Company, 1939. 147 p. illus. (part col.) 25 cm. \$3.00. 2272

Contents: History of treatment of varicose veins. Anatomy of veins of lower extremity. Pathology. Physiology. Etiology. Clinical aspects. Examination of patient. Treatment. Treatment of varicose ulcers. References. Index.

Note: In this volume the authors have attempted to evaluate the clinical studies on varicosities and methods of treatment—surgical and by injection, and to present briefly the most modern therapy. The indications and contraindications for active therapy, its failures, complications, and dangers are discussed. Statistical studies on the end-results of the various types of treatment and the marked improvement obtained by modifications of the original injection therapy are reported. The comparative tourniquet test devised by the authors is described under "examination." This book is intended for surgeons and clinicians, also for students of medicine.

OHLER, WILLIAM RICHARD

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The truth about Bright's disease. Cambridge: Harvard University Press, 1936. 80 p. 17 cm. (Harvard health talks. No. 19) \$1.00. 2273

Note: A brief presentation of the substance of a public health lecture delivered at Harvard Medical School, intended to enlighten the general public by giving a brief résumé of the known facts. Discusses the structure and function of the kidneys, the urine, the nature and scope of Bright's disease, proper diet and dietary management, uremic poisoning, dropsy, nephritis, together with treatment and prevention.

OLIVER, JEAN

Architecture of the kidney in chronic Bright's disease. With 112 illustrations including 5 color and 39 aquatone plates. New York: P. B. Hoeber, Inc., 1939. 256 p. illus. (part col.) 29 cm. \$10.00. 2274

Contents (abridged): Introduction. The two architectural units of chronic Bright's disease. Morphology of the abnormal nephron. Terminal Bright's disease: the aglomerular nephrons; transformation of the arterial system; factors responsible for the regressive alterations of the kidney parenchyma. Pattern of the kidney in Bright's disease. Epicrisis and prolegomenon.

Note: This book presents an amplification and extension of the author's work begun in 1930, the progress of which was reported in his Hektoen lecture of 1934 and in articles that appeared in the *Archives of pathology* during the course of 1933, 1934, and 1935. In this work he has attempted "an objective reconstruction in three dimensional form" of the nephritic kidney, which differs so markedly in its architecture from the normal organ, in the belief that structural concepts are essential for the understanding of natural phenomena and for progress in the clinician's study of disease. There is a descriptive letterpress facing each of the 39 aquatone plates. The book is intended for urologists and pathologists.

PAGE, IRVINE HEINLY

1936
Hypertension, a manual for patients with high blood pressure. Springfield, Ill.: Charles C. Thomas, 1943. 80 p. illus. 19 cm. \$1.50. 2275

Contents: The purpose of the book. The examination. The disease. The management of hypertension. Index.

Note: A book for the layman designed to tell him: (1) what high blood pressure is; (2) what can be done to relieve it; (3) how the hypertensive can live comfortably. The facts given by the author, who is an experienced physician, are accepted by most physicians. The book proposes to give the hypertensive "patient an insight into his illness that he may be spared some of the dismay and alarm and avoid the quackery that will await him on every side," and to guide him in a satisfactory way of living and to a happier outlook upon his daily existence.

PARDEE, HAROLD ENSIGN BENNETT

1933
Clinical aspects of the electrocardiogram including the cardiac arrhythmias. With 219 illustrations on 102 figures. Fourth edition, revised. New York: P. B. Hoeber, Inc., 1941. 434 p. illus. \$5.75. 2276

Contents: Introduction. The normal electrocardiogram. Hypertrophy of the chambers of the heart. Changes due to myocardial disease and functional abnormalities. Clinical significance of abnormal waves. Disturbances in rate or rhythm; their clinical aspects. Variations of the electrocardiogram resulting from disease and other abnormal influences. Theory of the electrocardiogram; recommendations on nomenclature. Description and operation of the electrocardiograph. Appendix: Determination of the direction and the manifest value of the vectors of the electrocardiogram. Method of filing and indexing records. Index.

Note: Advances in electrocardiography have necessitated many changes in this book since the appearance of its first edition in 1924. The differences in the record which result from changing the position of the precordial electrode, and also those resulting from changes in the position of the remote electrode are discussed. Condensed tables of the normal measurements of the waves by the most important precordial leads are included. Abnormalities of the waves produced by the various forms of myocardial disease, not only rheumatic disease and coronary arteriosclerosis but also the other less common diseases and metabolic disturbances, are studied. The chapter on the electrocardiographic diagnosis of cardiac arrhythmias has been expanded and a description of parastole and of electrical latencies has been included. The chapter dealing with theory has been almost entirely rewritten. The chart devised by Carter, Richter and Greene for determining the direction of the angle alpha from the recorded value in the limb leads has been reproduced. The amplifier tube instrument is described in the section on the string galvanometer. New illustrations have been added, and the bibliography has been edited and expanded. The book is intended for cardiologists and internists, but also for medical students, physiologists, and others interested in this subject.

REID, WILLIAM DUNCAN

Manual of cardiology; clinical methods and case histories as problems for study. New York: Oxford University Press, 1940. 364 p. illus. 22 cm. (Oxford medical publications) \$3.50. 2277

Contents: Section I, Clinical methods: The problem. Diagnosis: The history. Physical examination. Special examinations. Cardiac rhythms. Prognosis. Treatment. Prevention. Appendices. Section II, Case histories. Section III, Discussion of case histories: List of cases. Index to text. Index to case histories.

Note: A laboratory guide for use in undergraduate courses on the diseases of the heart, and helpful also to general practitioners who wish to refresh their knowledge of cardiac disorders. The main purpose is to aid the student in applying textbook material to actual cases. This is achieved by presenting 56 case histories for the student to diagnose and to recommend treatment. His answers are then checked with the author's own analysis of each case given in Section III, based on actual records.

ROESLER, HUGO

Atlas of cardiorenology. Springfield, Ill.: Charles C. Thomas, 1940. 124 p. illus. 34 cm. \$8.50. 2278

Note: This atlas stresses the changes in the form and structure of the heart, the great vessels, and the lesser circulation as revealed by the Roentgen ray. Many types of diseases are presented, but in particular the more common diseases of the heart are given prominence. The roentgenologic method is emphasized and fully integrated with such methods as electrocardiography, ophthalmoscopy, clinical and laboratory studies. The radiologic findings are correlated with the anatomic by means of a new method using longitudinal or window sections on the hardened specimen. Large-sized plate illustrations (237 illustrations on 166 figures) show essential details clearly. Sixty cases are an integral part of the book; of these 28 have been verified by postmortem examination, hence the data, furnished by the radiologic and postmortem studies, can be compared.

ROESLER, HUGO

Clinical roentgenology of the cardiovascular system. Second edition. Springfield, Ill.: Charles C. Thomas, 1943. 480 p. illus. 26 cm. \$7.50. 2279

Contents: Technique. Anatomy and roentgenology. Normal cardiovascular system, static. Measurement. Dynamics of the normal cardiovascular system. Anatomical—clinical—roentgenologic considerations. Cardiovascular disease from the viewpoint of etiology. Cardiovascular disease from the viewpoint of structural changes. Diseases of the aorta. Diseases of the pulmonary artery

and its branches. Pericardial disease. Congenital cardiovascular malformations. Disorders of cardiac rhythm, rate, contraction. Peripheral vascular disease. Index.

Note: This second edition has been enlarged by 137 pages and by 138 figures and is extended in scope, plan, and purpose over the first edition. The book begins with a practical evaluation of technique and apparatus used in roentgenoscopy, orthodiagraphy, roentgenography, cinematography, kymography, and vasography. The chapters on roentgenologic anatomy of the intra-thoracic cardiovascular system emphasize the topographical relationship of the cardiac chambers and great vessels. Alterations in the size and outline of the heart and great vessels are presented from the viewpoints of etiology and structural changes. The methods of measurements, their practical significance as well as their limitations, are discussed. The intricate dynamics are analyzed. The interrelation of clinical and roentgenological features is stressed and the various lung patterns in the presence of heart disease are evolved. Roentgenological aspects of the normal and diseased aorta and pulmonary arteries are clearly and thoroughly presented, including the diagnostic considerations of aneurysms. Extensive bibliographies are included.

SAMUELS, SAUL SIMON

The diagnosis and treatment of diseases of the peripheral arteries. Second edition. New York: Oxford University Press, 1940. 372 p. illus. 22 cm. (Oxford medical publications) \$6.50. 2280

Contents: General considerations. Symptoms of occlusive arterial disease in the extremities. Objective evidence of occlusive disease of the arteries of the extremities. Oscillometry. Thrombo-angitis obliterans. Arteriosclerosis obliterans. Raynaud's disease. Erythromelalgia. Periarteritis nodosa. Essential thrombophilia. Embolism. Cervical ribs and scalenus anticus syndrome. Thrombosis of the axillary vein. Frostbite. Ergotism. Glomus tumor. Aneurysm of the peripheral vessels. Medico-legal aspects of peripheral arterial disease. Indexes.

Note: A monograph offering scientific proof that a new viewpoint on the peripheral arterial diseases must be taken, and that amputations of limbs are no longer necessary or advisable. The author lays greatest stress upon the minute details of treatment and upon the necessity of intelligently correlating and combining various fundamental and proven procedures for the attainment of the best therapeutic results. The second edition contains new material on such subjects as embolism, arteriovenous aneurysms, glomus tumor, frost-bite, acrocyanosis, and other related diseases, while the section on arteriosclerotic and diabetic gangrene has been rewritten and enlarged. There are a large number of case histories illustrated with photographs.

SCHNITKER, MAURICE ARTHUR

The electrocardiogram in congenital cardiac disease; a study of 109 cases, 106 with autopsy. Cambridge, Mass.: Harvard University Press, 1940. 147 p. illus. 24 cm. \$3.00. 2281

Contents (abridged): Introduction: Historical and general considerations. The normal electrocardiogram in childhood. The acyanotic group: congenital heart block; congenital hypertrophy of the heart; dextrocardia and dextroversion cordis. The late cyanotic (cyanose tardive) group: defects of the interauricular septum; of the interventricular septum (Roger); patent ductus arteriosus (Botalli). The cyanotic group: pulmonary stenosis and associated lesions; tetralogy of Fallot; tricuspid valve disease. Some general considerations of congenital cardiac disease. Reference. Index.

Note: In this treatise the author has presented carefully collected data on a subject which is of increasing interest to internists, cardiologists, and pediatricians. Since the operation of ligation of the patent ductus arteriosus has been included among the possible methods of treatment, diagnosis of congenital cardiac disease has taken on new importance. This volume offers correlation of the electrocardiographic tracings with the specific type of lesion found at necropsy, together with a brief description of the clinical symptoms and roentgenological findings.

SIGLER, LOUIS HARRY

The electrocardiogram, its interpretation and clinical application. New York: Grune & Stratton, 1944. 403 p. illus. 23 cm. \$7.50. 2282

Contents: The foundations of the electrocardiogram. The recording of the heart current. The normal electrocardiogram. The electrical axis. The abnormal electrocardiogram: classification. Sinus tachycardia, bradycardia, arrest and arrhythmia. Premature contractions, extrasystoles, and ectopic beats. Displacement of the pacemaker. Circus movement theory. Paroxysmal tachycardia. Auricular flutter. Auricular fibrillation. Ventricular fibrillation. Heart block. Heart block: bundle branch. Other abnormalities in the electrocardiogram. The coronary circulation and its abnormalities. Acute coronary insufficiency. Ventricular preponderance. Myocarditis. Trauma of the heart. Electrocardiographic changes in various constitutional and toxic states. Effect of drugs and chemicals on the electrocardiogram. A study of the precordial leads.

Note: In this volume the author offers a directly practical and concrete exposition of the entire scope and application of electrocardiography. The significance and value of the electrocardiogram in relation to clinical cardiology and to general medicine are discussed. Separate chapters elucidate those phases of the anatomy, physiology, and pathology of the heart that underlie the interpretation of the electrocardiogram. The etiology and pathogenesis of the various disease states that produce abnormalities in the electrocardiogram are specifically described, and their physiologic mechanism is made plain in detailed differential discussion. Elaborate series of tracings with accompanying explanations supply full case records exemplifying the typical abnormal manifestations. A total of nearly 500 electrocardiograms from the author's clinical observation of twenty years is comprised in the groups of illustrations.

SMITH, LAWRENCE WELD, AND OTHERS

Cardiovascular-renal disease. A clinicopathologic correlation study emphasizing the importance of ophthalmoscopy, based on material awarded the Frank Billings Gold Medal at the scientific exhibit of the annual meeting of the American Medical Association, San Francisco, June, 1938. New York: D. Appleton-Century Company, Inc., 1940. 227 p. illus. (part col.) \$4.50. 2283

Contents: Part I, Hypertensive cardiovascular-renal disease: Clinical features. The ophthalmoscopic aspects of hypertension. General pathological considerations of cardiovascular-renal disease. Statistical data relating to morbidity and mortality of cardiovascular-renal disease. Part II, Essential hypertension (nephrosclerosis): Essential hypertension. Benign essential hypertension. "Severe" benign essential hypertension. "Malignant" hypertension and nephrosclerosis. Part III, Senile atherosclerosis (arteriosclerosis): Renal aspects. Part IV, Nephritis: Clinical considerations. Acute glomerulonephritis. Subacute and chronic glomerulonephritis. Part V, Nephrosis: Clinical features. Eclampsia. Pyelonephritis and essential hypertension. Part VI, Clinicopathological considerations: The place of the laboratory in the diagnosis and prognosis of cardiovascular-renal disease. Part VII, Appendices and Bibliography. Index.

Note: This monograph attempts to correlate all of the available technical information on pathological conditions involving the heart, kidneys, and blood vessels as an interrelated group, which according to actuarial records represent the chief cause of death in the individual past forty-five years. The work is based on the results of other investigators and previously published writings in the field, and upon statistical data from the Metropolitan Life Insurance Company's medical department. There are about 75 photomicrographs of pathological tissue, and over 300 bibliographic references.

SMITH, SAMUEL CALVIN

Heart patients; their study and care. Philadelphia: Lea & Febiger, 1939. 166 p. 20 cm. \$2.00. 2284

Contents: Treating the heart patient rather than treating the heart. The presenting complaints of heart patients. Surveying the patient's history. Conducting a physical examination of the heart. Laboratory aids in diagnosis. The heart as a barometer of the emotions. The irregular pulse and its clinical significance. Bradycardia and tachycardia. Concerning blood-pressure estimates. Endocardial conditions. Chronic valvular heart defects. Myocardial conditions. Concerning heart enlargement. Angina pectoris. Concerning coronary artery defects. Concerning nervous hearts. Cardiac syphilis. The heart in motherhood. The heart in childhood. What heart patients wish to know. Selecting nurses

for heart patients. Self-care for recovered heart patients. Pre-clinical stage of heart disease.

Note: This is a study of heart patients and their care and is a reflection of the author's experience covering twenty-five years of practice in this field. This work covers the modern trend in the treatment of heart patients. It is designed to be a guide and source of the latest information for the physician.

WHITE, PAUL DUDLEY

Heart disease. Third edition. New York: The Macmillan Company, 1944. 1025 p. illus. 24 cm. (Macmillan medical monographs) \$9.00. 2285

Contents (abridged): Part I, Examination, symptoms and signs: Range of normal heart. History, symptoms, signs. Inspection, etc. Auscultation. Sphygmomanometry. Roentgenology. Pulsion. Electrocardiography. Other methods. Part II, Incidence, causes and types of heart disease: Etiologic types. Congenital defects. Rheumatic disease. Bacterial endocarditis. Syphilis. Diphtheria, scarlet fever, tuberculosis, etc. Disease of thyroid and other glands. Hyper- and hypotensive disease. Pulmonary heart disease. Coronary thrombosis and myocardial infarction. Arteriosclerosis. Neurocirculatory asthenia. Psychoneuroses. Part III, Structural abnormalities: Importance, diagnosis, incidence. Myocardial, endocardial, valvular, pericardial, vascular disease. Part IV, Disorders of function: Importance, classification. Myocardial insufficiency, cardiac asthma, etc., and treatment. Disorders of vascular function, of cardiac rhythm. Coronary insufficiency. Auricular and ventricular fibrillation, quinidine therapy. Heart block etc. Appendices: Evolution of knowledge of the heart and its diseases. Classification of cardiovascular diagnoses. Addendum. Index.

Note: This book is intended for medical students, general practitioners, internists, and cardiologists, and is a comprehensive but concise survey of the etiology, pathology, diagnosis, and treatment of diseases of the heart and of those circulatory diseases having direct bearing upon cardiac function. The presentation is clinical in approach. A carefully selected bibliography is given with each chapter, subdivided by topics. An important addition in this revision of the book is a chapter on the range of the normal heart. Other additions include new sections on phonocardiography, precordial leads, ligation of the patent ductus arteriosus, treatment of subacute bacterial endocarditis, splanchic resection for hypertension; also sections on military service, gastrointestinal diseases and disorders, intracardiac thrombosis, pulmonary embolism and other vascular accidents throughout the body, circulation of blood, extreme tachycardia occurring paroxysmally in infants. Historical references which had been quoted in the first edition of the book but omitted in the second, have been restored in this edition, and others have been added. References to publications have been revised, with addition of selected new references. The illustrations have also undergone revision.

WILLIUS, FREDRICK ARTHUR, AND THOMAS E. KEYS, EDITORS

Cardiac classics; a collection of classic works on the heart and circulation, with comprehensive biographic accounts of the authors; fifty-two contributions by fifty-one authors. St. Louis: The C. V. Mosby Company, 1941. 858 p. illus. 25 cm. \$10.00. 2286

Note: In this volume a representative group of classics pertaining to the heart and circulation is presented, together with accounts of the lives of the authors and a comprehensive correlation of the influence of these classics on the development of cardiology. Selection was made on the basis of the contributions made to the development and progress of present-day cardiology. The period covered is from 1628 (William Harvey: *An anatomical disquisition on the motion of the heart and blood in animals*) to 1912 (James Bryan Herrick: *Clinical features of sudden obstruction of the coronary arteries*), and the articles deal with the anatomy and physiology of the heart and circulation, descriptions of disease, pathologic and therapeutic contributions, methods of diagnosis, etc. The book is intended for the medical student, the general practitioner, the cardiologist, and particularly for the teacher.

WILLIUS, FREDRICK ARTHUR

Cardiac clinics. St. Louis: The C. V. Mosby Company, 1941. 276 p. illus. 25 cm. (Mayo Clinic monographs) \$4.00. 2287

Contents: Signs and symptoms. Diseases of the pericardium. Rheumatic heart disease. Bacterial endocarditis. Cardiovascular syphilis. Hypertensive heart disease. Coronary disease. Thyroid disease. Congenital heart disease. Functional states. Disturbances of cardiac rhythm. Treatment and management. Historic excerpts. Miscellaneous topics. References. Indexes.

Note: The papers which make up this volume originally appeared in the *Proceedings of the staff meetings* of the Mayo Clinic over a period of years, and are here classified and arranged into certain main divisions. The greater proportion of the 80 papers presented consists of individual case histories on particular phases of heart disease, and each includes the patient's description, physical history, examination covering blood pressure, systolic and diastolic pressures, leukocytic counts, and electrocardiogram findings, followed by a diagnosis and general discussion, and, in most instances, by a sketch of the subsequent course of the disease.

WINTERNITZ, MILTON CHARLES, AND OTHERS

The biology of arteriosclerosis, by M. C. Winternitz, R. M. Thomas, and P. M. LeCompte. Springfield, Ill.: Charles C. Thomas, 1938. 142 p. illus. (part col.) 23 cm. \$4.00. 2288

Contents: Materials and methods. Embryological considerations. Anatomical and physiological considerations. Adaptive changes. The vascular pattern in the vessel wall. The relation of vascularity to disease of the vessel wall. Secondary changes within mural channels. Thrombosis. Heart valves. References. Index.

Note: This volume represents a report on investigations undertaken, with the aid of research funds of the Yale University School of Medicine and from the Josiah Macy, Jr., Foundation, to determine the causation of arteriosclerosis. The material presented deals primarily with interpretation of the morphology of arteriosclerosis, with emphasis upon the vascularity of the vessel wall and its relation to the disease manifestations of the intima. Evidence is offered for the interpretation of the inception of the processes, as well as for the various sequences that follow in its wake. A unifying concept which embraces many different manifestations of disease in the cardiovascular system including the arteries, veins, and heart valves is evolved. The numerous illustrations, partly in colors, add greatly to the value of the book. In many of them use has been made of methods to increase the translucency of tissues with clearing agents with excellent results. The book is intended for the clinician, the physiologist, and the pathologist.

Dermatology

BECKER, SAMUEL WILLIAM, AND MAXIMILIAN E. OBERMAYER

Modern dermatology and syphilology. With a section covering skin diseases prevalent in tropical climates. 484 illustrations in text, 32 full color plates. Philadelphia: J. B. Lippincott Company, 1943. 905 p. illus. (part col.) 26 cm. \$12.00. 2289

Contents: Dermatology: Introduction. Prenatal dermatoses. Toxic dermatoses. The neurodermatoses. The papulo-squamous eruptions. Atrophies and hyperplasias. Dermatoses due to physical agents. Pigmentary diseases. Trophic and deficiency diseases. Infections and infestations. Diseases of the cutaneous appendages. Diseases of the mucous membranes and muco-cutaneous junctions. Neoplasms. Industrial and occupational. Allergy in dermatology. Syphilis: History, nature, cause, transmission, early course, late course, prenatal, and diagnosis. Treatment. Tropical diseases. Index.

Note: A text and reference book covering in detail all aspects of dermatology and syphilology, intended for the student and practitioner of medicine but useful to graduate students and specialists as well. Diseases of the appendages are considered separately as are those of the mucocutaneous junctions and mucous membranes. Premalignant lesions are grouped together to emphasize their importance as precursors of neoplasms and are followed by a detailed treatment of the latter. The second half of the work presents a comprehensive view of syphilis as an infectious disease, and includes all information necessary for the practice of everyday syphilology by the general practitioner. At the beginning of each chapter explanatory material is offered in the style of the demonstrator to small groups of students. The

features of the book are the 32 illustrations in full color, which, as a series, give a complete clinical picture of all the important dermatoses. A new chapter on tropical diseases has been added to the 1943 printing of the book, covering infestations and infections by vermin, Protozoa, bacilli, fungi, and mixed organisms.

HARKINS, HENRY NELSON

The treatment of burns. Springfield, Ill.: Charles C. Thomas, 1942. 457 p. illus. 26 cm. \$6.50. 2290

Contents: The burn and its effects: Introduction. Pathology. Chemical changes in burns. Blood concentration following burns. Shock in burns. The role of the adrenals in burns. The role of fluid loss in burns. The role of toxins in burns. The role of bacteria in burns. Early complications of burns. Curlin's ulcer as a complication of burns. Late complications of burns. Treatment: General treatment and its relation to local treatment. Local treatment—i. Tanning method; local treatment. ii. Antiseptics; local treatment. iii. Saline baths; local treatment. iv. Other methods. Early plastic treatment. Late plastic treatment. Special burns: Regional burns. Electrical and radiation burns. Chemical burns. Freezing. Practical outline of burn treatment: First aid treatment in the home. First aid treatment by physicians. Hospital treatment. Appendix—war burns. Bibliography. Index.

Note: This comprehensive work on burn therapy covers recent discoveries and innovations in treatment. The role of the adrenals, of fluid loss, of toxins, of bacteria in burns are commented upon. Special types of burns, such as regional burns, electrical and radiation burns, war burns, chemical burns, freezing are discussed with full details. Clinical practices are correlated with experimental studies. The international literature of the subject is represented in the bibliography which includes 1320 selected references.

KNOWLES, FRANK CROZER, AND OTHERS

Diseases of skin, by Frank Crozer Knowles, Edward F. Corson, and Henry B. Decker. Fourth edition, thoroughly revised, with 272 illustrations. Philadelphia: Lea & Febiger, 1942. 621 p. illus. 24 cm. \$7.00. 2291

Contents: Anatomy and physiology: Embryonic development of the skin and appendages. Anatomy of the skin. Physiology of the skin. Symptomatology. Etiology. Pathology. Diagnosis. Types of lesions found in the common diseases of the skin. Regional distribution of the common skin diseases. Special methods of diagnosis. Treatment. Physical therapeutic methods. Hyperemias, hyperemias. Exudations, inflammations. Hemorrhages. Anomalies of pigmentation. Metabolic diseases. Atrophies. New growths and malformations. Neuroses. Diseases of the skin caused by vegetable organisms. Virus diseases. Animal parasitic diseases. Diseases of the appendages. Diseases of the mucous membranes. Acute eruptive fevers. Index.

Note: A complete revision was made for this edition. Twenty-seven topics have been added; new engravings are used, and many photographs have been replaced. The authors consider tropical skin diseases to be of increasing importance, and have enlarged their discussion on the topic. Sulfonamide drugs and vitamins are given fuller recognition for therapeutic value.

MCCARTHY, LEE

Diagnosis and treatment of diseases of the hair. With 291 illustrations including 7 in color. St. Louis: The C. V. Mosby Company, 1940. 671 p. illus. (part col.) 25 cm. \$9.50. 2292

Contents: Anatomy, physiology, and hygiene of the hair and scalp with a classification of the various diseases. Disturbances in pigmentation. Atrophies and hypertrophies of the hair. Inflammatory diseases of the hair follicles. Other diseases of the scalp which influence the development and structure of the hair. Relation of endocrine glands to distribution and growth of hair. Benign and malignant growths that may occur on the scalp. Index.

Note: The author states that one of his chief reasons for writing this book was a desire to help the physician to a better knowledge of all types of hair diseases so that a gullible public will not constantly be made the victims of hundreds of hair nostrums now so widely advertised. The book was written primarily for general practitioners and for students of dermatology, but it may serve also as a book of reference for dermatologists. Special emphasis has been placed on the differential diagnosis of the various diseases and their possible relationship to general health, and instructions are given in minute detail, especially in sections dealing with treatment of hair diseases.

MCCARTHY, LEE

Histopathology of skin diseases. With two hundred fifty illustrations, fifty-four in color. St. Louis: The C. V. Mosby Company, 1931. 513 p. illus. (part col.) 30 cm. \$15.00. 2293

Contents: Normal anatomy of the skin and its appendages. Normal and abnormal pigmentation. Atrophies, hypertrophies of the skin. Acute inflammation resulting in vesicle formation. Acute and chronic inflammations. Chronic specific inflammations. Tumors of the skin and mucous membranes. Precancerous dermatoses. Dermatomycoses. Skin manifestations in diseases of the blood and blood-forming organs. Index.

Note: In the preface of this book the author states that he has attempted to present the histological picture of the various skin diseases in agreement with the consensus of opinion of the different individuals who have studied them in detail, in other words, to give in abbreviated form the anatomical changes in skin diseases as accepted by the dermatologists throughout the world. Only in exceptional instances has he added his personal views. Under each heading a short clinical outline precedes the histological description in order to make the latter more comprehensible. The illustrations, exact reproductions of the changes seen in slides, are mostly the work of A. Bessin of Paris. They add greatly to the value of the book, which is designed for histologists, students, and practitioners of dermatology.

MARKOWITZ, MORRIS

Practical survey of chemistry and metabolism of the skin. Philadelphia: The Blakiston Company, 1942. 196 p. 20 cm. \$3.50. 2294

Contents (abridged): Part i. Chemistry of the skin. Part ii. Hematology. Part iii. Blood chemistry. Part iv. Vitamins in dermatoses.

Note: Presents a concise and practical discussion of the chemistry and metabolism of the skin. It includes practical sections on blood chemistry and on the hematopoietic changes related to cutaneous diseases. In addition, there is a section devoted to a study of the dermatologically related vitamins.

MASSACHUSETTS GENERAL HOSPITAL

Management of the Coconut Grove burns at the Massachusetts General Hospital. 49 subjects in color on 8 plates and 64 illustrations in black and white. Philadelphia: J. B. Lippincott Company, 1943. 171 p. illus. (part col.) 25 cm. \$4.00. 2295

Contents: The problem of the hospital administration, by Nathaniel W. Faxon. Social service activities, by Ida M. Cannon. Neuropsychiatric observations, by Stanley Cobb. Resuscitation and sedation of patients with burns which include the airway, by Henry K. Beecher. The pulmonary complications: a clinical description, by Joseph C. Aub and others. Roentgenologic report of the pulmonary lesions, by Richard Schatzki. Pathology, with special reference to the pulmonary lesions, by Tracy B. Mallory and William J. Brickley. The treatment of surface burns, by Oliver Cope. Problems of infection and chemotherapy, by Champ Lyons. Procedures in rehabilitation of the severely burned, by Bradford Cannon. A note on physical therapy, by Arthur L. Watkins. The problem of burn shock complicated by pulmonary drainage, by Oliver Cope and Frederick W. Rhineland. A note on the blood bank, by Lamar Soutter. A note on thrombophlebitis encountered, by Francis D. Moore. Metabolic observations. Protocols. Index.

Note: This collection of technical papers summarizes the medical treatment given to thirty-nine survivors of the Boston night club fire on November 28, 1942. The survey covers the details of lung burns, resuscitation, oxygen therapy, infection, plastic surgery, complications encountered, and treatment given. There are abridged case histories of each individual including condition on arrival, extent of burn, therapy, and length of treatment. Of the 39 treated, seven died in the hospital.

NATIONAL RESEARCH COUNCIL

Burns, shock, wound healing, and vascular injuries. Philadelphia: W. B. Saunders Company, 1943. 272 p. illus. 24 cm. (Military surgical manuals. Vol. v) \$2.50. 2295a

Contents: General treatment of patient with severe burn. Early local treatment of burned areas with reference to war injuries. Care of granulating surfaces; early plastic treatment. Skin grafting for contractures following burns. Burns in chemical warfare. Mechanism of shock; prevention and treatment. Fluid replacement therapy in shock. Factors in healing and sequence of events. Traumatic wounds. Scheme for treatment of hemorrhage. Injuries of large arteries. Injuries of arteries in special locations. Diseases of arteries and veins. Index.

Note: The discussion of burns was prepared by David P. Barr, James Barrett Brown, Henry N. Harkins, Conrad R. Lam and Roy D. McClure; the discussion of shock was prepared and edited by the Subcommittee on Shock; the discussion of wound healing was prepared by Allen O. Whipple; and the discussion of vascular injuries was prepared and edited by the Subcommittee on Vascular Injuries; all under the auspices of the Committee on Surgery of the Division of Medical Sciences of the National Research Council, Washington, D.C., in cooperation with the Surgeons General of the United States Army and Navy. Each section of this manual deals with problems important in both military and civilian practice. Emphasis is, of course, on military aspects since it was for this purpose that the manual was written. The section on burns contains data on the use of sulfonamides, complications, and burns resulting from the use of such gases as mustard, lewisite, and ethyldichlorarsine. There are 227 illustrations on 82 figures.

NATIONAL RESEARCH COUNCIL

Manual of dermatology. Philadelphia: W. B. Saunders Company, 1942. 421 p. illus. 24 cm. (Military medical manuals) \$2.00. 2295b

Contents: Practical directions for use of manual. Diagnosis based on primary and secondary lesions and on the history. Diagnosis based on distribution. Diagnosis of eruption of commonly involved sites. Principles of local treatment. Eczema-dermatitis. Fungous infections. Pyodermas. Acne, vulgaris, acne-form, eruptions, and rosacea. Common papulosquamous eruptions. Common bullous and vesicular eruptions (exclusive of eczema). Erythema multiforme, toxic erythemas, and infectious exanthems. Urticaria, including giant hives or angioneurotic edema. Drug eruptions. Parasitic infestations. Benign and malignant tumors. Penile lesions. Sunburn and its prevention, excessive sweating, pruritus of various types. Appendix. Index.

Note: This manual was prepared under the auspices of the Committee on Medicine of the Division of Medical Sciences of the National Research Council, Washington, D.C., in cooperation with the Surgeons General of the United States Army and Navy. It was written by Donald M. Pillsbury, Marion B. Sulzberger, and Clarence S. Livingood. Its purpose was to supply medical officers of the armed forces with the essential diagnostic and therapeutic knowledge needed in caring for personnel. It has wide application, however, to the needs of the civilian physician and will be useful also to the medical student. The entire manual may be said to be streamlined since the authors' objective has of necessity been to enable the physician to diagnose quickly and accurately and then to institute therapy. Special emphasis is on treatment, both simplified and hospital measures. Prescriptions, etc., are indicated by number under the disease considered, these numbers referring to formularies at the end of the book where each treatment is given along with indications and contraindications. "Do's" and "don'ts", cautions, suggestions, and other aids are given in tabular form for quick reference. There are nearly 100 illustrations, most of them showing pathology.

ORMSBY, OLIVER SAMUEL, AND HAMILTON MONTGOMERY

Diseases of the skin. Sixth edition, thoroughly revised. With 654 figures containing 723 illustrations and 6 colored plates. Philadelphia: Lea & Febiger, 1943. 1360 p. illus. (part col.) \$14.00. 1947 2296

Contents (abridged): Anatomy and physiology of the skin. Chemistry. General symptomatology, etiology, pathology, diagnosis, prognosis, therapeutics. Diseases of the skin: Hyperemias and inflammations. Hemorrhages. Hypertrophies. Atrophies. Pigmentary affections. Diseases of metabolism. Neoplasms. Chronic specific inflammations. Neuroses. Parasitic affections. Diseases of the appendages. Index.

Note: The initial chapters of this textbook are considered by the authors to form an essential introduction to the latter portion, since they serve to orient the student in the special terminology employed and to provide him with a foundation in respect to physiological and pathological processes, special diag-

nostic methods, a knowledge of drugs, chemicals, radiotherapy, and other therapeutic measures, etc. In the second portion of the book each disease condition is considered under the customary headings. The book is well illustrated throughout, many new engravings having been added in this edition. Previous editions had the title, *A practical treatise on diseases of the skin, for the use of students and practitioners*. In this edition a large number of diseases have been regrouped, the section on general chemistry and the classification of diseases of metabolism has been added, much obsolete material has been eliminated, and 22 diseases not previously described in the text have been included. Bibliography is given in the form of footnotes.

ROBINSON, HARRY MAXIMILIAN

Practical dermatology and syphilis. Philadelphia: The Blakiston Co., 1939. 397 p. illus. 22 cm. \$4.50. 2297

Contents: Introduction. Syphilis. Macular conditions. Papular conditions. Pustular conditions. Conditions involving the scalp and bearded areas. Conditions involving the mouth. Sweat disturbances. Conditions involving the nails. Annular lesions. Conditions with scars and atrophy, etc. Ulcer conditions. Excoriation dermatoses. Index.

Note: Intended for the use of beginning students in dermatology. It gives a clear description of each disease and discusses the best methods of diagnosis and treatment.

SULZBERGER, MARION BALDUR, AND JACK WOLF

Dermatologic therapy in general practice. Second edition, revised and completely reset, 1942. Chicago: The Year Book Publishers, Inc., 1942. 632 p. illus. 21 cm. (The General practice manuals) \$5.00. 1940 2298

Contents: General dermatologic management; principles of diagnosis; principles of topical medication; principles of other measures. Eczematous dermatoses. Urticaria. Atopic dermatitis. Dermatoses due to fungi: superficial fungous affections of glabrous skin; fungous affections of hairy areas, hairs and nails. Acneiform dermatoses. Pyodermas. The sulfonamides in dermatology. Psoriasis and seborrheic dermatitis. Bullous and vesicular dermatoses. Zoonoses. Common tumors of the skin. Miscellaneous dermatoses; lupus erythematosus; lichen, pityriasis; pruritus. Drug eruptions. Miscellaneous skin disorders. Early syphilis. Other forms of syphilis. Subject index.

Note: An office manual for general physicians on the treatment of common skin diseases. Though the text is confined to therapy, diagnosis and differential diagnosis are covered by means of plates illustrating dermatoses that are often misdiagnosed. Only therapeutic procedures which general physicians can apply are described, and more than 200 prescriptions are included, with data on each. In the second edition—to which Rear Admiral Ross T. McIntire, Surgeon General of the U. S. Navy, has contributed a foreword—there have been added a chapter on sulfonamide therapy in dermatology; data on the techniques of massive-dose therapy of early syphilis, including slow and rapid intravenous drip methods and massive-dose ambulatory treatment, etc., and sections on treatment of burns, and of injuries from chemical warfare.

SUTTON, RICHARD LIGHTBURN, AND RICHARD L. SUTTON, JR.

Diseases of the skin. With 1452 text illustrations and 21 color plates. Tenth edition, revised, enlarged and reset. St. Louis: The C. V. Mosby Company, 1939. 1549 p. illus. (part col.) 26 cm. \$15.00. 2298a

Contents (abridged): Anatomy. Embryology. Physiology. General etiology. General symptomatology and pathology. General diagnosis. Treatment. Classifications: Inflammations. Purpuras. Metabolic dermatoses. Atrophies. Neuroses. Anomalies of pigmentation. Malformations. New growths. Virus diseases. Diseases due to bacteria. Diseases due to higher fungi. Diseases due to animals. Diseases particularly affecting the cutaneous appendages. Diseases of mucosae adjoining the skin.

Note: A standard text on the diagnosis and treatment of skin diseases. This edition has been greatly expanded to include descriptions of many unusual dermatoses and significant advances made in the field since the publication of the previous edition four years earlier. It is useful to the general practitioner as well

as the dermatologist, emphasis being placed on the practical treatment of commonly encountered skin conditions. The same publisher offers a condensed version by the authors entitled *Synopsis of diseases of the skin*, 1942, 481 p. \$5.50.

SWARTZ, JACOB HYAMS, AND MARGARET GILSON REILLY

Diagnosis and treatment of skin diseases, including the care of the normal skin. New York: The Macmillan Company, 1935. 316 p. illus. 22 cm. \$3.75. 2299

Contents: General considerations. Care of the normal skin. Nursing care of the baby's skin. Care of the abnormal skin. Suggestive curriculum and outline of study course in dermatology for nurses. Common skin diseases involving the scalp; the face; the extremities. Exanthemata. Syphilis. Therapeutic agents and laboratory data. Index.

Note: Concise presentation of the diseases of the skin, their treatment and their nursing care for nurses and general practitioners of medicine. Diagrams for the purpose of differential diagnosis are given.

TOBIAS, NORMAN

Essentials of dermatology. Second edition. Philadelphia: J. B. Lippincott Company, 1944. 497 p. illus. 20 cm. \$4.75. 2300

Contents: Basic survey. The erythema group. The eczema group. Drug eruptions. Psoriasis. The toxic bullous diseases. The pyoderms. Diseases due to vegetable parasites. Diseases due to animal parasites. Diseases due to filtrable viruses. Diseases due to psychic and nervous disorders. Lichen planus. Diseases due to physical agents. The deep infective dermatoses. Tuberculosis of the skin. Syphilis. Benign tumors of the skin. Malignant growths of the skin. The metabolic dermatoses. The atrophies of the skin. Scleroderma and allied diseases. The vascular diseases of the skin. Pigmentations. The cutaneous lymphoblastomas. The erythrodermias. Diseases of the hair and scalp. Diseases of the sebaceous glands. Diseases of the sweat glands. Diseases of the nails. Diseases of the mucous membranes. Congenital disorders. Dermatologic therapeutics. Index.

Note: Intended for the general practitioner and the medical student who desire a brief, handy reference volume on the subject of dermatology. Histologic descriptions and theoretic considerations have been reduced to a minimum, while differential diagnosis has been stressed and diagnostic features emphasized. The classification of the various types of dermatoses used in this book is based on the clinical, pathologic, and etiologic concepts accepted at the present time. Each disease is discussed from the standpoint of internal medicine, and prognosis, treatment, and prevention are indicated. The second edition contains new material on vitamin and sulfonamide therapy, new ointment bases, several new dermatoses, and additional photographs.

WARREN, LEON HUGH

Handbook of skin diseases. With a foreword by Frederick D. Weidman. New York: P. B. Hoeber, Inc., 1940. 321 p. 19 cm. \$3.50. 2301

Contents: Introduction. General principles of therapy. Synopsis of skin diseases (listed alphabetically). Index.

Note: In this handbook the salient features of the skin diseases have been set forth as briefly as possible; derivation of the name, synonyms and eponyms are given; lines of treatment rather than formulae are indicated, and emphasis is placed upon the internal medical rather than the purely morphologic or surface aspects; diagnostic features, histopathology, and differential diagnosis are included. The purpose of the book is to serve as a convenient aid to the memory, and it is intended for student, physician, specialist, and teacher of dermatology.

WRIGHT, CARROLL SPAULDING

Manual of dermatology. Philadelphia: The Blakiston Company, 1940. 376 p. illus. 20 cm. \$4.00. 2302

Contents (abridged): Anatomy and physiology of the skin. Infections of the skin. Rare infections of the skin. Tuberculosis of the skin. Diseases due to vegetable parasites, animal parasites, filterable viruses. Hyperemias. Exudations, inflammations. Dermatitis and eczema. Erythematopapular and squamous eruptions.

Hypertrophies and tumors. Pigmentary changes in skin. Hemorrhages. Anomalies of sebaceous and sweat glands. Diseases affecting the hair. Neuroses and pruritis. Diseases of the nails, mucous membranes. Index.

Note: This manual presents the subject with emphasis upon those dermatoses which make up the bulk of skin diseases seen in general practice. The author includes a brief discussion of the less common conditions. Under each condition brief paragraphs are given on synonyms, definitions, symptoms, pathology, diagnosis, prognosis, and treatment. A large number of up-to-date prescriptions, the value of which have been proven in practice, is an important part of the section on treatment.

YEAR BOOK OF DERMATOLOGY AND SYPHILOLOGY

The 1944 Year book of dermatology and syphilology. Edited by Marion B. Sulzberger and Rudolf L. Baer. Chicago: The Year Book Publishers, Inc., 1944. 544 p. illus. 18 cm. \$3.00. 2302a

Contents: Introduction. Skin tests and other immunologic procedures in common dermatologic and venereal diseases. Therapy (exclusive of venereal diseases). X-ray and other physical therapy. Eczematous dermatitis and urticaria (allergic and nonallergic). Allergy. Drug eruptions (allergic and nonallergic). Miscellaneous hematogenous dermatoses. Other dermatoses. Cancers. Precanceroses. Other tumors. Mycosis fungoides and Hodgkin's disease. Fungous infections. Other infections. Venereal diseases (exclusive of gonorrhea): Syphilis. Venereal diseases other than syphilis and gonorrhea. Public health and venereal disease control. Investigative studies. Miscellaneous. Subject index. Index to authors.

Note: Progress in dermatology and syphilology is summarized each year in this illustrated digest of the international periodic literature of these specialties. The present volume contains about 400 abstracts from the clinical and scientific journals arranged to form a continuous descriptive account under each of the specific disease headings. Over 300 diagnostic and therapeutic procedures are detailed in these accounts, many of which are followed by the editors' suggestions identified by smaller type. The 1944 volume contains new material on dermatoses from military medical records. There are references to the literature in footnotes and supplementary bibliographies at the end of each chapter.

Otolaryngology

BALLENGER, HOWARD CHARLES

A manual of otology, rhinology and laryngology. Illustrated with 90 engravings and 4 color plates. Second edition. Philadelphia: Lea & Febiger, 1943. 334 p. illus. (part col.) 24 cm. \$4.00. 2303

Contents: The nose and accessory sinuses. The pharynx and fauces. Diseases of the larynx. The ear.

Note: This book is based on the larger and more comprehensive Ballenger's *Diseases of the nose, throat and ear*, seventh edition, described below. All accepted general and local treatments are included, but unnecessary theories and surgical technique have been omitted. Radical changes in arrangement and text occur in this edition, including a new chapter covering foreign bodies in the air passages and the technique for trachiotomy. The book is designed primarily for student nurses and general practitioners.

BALLENGER, WILLIAM LINCOLN, AND HOWARD CHARLES BALLENGER

Diseases of the nose, throat and ear, medical and surgical. Illustrated with 604 engravings and 27 plates. Eighth edition, thoroughly revised. Philadelphia: Lea & Febiger, 1943. 975 p. illus. (part col.) 24 cm. \$12.00. 2304

Contents: The nose and accessory sinuses. The pharynx and fauces. Diseases of the larynx. The ear. Bronchoscopy.

Note: This edition of this text has been revised by the author's son, Howard Charles Ballenger, who has rearranged, rewritten, and considerably expanded the material. Several specialists have

contributed articles in their individual fields. Based on a broad clinical viewpoint, this is a book for the general practitioner as well as the specialist.

BUNCH, CORDIA C.

Clinical audiometry. With seventy-four text illustrations. St. Louis: The C. V. Mosby Company, 1943. 186 p. illus. 25 cm. \$4.00. 2305

Contents: The heritage of the tuning-fork tests. The modern audiometer. Technic of audiometric tests. The soundproof room: its construction and use in audiometry. Conductive-type deafness. Perceptive-type deafness. The use of the audiometer in selecting a hearing aid. The use of residual hearing. Historical: the development of the audiometer. Appendix. Index.

Note: A manual for the otologist and medical student specializing in otology which is designed mainly to supplement individual instruction and supervised practice in the use of the audiometer. A knowledge of the mechanics of the instrument is assumed and only the actual test methods are outlined. Psychological factors are emphasized and the need for special soundproof construction of testing rooms is discussed. Numerous case records are summarized and illustrated with reproductions of audiograms or graphs showing pitch of test sound vs. hearing loss in sensation units.

FABRICANT, NOAH DANIEL

Nasal medication, a practical guide. Baltimore: The Williams & Wilkins Company, 1942. 122 p. illus. 22 cm. \$2.50. 2306

Contents: Anatomy of the nasal cavity and sinuses. Nasal and sinus mucous membranes. Nasal physiology. Effect of drugs on ciliary action, nasal pH, and mucous membrane. Methods of applying nasal medication. Nasal medication in disease. Nasal medication in children. Index.

Note: A book for the practicing physician giving the fundamental anatomy and physiology of the nose and nasal sinuses and the methods and uses of nasal medication in the treatment of disease conditions related to this field. Of interest as well to ear, nose, and throat specialists.

FISCHER, JOSEPH, AND LOUIS E. WOLFSON

The inner ear, including otoneurology, otosurgery, and problems in modern warfare. New York: Grune & Stratton, 1943. 421 p. illus. (part col.) 23 cm. \$5.75. 2307

Contents (abridged): Clinical anatomy. General physiology. Applied physiology: spontaneous manifestations; induced reactions. Functional tests: spontaneous manifestations; induced reactions; evaluation of abnormal reactions; differentiation of peripheral and central lesions. Primary diseases of the labyrinthine capsule: otosclerosis. Inflammatory diseases of the inner ear: lesions of the labyrinth; inflammation of the petrous pyramid. Intracranial labyrinthogenic complications. Chemotherapy. Facial palsy. Congenital diseases. Neoplasms. Vascular lesions: Ménière's syndrome. War trauma. Role of the inner ear in aeronautics. Effects of atmospheric pressure changes on the ear. Index.

Note: This treatise on the labyrinth and its central pathways was written in order to bridge a gap which the writers felt existed between the ordinary textbooks which deal with the subject in a brief and elementary way, and encyclopedias and handbooks of anatomy, physiology, neurology, etc., which go too deeply into details. It was written with a view to the needs of two types of students: older otolaryngologists with clinical experience and skill who wish to keep pace with current progress in theory and research, and younger physicians who have much theoretic knowledge but little clinical experience. Because of this twofold purpose, every topic is discussed twice—in the chapters on physiology, where theories and hypotheses are stressed, and again in the chapter on functional tests, where the viewpoint is clinical. Recent important contributions in this field are reviewed. The last three chapters dealing with subjects related to the war form timely contributions.

JACKSON, CHEVALIER, AND CHEVALIER L. JACKSON

Diseases and injuries of the larynx, a textbook for students and practitioners, with over 200 illustrations including 11 plates in color. Second

edition revised and reset. New York: The Macmillan Company, 1942. 633 p. illus. (part col.) 24 cm. \$8.00. 2307a

Contents: Anatomy and physiology of the larynx. Etiology; symptomatology; diagnosis and treatment; general considerations. Anomalies and malformations, congenital and acquired. Dysphonia plicae ventricularis. Noninflammatory edema of the larynx. Dislocations, wounds and fractures. Acute inflammatory diseases. Chronic laryngitis. Contact ulcer. Arthritis. Perichondritis. Acute and chronic stenosis. Pachydermia. Syphilis. Tuberculosis. Mycoses and other chronic infections. Laryngeal phases of general diseases; dermatoses; drugs. Neuroses and neuroneses. Disorders more or less associated with innervation. Benign tumors. Borderline tumors. Malignant diseases. Endolaryngeal procedures. Endolaryngeal operations. External operations for laryngeal stenosis. Operations for malignant diseases. War surgery. References. Index.

Note: A comprehensive study of all conditions of the larynx and their treatment, operative and non-operative, for students and practitioners of medicine. Specific details of the authors' own methods of treatment are given, and directions for the selection of the best treatment in each particular case. Many of the illustrations (some of which are in color) are drawn from real life by the authors themselves. The first edition, published in 1937, was entitled: *The larynx and its diseases*.

KEELER, JOSEPH CLARENCE

Modern otology. 90 original illustrations and 15 colored plates. Philadelphia: F. A. Davis Company, 1930. 858 p. illus. (part col.) 24 cm. \$5.00. 2307b

Contents (abridged): Anatomic and physiologic considerations. Aural examination. Deformities and diseases of the external ear. Diseases of the membrana tympani. The eustachian tube. Diseases of the middle ear. Affections of the mastoid. Intracranial complications of aural disease. Diseases of the internal ear. Otosclerosis and chronic progressive deafness. Otology in children. The medico-legal aspects of otology. Index.

Note: A textbook for medical students and a reference work for the general practitioner covering the anatomy and pathology of the ear and related structures. Diseases are discussed in detail and medical and surgical treatment outlined and illustrated. There are extensive bibliographies at the end of each of the twelve sections into which the book is divided. The author was active for more than a quarter century previous to the publication of this work in the development of the science of otology and had performed more than a thousand mastoid operations.

LEDERER, FRANCIS LOEFFLER

Diseases of the ear, nose and throat; principles and practice of otorhinolaryngology. Fourth edition. Illustrated with 730 half-tone and line engravings on 463 figures and 18 full-page color plates. Philadelphia: F. A. Davis Company, 1943. 894 (i.e. 900) p. illus. (part col.) 26 cm. \$10.00. 2308

Contents (abridged): Diseases of the ear. Diseases of the nose and sinuses. Diseases of the pharynx. Diseases of the larynx, trachea, bronchi, and esophagus. Correlated considerations. Index.

Note: A reference work for the student and general practitioner. An effort has been made to meet the needs of teachers and specialists, resulting in a treatment which is exhaustive in essentials. The large number of illustrations is of especial value in the visualization of anatomic, diagnostic, and therapeutic problems. The fourth edition incorporates new data from knowledge gained during World War II, including new case histories, new methods of diagnosis and treatment, and new illustrations.

LEDERER, FRANCIS LOEFFLER, AND ABRAHAM R. HOLLENDER

Textbook of the ear, nose, and throat. 170 illustrations. Philadelphia: F. A. Davis Company, 1942. 595 p. illus. (part col.) 25 cm. \$6.00. 2309

Contents (abridged): Changing trends in otolaryngology. Constitutional aspects of diseases of ear, nose and throat. Allergy. Diseases of: Nose. Nasal accessory sinuses. Mouth. Pharynx. Ear. Otogenic complications. Diseases of larynx. Trachea, bronchi, and esophagus. Facial neuralgias. Enlargements of head and neck. Disorders of speech. Appendix: Diagnostic and therapeutic facilities and approaches.

Note: The purpose of this book is to furnish supplementary material on otorhinolaryngology for the medical student. In each section of the book the anatomy and physiology of the part are first considered; this is followed by a description of the various diseases to which it is subject, under which etiology, pathology, bacteriology, symptoms, differential diagnosis, laboratory examination, complications, treatment, prognosis, etc., are discussed. Improved apparatus and instruments are described, new drugs and new operative techniques are included. A brief "preview" of the contents of each chapter is given, and material aiding in differential diagnosis is shown in the form of charts.

MORRISON, WILLIAM WALLACE

Diseases of the nose, throat and ear. Philadelphia: W. B. Saunders Company, 1938. 675 p. illus. 24 cm. \$5.50. 2310

Contents (abridged): Diseases of the external nose and nasal cavities. Allergic diseases of the respiratory tract. Diseases of the paranasal sinuses. Diseases of the pharynx. Diseases of the larynx. Diseases of the trachea, bronchi and esophagus; peroral endoscopy. Diseases of the ear. Formulary of prescriptions for medication to be used by patients. Symptom index. General index.

Note: The author wrote this book specifically for the medical student and general practitioner. His aim has been to state facts necessary for the application of the knowledge given for the aid of the sick and to omit all other material. Common diseases have been stressed and rare conditions dealt with briefly. In each section a brief review of the essentials of surgical anatomy is given, followed by a consideration of the physiology. Etiology is stated when known. Important points in pathology are described and illustrated. Symptoms and signs are enumerated in order of appearance or importance. Special stress has been placed on physical examination. Prognosis is discussed when important and considerable attention is paid to preventive aspects. Treatment, both medical and surgical, is detailed. The 629 illustrations on 334 figures were drawn by the author and are largely diagrammatic in order to achieve simplicity and easy recognition of basic concepts. References are placed at the ends of chapters.

MYERSON, MERVIN CARUETH

Tuberculosis of the ear, nose, and throat; including the larynx, the trachea, and the bronchi. Springfield, Ill.: Charles C. Thomas, 1944. 291 p. illus. 23 cm. \$5.50. 2311

Contents: Tuberculosis of the larynx: general considerations; pathology; symptomatology, diagnosis and prognosis; treatment. Lupus of the larynx. Tracheotomy in tuberculosis of the larynx. Tuberculosis of the larynx during pregnancy. Nontuberculous lesions of the larynx among the tuberculous. Tuberculosis of the middle ear and mastoid. Tuberculosis of the nose: external nose; nasal tuberculosis; nasal lupus; paranasal sinuses. Tuberculosis of the oral cavity; lupus of the oral cavity. Tuberculosis of the tongue. Tuberculosis of the pharynx: lupus of the pharynx. Tuberculosis of the tonsil. Tuberculosis of the esophagus. The technic of bronchoscopy in tuberculosis. Tuberculosis of the trachea and bronchus. Index.

Note: Diagnosis, prognosis, and treatment, based on sound concepts of pathological anatomy and physiology, are clearly described—and are based upon the author's experiences with over ten thousand tuberculosis cases. Therapeutic measures which have survived and are most frequently used are given in detail. The measures and remedies which have been discredited are pointed out. The clear illustrations will be of assistance to the diagnostician and operator. Abundant case histories and convenient chapter bibliographies are provided.

SCHLANSE, ADAM EDWARD

Practical otology, rhinology and laryngology. Illustrated with 81 engravings. Philadelphia: Lea & Febiger, 1938. 315 p. illus. 24 cm. \$4.50. 2312

Contents: Case record and examination of patient. The ear. The nose. The throat, pharynx and larynx. Dyspnea. Lists of instruments and accessories for ear, nose and throat operations.

Note: It is the underlying purpose of this book to show how each of the complaints that are of routine occurrence in otorhinolaryngological practice may be handled expeditiously and successfully. To this end the book has been made distinctly clinical. Unessentials have been excluded and the pathology of the various disorders has been limited to the essentials requisite to a clear conception.

SPIEGEL, ERNST ADOLF, AND I. SOMMER

Neurology of the eye, ear, nose, and throat. New York: Grune & Stratton, 1944. 667 p. illus. 23 cm. \$7.50. 2312a

Contents (abridged): Preface. Part I, Neurology of the ear: The organ of hearing. The nonacoustic or statokinetic labyrinth. Lesions of the nervous system related to aural conditions. Part II, Neurology of the eye: The optic pathways and centers. The eye fundus in diseases of the nervous system and the ear. Ocular movements and their disturbances. The smooth muscles of the eye and of the orbit. The common sensory nerve supply of the eye and its disturbances. Appendix: Cataract in neuroendocrine disorders. Part III, Neurology of the nose, mouth, pharynx, and larynx: Disturbances of innervation and intracranial complications. Part IV, Local symptoms of the brain stem and the cerebrum: The brain stem. The cerebral cortex. Bibliography. Index.

Note: Of interest to the advanced student and to the practicing ophthalmologist and otolaryngologist, this survey of the neurologic phases of normal and diseased conditions in these areas presents not only clinical data and discussion, but also much of the original experimental work done by the authors. The 69-page bibliography covers European and American sources in the field.

VAN ALYEA, OLIVER EDMOND

Nasal sinuses, an anatomic and clinical consideration. Baltimore: The Williams & Wilkins Company, 1942. 262 p. illus. (part col.) 23 cm. \$6.50. 2313

Contents: Histopathology. Acute nasal infection. Maxillary sinus. Frontal sinus. Frontal cells. Ethmoid sinus. Sphenoid sinus. Sinus disease in children. Relation of sinuses to other organs. Complications and benign growths. Allergy. Surgical and non-surgical therapeutic measures.

Note: This work is largely composed of the results of the author's anatomic studies and clinical observations at the University of Illinois College of Medicine. Since all phases of sinus disease could not be covered within the limits of a single volume, subjects most likely to interest rhinologists as a whole were considered. Very little space was given to malignant growths or to unusual conditions or rare diseases. Anatomic rarities were noted as encountered, since they may be regarded as normal variations of sinus anatomy. In order to present as fairly as possible all sides of the controversial subjects which still exist in rhinology, modern literature has been consulted and cited liberally. The book is intended for students and practitioners of rhinology and also of general medicine.

YEAR BOOK OF THE EYE, EAR, NOSE AND THROAT

The 1944 Year book of the eye, ear, nose and throat. Louis Bothman, Samuel J. Crowe, and Elmer W. Hagens, editors. Chicago: The Year Book Publishers, Inc., 1944. 544 p. illus. 18 cm. \$3.00. 2313a

Contents: The eye: Industrial ophthalmology, by Louis Bothman. Exophthalmos and the orbit. The eyelids and lacrimal apparatus. The conjunctiva. The cornea. The iris and ciliary body. The lens and cataract. The choroid. The optic nerve. Glaucoma. The retina. Sclera and vitreous. Neurology and visual fields. Refraction and muscles. Therapy. Surgery. Injuries. General and miscellaneous. The ear: General considerations. Industrial and war trauma to the ear. Menière's syndrome. The nose and throat: Nasal and sinus conditions. Pharynx and nasopharynx. The larynx. Bronchi and esophagus. Chemotherapy. Index.

Note: An illustrated annual review of world-wide developments in ophthalmology and otorhinolaryngology. Digests of between 410 and 470 contributions selected by the editors from current clinical-scientific literature are included in each edition. Emphasis is placed on clinical aspects of the subjects. Diagnostic measures and treatment procedures applicable to a large variety

of disease conditions frequently seen by the specialist as well as by the general physician are discussed. Editorial comments interspersed throughout the text evaluate recent researches. Illustrations are collected from clinics throughout the world and show points of operative technique, diagnostic methods, new apparatus and instruments, pathologic evidence, etc.

Gastrointestinal Diseases

ALVAREZ, WALTER CLEMENT

An introduction to gastro-enterology, being the third edition of the *Mechanics of the digestive tract* with 186 illustrations. New York: P. B. Hoeber, Inc., 1940. 778 p. illus. 26 cm. \$10.00. 2314

Contents: The motor functions of the small bowel. The facultative autonomy of the digestive tract. Some theories that have been advanced to explain the polarity of the small bowel. The gradient theory of the polarization of the bowel. A possible basis of metabolic gradient. Other related gradients. Ways in which a gradient might conceivably be altered or reversed. The syndrome of reverse peristalsis. The smooth muscle of the gastro-intestinal tract. The muscular versus the nervous origin of the rhythmic contractions of the gut. The structure and functions of the myenteric plexuses. The extrinsic nerves of the digestive tract and their functions. Chewing and swallowing. The cardia. The movements of the stomach. Gradients in the muscular wall of the stomach. The pylorus and the duodenal cap. Hunger contractions and the pain of ulcer. Movements of the stomach that is diseased or has been operated on. Vomiting. The mechanics of the gall-bladder. The *muscularis mucosae*. The ileocecal sphincter. The appendix. The movements of the colon. The length and complexity of the bowel. Constipation. Hunger, appetite, and thirst. The *modus operandi* of a gastro-enterostomy. Technical methods and apparatus. On books and reading. Bibliography. Index.

Note: A survey of recent knowledge of the subject for medical students, general practitioners, and specialists, written in informal lecture-room style. The author's treatment is based on the literature of the field and on his own practice at the Mayo Clinic, Rochester, Minnesota. A clinical summary is appended to each chapter. In this edition under a new title, the volume has been rewritten, its scope broadened and the size doubled. The extensive bibliography lists about 2,300 articles, books, and monographs.

ALVAREZ, WALTER CLEMENT

Nervousness, indigestion, and pain. New York: P. B. Hoeber, Inc., 1943. 488 p. 24 cm. \$5.00. 2315

Contents (abridged): Ways in which emotion can affect the digestive tract. The making of the diagnosis from a good history. Importance of uncovering the patient's fear or his or her real reason for consulting a physician. What can be learned from the way the patient tells the history. Problems that come up in planning the examination. Handling the nervous patient. Problem of combating disturbing diagnoses previously made. Helpful points in diagnosis of abdominal pain. The chronic "dyspeptic" and some of the things that may be wrong with him. Types of neurotic persons. The stormy menopause. Insomnia. Constipation. Irritable bowel syndrome commonly called mucous or spastic colitis. Food sensitiveness or allergy. Flatulence. Pseudo-appendicitis. Pseudo-ulcer. Pseudo-cholecystitis and the post-cholecystectomy syndrome. Regurgitation or "nervous vomiting." Migraine and migraine equivalents. Gastritis. Abdominal distresses associated with pelvic troubles in women. Treatment of nervous, psychopathic, poorly adjusted, much troubled or overworked and tired persons. Bibliography. Suggestions for further reading. Index.

Note: The successor, but more than a second edition, of the author's *Nervous indigestion*. This new work deals more with sick, unhappy persons and what makes them ill than with diseases, more with symptoms and their meanings than with disease entities, more with handling patients than with giving medicines. The reader is shown how Dr. Alvarez takes a history so that it often gives the diagnosis, how he sizes up the patient and gains his confidence, how he develops the differential diagnosis and plans the overhauling. Written primarily for general practitioners and specialists, this book has also proved of benefit to patients suffering from nervousness and abdominal distress. It is written in a lighter, more readable style than most medical books.

BABKIN, BORIS PETROVICH

Secretory mechanism of the digestive glands. With 220 illustrations. New York: P. B. Hoeber, Inc., Medical Book Dept. of Harper and Brothers, 1944. 900 p. illus. 24 cm. \$12.75. 2315a

Contents (abridged): Correlation of structure and function in the digestive glands. The secretory granules. Histology of the gastric mucous membrane. Morphological and functional topography of the gastric *mucosa*. The enteric plexuses. Regulation of the secretory activity of the stomach. Spontaneous and continuous secretion of the digestive glands. Nervous mechanism of gastric secretion. Dissolved mucin and non-protein in the gastric juice. Sympathetic innervation of the stomach. Histamine as a stimulant of gastric secretion. Intimate mechanism of gastric secretion. Inorganic compounds of the gastric juice and theories concerning the variations of gastric acidity. Chemical phase of gastric secretion. Triple mechanism of the chemical phase of gastric secretion. Hormones of the alimentary canal. Regulation of the secretory activity of the salivary glands. Ducts of the salivary glands. Fundamental features of the secretory process. Bibliography. Indexes.

Note: A guide for the physician in the understanding of diseases of the secretory apparatus of the alimentary canal, this book offers the results of original well-known investigations performed in the author's own laboratory at McGill University. Further, it supplies a needed review of the scientific writings on the subject to date. Attention is paid both to normal functioning of the gastric glands and pathological deviations, and to salivary and hormonal action. The volume is of interest to physiologists, morphologists, and physicians and surgeons concerned with the gastro-intestinal tract. The extensive bibliography contains about 1,700 references to the world literature of the subject.

BACON, HARRY ELLICOTT

Anus, rectum, sigmoid colon; diagnosis and treatment. Introduction by W. Wayne Babcock. Foreword by J. P. Lockhart-Mummery. 507 illustrations in the text, mostly original, by William Brown McNett. Second edition. Philadelphia: J. B. Lippincott Company, 1941. 857 p. illus. (part col.) 23 cm. \$8.50. 2316

Contents: Anatomic considerations. Examination and diagnosis. Anesthesia and analgesia. Malformations of the anus and rectum. Cryptitis and papillitis. Fissure in ano. Pruritus ani. Anorectal abscesses. Fistula. Proctitis and sigmoiditis. Tuberculosis of the anus, rectum, and sigmoid colon. Venereal diseases of the anus and rectum. Sympathetic disease—lymphogranulomatosis inguinalis. Stricture and stenosis. Prolapse and procidentia. Hemorrhoids. Benign tumors. Malignancy. Treatment of malignancy. Colostomy. Hirschsprung's disease: megacolon. Wounds, injuries, and rupture of the rectum. Foreign bodies. Index.

Note: Diagnosis in terms of the underlying pathology is emphasized throughout this text and reference book for the student and general practitioner. The correct method of proctoscopic and sigmoidoscopic examination is presented, distinguishing features in diagnosis are elucidated and listed in chart form for quick reference, and new forms of treatment are discussed and evaluated. For the general surgeon there is information on surgical procedures applicable to proctologic syndromes. In the second edition new procedures for rectal prolapse and hemorrhoids are included, together with methods of avoiding postoperative pain, a discussion of metastatic growths, perirectal cellulitis, and surgical treatment of supraprostatic abscess. The bibliographies at the end of most of the chapters contain a total of 2,266 references. A briefer book on the same subject for office and quick reference use is the author's *Essentials of proctology*, Philadelphia: J. B. Lippincott Company, 1943, 345 p., \$3.50.

BARGEN, JACOB ARNOLD

The modern management of colitis. Springfield, Ill.: Charles C. Thomas, 1943. 322 p. illus. 25 cm. \$7.00. 2317

Contents: The irritable colon. Types of ulcerative colitis. Thrombo-ulcerative colitis: streptococcal (type 1). Regional (segmental) ulcerative colitis (type 2). "Chronic ulcerative colitis" (type 3). Tuberculous ulcerative colitis (type 4). Amebic ulcerative colitis (type 5). "Colitis" (type 6): its relation to food and vitamin deficiency. Ulcerative colitis due to the virus of venereal lymphogranuloma (type 7). Allergic colitis (type 8).

Chronic ulcerative colitis (type 9): a late phase of bacillary dysentery. Conditions to be distinguished from colitis. References. Index.

Note: The author's account of his experiences in managing and interpreting intestinal infections at the Mayo Clinic is presented. Precise diagnostic criteria, treatment and its purpose, practical case reports, complications and sequelae, are covered. How to distinguish accurately the real inflammatory diseases from the functional colonic disorders is stressed. The common and the rare forms of colitis are included.

BOCKUS, HENRY LE ROY

Gastro-enterology. Volume I-II. Philadelphia: W. B. Saunders Company, 1943-44. 2 v. illus. (part col.) 25 cm. Complete set of 3 v. and index, \$35.00. 2318

Contents: Volume I, Esophagus and stomach: Examination. Esophagus and diaphragm. Affections of the stomach. Index. Volume II, Small and large intestines and peritoneum; mesentery and omentum. Index.

Note: The objective of this work is to present the known diseases of the gastro-intestinal tract with regard to their causes, symptoms, diagnosis, and treatment. It is intended especially for practitioners, internists, surgeons, and gastro-enterologists, but specialists in other fields, roentgenologists, and pathologists will discover in it many applications to their own fields. Although the work is primarily medical and does not include actual surgery, it considers the surgical aspects of the diseases, giving indications for operative treatment and suggestions for operative procedures, and also including pre- and postoperative management. Considerable emphasis is placed on diagnosis. The significance of symptoms is stressed and the methods of diagnosis include laboratory tests and instrumental diagnosis. There are many X-ray and gastroscopic views of the stomach and also pictures of pathologic specimens, charts, and diagrams. Discussions of special interest are those on affections of the stomach, including more than 300 pages on peptic ulcer, and chronic and acute gastritis. Constitutional and other disorders affecting the function of the gastro-intestinal tract are given extensive attention. Wherever anatomic and physiologic aspects are of importance, they are described and illustrated. An outline of contents precedes each chapter and a bibliography is appended to each chapter. Virtually all of the work is by Dr. Bockus himself. Several special subjects, however, are contributed by others selected because of their particular familiarity with the matters under discussion. Volume III, covering the liver, biliary tract, pancreas, and secondary gastro-intestinal disorders, and the index volume were still in preparation at the end of 1944.

BROWN, LAWRASON, AND HOMER L. SAMPSON

Intestinal tuberculosis; its importance, diagnosis and treatment; a study of the secondary ulcerative type. Second edition, thoroughly revised. Illustrated with 122 engravings and 2 colored plates. Philadelphia: Lea & Febiger, 1930. 376 p. illus. 24 cm. \$4.75. 2319

Contents: The history of intestinal tuberculosis. The anatomy of the intestines. The normal physiology of intestinal movement. Pathological anatomy of intestinal tuberculosis. Pathological physiology of movement. The etiology of intestinal tuberculosis. Experimental intestinal tuberculosis. The importance and frequency of secondary intestinal tuberculosis. The site of the lesions in intestinal tuberculosis. Primary and secondary intestinal tuberculosis. Clinical symptoms of intestinal tuberculosis. Clinical examination of intestinal tuberculosis. The relation of the symptoms of intestinal tuberculosis to the site of the lesion. The abdominal examination in intestinal tuberculosis. The pulmonary condition in secondary intestinal tuberculosis. Diagnosis of intestinal tuberculosis. Complications of intestinal tuberculosis. Prognosis of intestinal tuberculosis. Prophylaxis of intestinal tuberculosis. Treatment of intestinal tuberculosis. Conclusions and summary.

Note: This is a second edition—fully revised and greatly enlarged—of the first book to arouse interest in the importance of intestinal tuberculosis. It shows that intestinal tuberculosis can be accurately diagnosed and that it can be cured. It gives, too, not only the method of diagnosis but the treatment.

CARTER, RUPERT FRANKLIN, AND OTHERS

Diagnosis and management of diseases of the biliary tract, by R. Franklin Carter, Carl H.

Greene, and John Russell Twiss. Illustrated with 84 engravings with six plates. Philadelphia: Lea & Febiger, 1939. 432 p. illus. (part col.) 24 cm. \$6.50. 2320

Contents: Introduction. Practical consideration concerning etiological factors in disorders of biliary tract. Diagnostic investigation of patient with disease of the biliary tract. Medical treatment of disease of biliary tract. Surgical management. Results of operative experience in general hospital service for gall bladder disease. Appendix.

Note: This work is intended for both the physician and the surgeon in the management of disorders of the biliary tract. A detailed discussion is included of the various diagnostic methods and the interpretation of their findings. An effort has thus been made definitely to indicate the patients who should be treated medically and those for whom surgery is required. Methods of treatment are outlined which are based upon the indications furnished by the diagnostic workup. Details are given of the medical, surgical, and dietary management.

EUSTERMAN, GEORGE BYSSHE, AND OTHERS

The stomach and duodenum, by George B. Eusterman and Donald C. Balfour and members of the staff, the Mayo Clinic and the Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota. Philadelphia: W. B. Saunders Company, 1935. 958 p. illus. 25 cm. \$10.00. 2321

Contents: History of diseases of the stomach and duodenum with reference also to their etiology, by Dwight L. Wilbur. Applied physiology of the stomach and duodenum, by Walter C. Alvarez. Experimentally produced chronic gastritis and duodenal ulcer, by F. C. Mann. Surgical pathology of stomach and duodenum, by William Carpenter MacCarty. The stomach and duodenum at necropsy, by H. E. Robertson. Dyspepsia, organic, reflex and functional. Examination of the patient. Test meals and their diagnostic significance. Significance of symptoms. Roentgenologic diagnosis. Anesthesia for surgical procedures, by John S. Lundy. Duodenal ulcer: General considerations, medical treatment, identification on operation, surgical treatment. Duodenitis. Nonmalignant tumors of the duodenum. Carcinoma and sarcoma of the duodenum. Tuberculosis of the duodenum. Chronic dilatation and obstruction of the duodenum. Fistulas of the duodenum. Foreign bodies in the duodenum. Duodenal parasites. Duodenal diverticula. Paraduodenal hernia. Gastric ulcer: general considerations, medical treatment, recognition, surgical treatment. Traumatic gastric and duodenal ulcer. Gastritis. Achlorhydria. Nonmalignant tumors of the stomach. Carcinoma of the stomach: general considerations, medical treatment of inoperable cases, surgical treatment exclusive of total gastrectomy, total gastrectomy. Sarcoma of the stomach. Gastric syphilis. Tuberculosis of the stomach. Foreign bodies in the stomach. Injuries to the stomach. Diverticula of the stomach. Diaphragmatic hernia, by S. W. Harrington. Acute dilatation of the stomach. Gastroptosis. Cardiospasm associated with abdominal lesions. Pylorospasm and gastropasm. Hypertrophy of the pyloric muscle in adults. Hypertrophic pyloric stenosis of infancy, by H. F. Helmholz. Perforation. Hemorrhage from stomach and duodenum, by A. B. Rivers. Treatment of hemorrhage associated with lesions of stomach and duodenum. Gastric retention, duodenal and pyloric obstruction. Carcinomatous transformation of gastric ulcer. Hour-glass deformity of the stomach. Nutritional and vitamin deficiency states. Late sequelae of surgical treatment of lesions of stomach and duodenum. Anemia following operations on the stomach, by Howard R. Hartman. Preoperative and postoperative treatment of patients who have gastric and duodenal lesions. Complications which occur after operations on the stomach or duodenum. Nature of postoperative pulmonary disease: prophylactic measures and treatment, by Willis S. Lemon. Appendix. Bibliographic index. Index of subjects.

Note: This volume correlates the fundamental facts of diseases of the stomach and duodenum and their relationship to other diseases, and develops those methods of clinical investigation which past experience and advancing knowledge have put at the disposal of the practitioner, surgeon, and specialist. Footnotes are found throughout. Five hundred and seventy-one illustrations on 436 figures are included, many of them showing surgical technique. Diet lists are given in the appendix.

HAYDEN, EDWIN PARKER

The rectum and colon, illustrated with 169

engravings. Philadelphia: Lea & Febiger, 1939. 434 p. illus. 24 cm. \$5.50. 2322

Contents: Anatomy of the rectum and colon. Methods of examination of the rectum and colon. Anorectal symptoms. Pruritus ani. Anesthesia. Preoperative and postoperative treatment. Anal fissure. Hemorrhoids. Prolapse of the sigmoid, rectum and anus. Perianal and perirectal infections. Anal fistula. Lymphogranuloma inguinale. Other genito-infectious diseases. Diarrhea and colitis. Tuberculosis and actinomycosis. Diverticulosis and diverticulitis. Benign tumors of the rectum and colon. Multiple polyposis. Malignant tumors of the rectum and colon. Melanosis coli. Megacolon and volvulus. Injuries and foreign bodies.

Note: The text is based largely on personal experience of the author augmented by that of a number of his colleagues at the Massachusetts General Hospital, where a clinic for diseases of the rectum and colon was organized to facilitate the diagnosis, treatment, and after-care of these disorders.

HEUER, GEORGE JULIUS, AND OTHERS

The treatment of peptic ulcer; based upon ten years' experience at the New York Hospital, by George J. Heuer, assisted by Cranston Holman and William A. Cooper. Philadelphia: J. B. Lippincott Company, 1944. 118 p. illus. 23 cm. \$3.00. 2323

Contents (abridged): Part I, Medical treatment: Results of medical treatment of patients admitted to our wards and not subjected to operations during their first admission. Part II, Surgical treatment: Gastro-enterostomy for duodenal ulcer. Gastro-enterostomy for gastric ulcer. Summary of all cases of peptic ulcer treated primarily by gastro-enterostomy. Gastric resection for gastric ulcer. Summary of cases of peptic ulcer treated primarily by gastric resection. Comparison of results of gastro-enterostomy and gastric resection in the treatment of peptic ulcer. Effects of gastro-enterostomy and gastric resection on gastric secretion. Incidence of malignancy in presumed gastric ulcer as an argument for gastric resection. Survey of literature. Discussion and summary. Bibliography. Index.

Note: The hospital data on 1,204 patients with peptic ulcer are presented in a series of exhibits which contain in summary form the total number of cases of each type, causes of post-operative death, general results and period of follow-up, present status of patients, total deaths, and causes of unsatisfactory results. These statistics are then interpreted and analyzed. The majority of cases were treated medically, and only a few subjected to surgery, with a total of 98.2 per cent of the patients successfully followed up. The literature of the field is critically summarized and there is an extensive bibliography.

HODGES, FRED JENNER

The gastro-intestinal tract; a handbook of Roentgen diagnosis. Chicago: Year Book Publishers, Inc., 1944. 320 p. illus. 21 cm. \$5.50. 2323a

Contents (abridged): The esophagus: Cardiospasm, diverticulum, neoplasm, foreign body, intrinsic lesions identity indefinite, miscellaneous findings. Upper gastro-intestinal tract: Normal stomach and duodenum, diverticulum, ulcer, neoplasia, fistulae, miscellaneous findings. Biliary tract: Cholecystography, abnormal liver shadow, cholangiography, miscellaneous findings. Colon: Normal, diverticulitis, ulcerative colitis, neoplasm and fistula, intrinsic lesion, indefinite identity, sinus tract injection. The abdomen generally: Calcium deposits, extra-alimentary mass, intestinal obstruction, subphrenic abscess, diaphragmatic hernia, miscellaneous findings. Findings of particular interest: Esophagus; stomach and colon; jejunum and ileum; biliary tract; miscellaneous.

Note: Five methods of approach are available to the radiologist engaged in gastro-intestinal diagnosis: 1. abdominal scout film; 2. upper gastro-intestinal examination; 3. cholecystogram; 4. colon examination; 5. examination other than those mentioned. The application of these methods is discussed in general; roentgenography of the various regions of the gastro-intestinal tract as outlined above, is then set forth in detail. Each section is very copiously illustrated by X-ray pictures of the conditions discussed. Short case histories are introduced as examples. Bibliographies, mostly referring to clinical application of roentgenography to the gastro-intestinal tract, accompany each section. While the book covers the entire field of roentgenologic examination, more attention is paid to fluoroscopic work.

HORRALL, ONIS HARRISON

Bile, its toxicity and relation to disease. Chicago: The University of Chicago Press, 1938. 434 p. 23 cm. (The University of Chicago monographs in medicine) \$4.00. 2323b

Contents: History of bile. Experimental history. Methods of investigation. Constituents of bile. Origin and fate of bile. Toxicity of bile acids. Nontoxicity of bile pigments. Toxicity of other constituents of bile. Concentration of bile in the blood. The effect of bile on the blood cells. Bleeding in jaundice. Action of bile in the nervous system. Action of bile on the heart and blood pressure. Action of bile on skeletal muscle. Excretion of bile in the urine and its toxic action. Action of bile on the uterus. Action of bile on the gastrointestinal system. Action of bile on bacteria and toxins. Bile and acute pancreatitis. Why bile does not cause necrosis of the gall-bladder. Bile peritonitis. Bile retention: icterus. Physiologic jaundice. Jaundice caused by extrahepatic obstruction. Bile loss. Therapeutic effects of bile acids. General conclusions.

Note: Based on a review of over 2,000 books and articles, the book is a record of the development of scientific research into the character and physiologic action of the bile, the methods used in clinical observation, and the results that have been obtained. It is designed to stimulate research and to aid the physician to a more scientific treatment of patients with jaundice. There is an extensive bibliography.

JONES, CHESTER MORSE

Digestive tract pain; diagnosis and treatment, experimental observations. New York: The Macmillan Company, 1938. 152 p. illus. 22 cm. (Macmillan medical monographs) \$2.75. 2324

Contents: Introduction. Reference of pain from the esophagus with special consideration of heartburn. Reference of pain from the stomach and duodenum. Reference of pain from the jejunum and ileum. Reference of pain from the large bowel. Clinical application of experimental observations. Gastro-intestinal pain in "functional disease." Summary and therapeutic considerations. Bibliography.

Note: This book is written to provide students and practitioners of medicine with the results of the author's study on pain and other similar sensations caused by disturbances of the digestive tract, and his experimental observations on pain produced at various levels throughout the entire digestive tract. The author has added a group of clinical observations having a direct bearing upon the production and diagnosis of alimentary tract pain.

LICHTMAN, SOL SYDNEY

Diseases of the liver, gallbladder and bile ducts. Illustrated with 122 engravings and a colored plate. Philadelphia: Lea & Febiger, 1942. 906 p. illus. (part col.) 24 cm. \$11.00. 2325

Contents (abridged): Part I, Diseases of the liver: Structure of the liver. Physiology of the liver. Exogenous liver poisons. The role of nutrition and diet in liver function and damage. The pathogenesis and pathology of jaundice. Pathological changes in the liver. The symptomatology of liver disease. Liver function tests and procedures. Etiological factors in liver damage. Acute and subacute inflammatory diseases of the liver. Toxic jaundice. Acute diffuse liver necrosis. Intrahepatic obstructive jaundice. Cirrhosis of the liver. Hemolytic jaundice. New growths of the liver. Echinococcus disease of the liver. Liver abscess. The liver in hyperthyroidism. The liver in pregnancy. Metabolic hepatomegalies. The liver in heart disease. Specific infections of the liver. Hepatic disease and the hematopoietic apparatus. Differential diagnosis. The treatment of liver disease. Part II, Diseases of the biliary passages: Anatomic features. Physiology of the extrahepatic biliary tract. Diseases of the gallbladder. Diseases of the extrahepatic ducts. Diagnostic procedures in extrahepatic biliary tract disease. The treatment of biliary tract disease.

Note: A textbook for medical students and a reference book for gastroenterologists and general practitioners. The treatment is practical and purely academic topics are omitted. Advances in vitamin and dieto-therapy, as applied to diseases of the liver, are described.

MONTAGUE, JOSEPH FRANKLIN

The modern treatment of hemorrhoids. Foreword by Harlow Brooks. 116 illustrations. Third

edition revised. Philadelphia: J. B. Lippincott Company, 1934. 318 p. illus. 23 cm. \$5.00. 2326

Contents: General considerations. Definitions and synonyms. Signs and symptoms. Pathology. Classification. Diagnosis. Examination procedure. Differential diagnosis. Etiology. Treatment. The prophylactic treatment of hemorrhoids. Palliative treatment. Suppository treatment. Ointment treatment. Treatment by special position. Hydrotherapeutic treatment. Operative treatment. Ligature with excision method. Clamp and cautery method. Other methods. Injection method. Carbolic acid method. Author's cresylic acid method. Quinine urea-hydrochloride method. Radium seed method. Electrotherapeutic methods. Complications and sequelae. The recurrence of hemorrhoids. Popular fallacies concerning hemorrhoids. Improved methods of anesthesia for use in hemorrhoid operations. Bibliography. Index.

Note: A digest of modern views on the treatment of hemorrhoids is attempted in this monograph. A plain discussion of the medical facts plus a presentation of the etiological theories is intended to show the extremely important relation which certain systemic conditions bear to hemorrhoids. The case histories of over 200 patients are presented in summary form and the various therapeutic methods are described in detail and illustrated with photographs. The third edition incorporates new material on the anesthetic avertin for use in rectal operations, plus new bibliographic material.

PENNSYLVANIA UNIVERSITY. BICENTENNIAL CONFERENCE

Problems of intestinal obstruction. Philadelphia: University of Pennsylvania Press, 1941. 56 p. illus. 23 cm. \$0.50. 2326a

Contents: Electrolyte balances in obstruction of the gastrointestinal tract, by J. P. Peters. Distention in intestinal obstruction, by O. H. Wangenstein. Decompression of the intestinal tract, by W. O. Abbott. End results of decompression of the intestinal tract with and without operation, by A. O. Whipple and J. A. Nelson.

Note: A series of four papers on the specialized problems indicated. Each has its own complete bibliography, but no index is included.

POTTENGER, FRANCIS MARION

Symptoms of visceral disease; a study of the vegetative nervous system in its relationship to clinical medicine. Sixth edition, with eighty-seven text illustrations and ten color plates. St. Louis: The C. V. Mosby Company, 1944. 442 p. illus. (part col.) 23 cm. \$5.00. 2327

Contents (abridged): Introductory. Part I, The vegetative nervous system: General considerations. Anatomical considerations. Locations and functions of vegetative centers in the central nervous system. General physiologic considerations. Pharmacological differentiation between neurons of the thoracolumbar and craniosacral outflow. The relation of ionic content and physical state of the cell to cell activity and nerve stimulation. Part II, Relationship between the vegetative nervous system and the symptoms of visceral disease: Basis of classification of symptoms. Toxemia. Segmentation of the body. Viscerogenic reflex. Visceral pain. Reflexes in the sympathetic and parasympathetic systems. Part III, Innervation of important viscera with a clinical study of the more important viscerogenic reflexes: Esophagus. Stomach. Intestinal tract. Liver and gall bladder. Diaphragm. Bronchi and lungs. Pleura. Heart. Aorta. Larynx. Eye. Urogenital tract. Endocrine glands. Indexes.

Note: In this monograph an attempt is made to interpret in terms of visceral neurology the symptoms which are found in everyday clinical observation of visceral disease. The study is presented not from the standpoint of the disease process but from the viewpoint of the patient who has the disease. The author emphasizes how pathologic changes in one organ affect other organs and the organism as a whole through the medium of the visceral nerves. The sixth edition contains new chapters on visceral pain, vegetative centers in the brain and cord, and new data on the endocrines. References are given at the end of each chapter.

PRUITT, MARION COLUMBUS

Hemorrhoids. With 73 illustrations, including 7 in color. St. Louis: The C. V. Mosby Com-

pany, 1938. 170 p. illus. (part col.) 25 cm. \$4.00. 2328

Contents: Hemorrhoids. Embryology, surgical anatomy, and physiology. Examination. Instruments. Anesthesia. Etiology. Pathology. Classification. Symptoms and signs. Diagnosis. Differential diagnosis. Treatment of external hemorrhoids. Injection treatment of internal hemorrhoids. Operative treatment of internal hemorrhoids. Electric treatment. Choice and evaluation of methods.

Note: This brief treatise for students and practitioners attempts to estimate the comparative values of the various methods of treatment, including electric, injectional, and operative. It covers the details of each of the techniques and illustrates the surgery by means of photographs and drawings. There is no bibliography.

REHFUSS, MARTIN EMIL

Indigestion, its diagnosis and management, with special reference to diet. Philadelphia: W. B. Saunders Company, 1943. 556 p. illus. 24 cm. \$7.00. 2329

Contents: Introduction. Indigestion. History. Physical diagnosis. Gastric and duodenal analysis. X-ray examination. Gastroscopy and gastrophotography. Nervous indigestion. Indigestion due to allergy. Indigestion secondary to infection. Indigestion due to gastric functional disturbances. Indigestion of chronic gastritis. Ulcer type of indigestion. Indigestion due to malignancy. Biliary tract type of indigestion. Indigestion of hepatobiliary and intestinal disease. Indigestion of cardiovascular disease. Indigestion of old age. Indigestion associated with menopause. Reflex and other forms of indigestion. Indigestion in wartime. Indigestion and the diet. Dietary indications in disease. Vitamins. Water. Calories. Materials of the diet. Diet in disease. Dietary precepts. Appendix. Reference books and suggested reading. Index.

Note: The general practitioner is usually the first to see the patient suffering from indigestion. This book, therefore, is directed specifically to him. One hundred and seventy-one pages are devoted to diet. In this discussion, the author has approached the subject from the newer biologic point of view. Menus, recent facts about vitamins, caloric intake, protective diet in treatment of various digestive disturbances are presented in this discussion. The parts of anxiety, frustration, fear, etc., as causes of indigestion in modern life are taken up, as well as special situations such as indigestion in old age, with the menopause, etc. Suggestions are given pertaining to care of inoperable cancer, measures to counteract anorexia, and medication to relieve pain. Many prescriptions are given throughout the book.

REHFUSS, MARTIN EMIL, AND GUY M. NELSON

The medical treatment of gallbladder disease. Philadelphia: W. B. Saunders Company, 1935. 465 p. illus. (part col.) 24 cm. \$5.50. 2330

Contents (abridged): The gallbladder problem. The gallbladder. History. Physical examination. Duodenal intubation. X-ray examination. Differential diagnosis. Plan of medical treatment. Metabolic problem. Diet. The infection problem. Evidence of infection. Treatment of infection. Stasis. Medical treatment of gallbladder disease. Physical and other therapy. Cholelithiasis. Medical treatment of gallstones. Preoperative care. Directions for gallbladder patients. Jaundice in noncalculous cholecystitis. Examination and treatment of jaundice. Useful lists and methods. General bibliography. Index.

Note: Intended for general practitioners and gastro-enterologists, this book takes up those disturbances of the biliary tract for which surgery is not indicated, or for which patients refuse surgical intervention. The aim of the authors is to set up a pattern of diagnostic and therapeutic procedure based on some 20 years' experience with these kinds of cases. Because of its great importance in nonoperative treatment, diet has been discussed in great detail, including menus, foods, and quantities. The chapter on directions for the patient is also important and the chapter on jaundice by Dr. Abraham Cantarow is especially interesting to the practitioner.

RETTGER, LEO FREDERICK, AND OTHERS

Lactobacillus acidophilus & its therapeutic application, by Leo F. Rettger, Maurice N. Levy, Louis Weinstein, and James E. Weiss. New Haven: Yale University Press, 1935. 203 p. illus. 21 cm. \$2.50. 2330a

Contents: *Lactobacillus bifidus* and its relation to *Lactobacillus acidophilus*. Oral and dental types of lactobacilli and their relation to *Lactobacillus acidophilus*. Influence of storage temperatures, metals and metallic salts on the viability of acidophilus milk. Lactose feeding and acidophilus "implantation" experiments with albino rats and with normal human subjects. Acidophilus therapy and some of the factors governing its successful application. Therapeutic application of acidophilus milk in hospitalized cases. Therapeutic application of acidophilus milk in simple constipation. The therapeutic application of acidophilus milk in constipation accompanied by biliary symptoms. The therapeutic application of acidophilus milk in so-called "mucous colitis" or "irritable colon" and in idiopathic ulcerative colitis. Bacteriological and clinical follow-up work on successfully treated cases of simple constipation and of constipation accompanied by biliary symptoms. Theory of "implantation." General discussion and summary. Appendix: Brief description of media and methods. Bibliography.

Note: This volume constitutes a series of reports on investigations conducted by the authors four years preceding publication of the book. A number of the chapters include clinical studies.

SCHINDLER, RUDOLF

Gastrosocopy; the endoscopic study of gastric pathology, with 89 text figures and 96 color reproductions of gastrosocopic observations, with a preface by Dr. Walter Lincoln Palmer. Chicago: The University of Chicago Press, 1937. 343 p. illus. (part col.) 24 cm. (University of Chicago monographs in medicine) \$7.50. 2331

Contents (abridged): Preface by Dr. W. L. Palmer. Introduction. History of gastrosocopy. Anatomy of the pharynx, the esophagus, and the stomach. Technical problems of gastrosocopy. Technique of gastrosocopy. The orientation in the stomach. The gastrosocopic picture of the normal stomach. Disturbances in motility and secretion. Disturbances of circulation. Chronic gastroduodenal ulcer. Gastritis. Specific granulomata. Tumors. Differential diagnosis of ulcerations of the gastric mucosa. The postoperative stomach. Alterations of the shape of the stomach. Foreign bodies. The relationship between the histologic and gastrosocopic appearance of the "normal" stomach. The relationship between gastrosocopy and surgery. The relationship between gastrosocopy and gastrophotography. The relationship between gastrosocopy and X-ray. The value of laboratory methods in the morphologic diagnosis of gastric disease. Bibliography.

Note: This book records the immense progress made since Schindler's *Gastrosocopie* was published in German in 1923. It takes cognizance of 2,600 gastrosocopic examinations made since then, each of which was checked by X-ray relief, biopsy, or necropsy, and a number compared by gastrophotography.

SMITH, FREDERICK CLEVELAND

Proctology for the general practitioner. Illustrated with 161 half-tones and line engravings and five color plates. Second revised edition. Philadelphia: F. A. Davis Company, 1941. 466 p. illus. (part col.) 23 cm. \$4.50. 2331a

Contents (abridged): Anorectal symptomatology. Rectal, anal and perineal sensory symptoms of urogenital origin. Embryology and anatomy. Malformations. Examination and diagnosis. Preoperative and postoperative treatment. Anesthesia. Anal ulcer, cryptitis and papillitis. Hemorrhoids. Prolapse and procidentia. Pruritus ani. Abscesses and fistulae. Pectenosis, inflammatory stricture of rectum. Diseases of colon and proctitis. Anorectal tuberculosis. Venereal diseases of anus and rectum. Pilonidal sinus and cyst, dermoids and teratomas. Parasites. Constipation, diarrhea and fecal impaction. Benign and malignant neoplasms. Colonic surgery. Wounds, injuries and rupture of the rectum. Foreign bodies. Additional therapeutic suggestions. Index.

Note: This text is intended to give to the general practitioner the material which will enable him to take his own patients out of the hands of the quacks and charlatans who, until recent years have, unfortunately, done much of the work in this field. The writer feels that proctology should not be considered a minor specialty, and has written in detail.

STREICHER, MICHAEL HENRY

Proctoscopic examination and diagnosis and treatment of diarrheas. Springfield, Ill.: Charles C Thomas, 1940. 149 p. illus. 21 cm. \$3.00. 2332

Contents: Proctoscopic examination: Introduction. Armamentarium. Examination. Clinical summary of cases observed. Diagnosis and treatment of diarrheas: Introduction. Classification of diarrheas (etiological). Diagnosis and treatment of common types of diarrheas. References. Index.

Note: This practical book presents a brief and clear method of the technique of proctoscopic examination based on the author's experience with over 7,000 cases. It is of use to the general practitioner who wishes an outline on diagnosis and treatment of the most common form of diarrheas. It covers causes, examination, symptoms, pathology, and treatment. Numerous case histories, illustrations, and references to the literature are included.

VINSON, PORTER PAISLEY

The diagnosis and treatment of diseases of the esophagus. Springfield, Ill.: Charles C Thomas, 1940. 224 p. illus. 23 cm. \$4.00. 2333

Contents: General management of patients suffering from difficulty in swallowing. Esophagoscopy. Carcinoma of the esophagus. Cicatricial stricture of the esophagus. Congenital stricture of the esophagus. Cardiospasm—spasm at the cardia—diffuse spasm of the esophagus. Diverticula of the esophagus. Hysterical dysphagia—functional dysphagia. Injury to and perforation of the esophagus. Benign and unusual tumors of the esophagus—varices. Actinomycosis—blastomycosis—diphtheria—leukoplakia—syphilis—thrush—tuberculosis. Esophagitis. Foreign bodies in the esophagus and stomach. Fistula from esophagus into air passages. Dysphagia from extra-esophageal lesions. Gastrosocopy. Index.

Note: The author, formerly associated with the Mayo Clinic for twenty years in charge of peroral endoscopy, presents concisely an unusual experience with some three thousand patients, from the viewpoint of a physician and endoscopist, on lesions and abnormalities of the esophagus. Understandable, practical, sharply-put information is presented on etiology, pathology, symptomatology, examination, diagnosis, complications, instruments, treatment (medical and surgical), diet, post-operative complications, and prognosis. Among the highlights are the discussions of the congenital, malignant, and traumatic lesions; the various diseases; and the foreign bodies which one should consider in patients who experience difficulty in swallowing. With 98 figures and 441 references to the literature.

WALTERS, WALTMAN, AND OTHERS

Carcinoma and other malignant lesions of the stomach, by Waltman Walters, Howard K. Gray, James T. Priestley, and associates in the Mayo Clinic and Mayo Foundation, Rochester, Minnesota. Philadelphia: W. B. Saunders Company, 1942. 576 p. illus. (part col.) 24 cm. \$8.50. 2334

Contents: History, Recognition of malignant lesions of the stomach, by Carl G. Morlock and Howard R. Hartman. Roentgenology, by B. R. Kirklm. Gastrosocopy and intragastric photography, by Herman J. Mersch. Considerations regarding special laboratory observations: Gastric acidity and blood findings, by George B. Easterman. Physiologic consequences of gastric carcinoma and of gastrectomy, by Albert M. Spell. Indications for treatment. Carcinoma and other malignant lesions of the stomach: Pathologic considerations, by Albert C. Byrders. Special diagnostic problems and observations with illustrative cases. Preoperative treatment of patients who have malignant lesions of the stomach, by John M. Barkman. Counteracting dehydration, retention and toxemias of gastric stasis, by Andrew B. Myers. Surgical pathology of malignant conditions of the stomach, by William Carpenter McCarty. Technique in the operating room, by Sister Mary William. Anesthesia for surgical procedures involving the stomach and duodenum and certain procedures before, during, and after operation, by R. Charles Adams. Indications for various types of surgical procedures. Billroth I resection: Its modification and results. Billroth II gastric resection and modification: Polya operation. Total gastrectomy. Palliative surgical procedures. Postoperative care. Roentgenologic treatment, by Arthur U. Desjardins. Calculation of survival rates, by Joseph Berkson. Prognosis and end-results. Statistical tables and graphs. Index.

Note: This book, for surgeon, gastro-enterologist and practitioner, is based on the largest number (at time of publication) of cases of cancer of the stomach operated on at any medical center in the world and presents the knowledge gained at the Mayo Clinic with some 11,000 patients for whom diagnosis of

malignant lesions of the stomach had been made. Early diagnosis is especially stressed and effort made to guide the doctor not only in differentiating malignancy from benignancy, but in identifying the kind of malignancy. In addition to surgical treatment, there are discussions of intravenous therapy, lavage, feedings, vitamins, X-ray therapy, etc. Nearly 60 pages are devoted to anesthesia. References appear at chapter ends and there are 178 illustrations on 143 figures, two being in full colors.

WALTERS, WALTMAN, AND ALBERT M. SNELL

Diseases of the gallbladder and bile ducts. With 342 illustrations on 195 figures. Philadelphia: W. B. Saunders Company, 1940. 645 p. illus. (part col.) 24 cm. \$10.00. 2335

Contents (abridged): Anatomy, physiology, and pathology. Diseases of the gallbladder. Diseases of the bile ducts. Medical and surgical treatment. Preoperative and postoperative care. Appendix: Technic in the operating room. Bibliographic index. Index of subjects.

Note: This book is of interest to both the general practitioner and surgeon because it deals with the medical as well as the surgical treatment of these diseases. It is based on more than 50 years of experience as recorded at the Mayo Clinic. Use of diet, drugs, and other nonoperative therapy is detailed and the descriptions and illustrations of surgical technique are given step by step. Subjects of a rather special character have been written by men especially familiar with the problems involved. Of interest to many will be the chapters on jaundice to which particular attention has been given. Bibliographies follow each chapter.

WEISS, SAMUEL

Clinical lectures on the gallbladder and bile ducts. Chicago: The Year Book Publishers, Inc., 1944. 504 p. illus. 23 cm. \$5.50. 2336

Contents: Anatomy of the biliary tract. Physiology of the gallbladder and its ducts. History taking: interpretation of subjective complaints. Physical examination. Physical diagnosis of the gallbladder. Radiology of the gallbladder. Diagnostic and therapeutic duodenal drainage. Cholecystitis: etiology, types, incidence and pathogenesis. Cholecystitis: diagnosis. Acute infectious catarrhal cholecystitis. Suppurative, membranous, phlegmonous and gangrenous cholecystitis. Chronic cholecystitis. Complications and sequelae of cholecystitis and cholelithiasis. Pseudo-cholecystitis (spastic and allergic dyskinesia). Cholelithiasis: incidence, etiology, formation of gallstones, diagnosis, medical management, dietetic and hygienic management, medicine or surgery. Cholelithiasis and pancreatitis. Cholelithiasis caused by anomalies of the gallbladder and its ducts. Cholangitis. Specific and parasitic infections of the gallbladder. Gallbladder disease and arthritis. Gallbladder disease and cardiac involvement. Benign and malignant tumors of the gallbladder and its ducts. Jaundice. Liver function tests. Hypoprothrombinemia. Preoperative and postoperative medical care.

Note: The substance of this book consists of the author's postgraduate lectures at New York Polyclinic Medical School, which are presented as a guide for the student in the diagnosis and treatment of the patient. The chapter on roentgenology of the gallbladder is contributed by E. E. Smith, Professor of Radiology at the same institution; and that on duodenal drainage, by Harry M. Eberhard, Professor of Gastro-enterology at Hahnemann Medical College, Philadelphia. The author points out that when the gallbladder or its ducts are affected, one may expect to find involvement of the liver, the pancreas, the gastrointestinal tract, and the cardio-renal vascular system. Diagnosis, differential diagnosis, and medical treatment of all diseases of the gallbladder and its ducts form the principal subject matter. Bibliographies are appended to each chapter.

WILLARD, JOHN HARRINGTON

Digestive diseases in general practice. Foreword by George Morris Piersol. 101 illustrations, 14 in color. Philadelphia: F. A. Davis Company, 1942. 449 p. illus. (part col.) 23 cm. \$5.50. 2336a

Contents (abridged): History taking and interpretation of symptoms. Physical examination. Diagnostic procedures. Diseases of the esophagus. Diaphragmatic hernia. Peptic ulcer. Complications of peptic ulcer. Cancer of the stomach. Gastritis. Duodenal stasis. Diseases of the small bowel. Functional colonic dis-

orders. Inflammatory disease of the colon. Ulcerative diseases of the colon. Tumors of the colon. Gallbladder disease. Tests of liver function. Jaundice. Hepatic cirrhosis (chronic hepatitis). Other hepatic diseases. Diseases of the pancreas. Appendix. Index.

Note: A practical manual for the general practitioner, intended to bring his knowledge up to date in the most concise manner possible. The treatment is specific rather than comprehensive. The illustrations include many reproductions of roentgenograms. The appendix includes many formulae, as well as considerable dietary material.

YEOMANS, FRANK CLARK

Proctology; a treatise on the malformations, injuries and diseases of the rectum, anus and pelvic colon. With 421 illustrations and 4 colored plates. Second edition. New York: D. Appleton-Century Company, Incorporated, 1936. 661 p. illus. (part col.) 25 cm. \$12.00. 2337

Contents: Anatomy and physiology of rectum, anal canal and distal colon. Embryology and developmental defects of rectum and anus. Diagnostic methods and preparation of patient for operation. Anesthesia. Chronic constipation and fecal impaction. Hemorrhoids. Pruritus ani. Coccygodynia, neuralgia and hysteria of the rectum. Fissure of the anus (painful or irritable ulcer). Pectinosis. Abscess: Perianal, perirectal and pelvirectal. Fistulae. Cryptitis and papillitis. Proctitis and coloproctitis. Chronic ulcerative colitis. Dysentery. Ulceration. Tuberculosis of the anus, rectum and pelvic colon. Actinomycosis. Venereal diseases of the anus and rectum. Stricture of the rectum and pelvic colon. Prolapse of rectum and sigmoid. Diverticulosis and diverticulitis. Megacolon. Volvulus of the sigmoid colon. Intestinal obstruction of rectal and sigmoidal origin. Non-malignant tumors of the rectum and colon. Sacrococcygeal dimples, sinuses, cysts and tumors; Caudal appendages. Malignant tumors. Treatment of malignant tumors. Surgical treatment of carcinoma of the rectum and sigmoid. Sarcoma of the rectum. Colostomy. Rectal incontinence. Wounds, injuries and rupture of the rectum and sigmoid. Foreign bodies in the rectum and sigmoid flexure. Index.

Note: Based in part on James P. Tuttle's *Treatise on diseases of the anus, rectum and pelvic colon*, New York, 1906, and in part on the author's years of specialized experience in clinical and private practice. The book is written for practitioners and students of medicine who desire a single volume adequately covering the subject without being encyclopedic on the one hand or a mere compendium on the other. Theoretical discussion has been largely sacrificed to the main purpose of presenting practical methods of diagnosis and treatment. The second edition contains new material on treatment of hemorrhoids, histopathology of anus crypts, etiology and therapy of colitis, revised statistics on carcinoma, and other changes and additions.

Diseases of the Hand and Foot

DICKSON, FRANK DRAKE, AND REX L. DIVELEY

Functional disorders of the foot, their diagnosis and treatment. 202 illustrations. Second edition. Philadelphia: J. B. Lippincott Company, 1944. 352 p. illus. 23 cm. \$5.00. 2338

Contents: Evolutionary development of the human foot. Anatomy. Physiology. Primary causes of foot imbalance. Examination. The foot of childhood. Foot imbalance in childhood, in adolescence, and in the adult. Foot apparel. Hallux (bunion). Affections of the nails, of the skin—of the tarsal and metatarsal bones—of the heel. Functional disorders of the foot in relation to military service. Foot disorders, in relation to industry. Constitutional diseases affecting the foot. Foot strapping. Foot exercises. Bibliography. Index.

Note: This treatise, for the chiropodist as well as the general practitioner, deals chiefly with the clinical aspect of foot disorders with only such material on the evolutionary development of the foot, anatomy, and physiology as is necessary for an understanding of the functions of the organ. The book presents a practical and somewhat elementary statement of the causes and symptoms of foot conditions and the indicated therapeutic methods. The bibliography is arranged by subject and includes about 200 references.

KANAVEL, ALLEN BUCKNER

Infections of the hand; a guide to the surgical treatment of acute and chronic suppurative processes in the fingers, hand and forearm. Seventh edition, thoroughly revised, illustrated with 229 engravings, many in color. Philadelphia: Lea & Febiger, 1939. 503 p. illus. (part col.) 24 cm. \$6.00. 2339

Contents (abridged): Introduction: History. Scope and classification of types of infection. Part I, The anatomy of the hand with particular reference to infection. Part II, Localized infections and clinical entities. Part III, Lymphangitis, major fascial space and tendon sheath infections. Part IV, Complications, sequelae and after-treatment of infections of the hand.

Note: This work is based firmly on the anatomical facts involved in the treatment of these infections and the rules of diagnosis which are laid down, and the surgical incisions suggested in Part II are the logical outcome of the anatomical studies. Particular emphasis is placed on tenosynovitis, its early diagnosis, its treatment, the proper incisions, aseptic care and subsequent physical therapy. Throughout, the objective is not only to control infection but to preserve function as well. In the present edition greater emphasis than formerly has been placed upon this phase of the subject and various new procedures are included.

Orthopedics

BENNETT, GRANVILLE ALLISON, AND OTHERS

Changes in the knee joint at various ages; with particular reference to the nature and development of degenerative joint disease, by Granville A. Bennett, Hans Waive and Walter Bauer. New York: The Commonwealth Fund, 1942. 97 p. illus. 26 cm. \$2.50. 2340

Contents: Introduction. Historical evolution. Materials and methods of the study. Description of anatomical changes. Interpretation of articular findings. Concept of pathogenesis. Etiological considerations. Conclusions. Bibliography. Index.

Note: The authors obtained knee joints *post mortem* or following amputation from a considerable number of individuals ranging in age from one month to ninety years who, so far as was known, had no history or clinical evidence of articular disease. All joints were subjected to roentgenological examination, and then were opened and studied macroscopically and microscopically. The material studied not only lent itself to the original purpose of establishing a norm for the knee joint at each age decade, but also offered an excellent opportunity to describe in detail the development of degenerative joint disease, and, combined with a thorough review of the literature, provided the basis for a discussion of its nature and causes.

FOX, HERBERT

Chronic arthritis in wild mammals, being a description of lesions found in the collections of several museums and from a pathological service. Philadelphia: The American Philosophical Society, 1939. 77 p. illus. 30 cm. (American Philosophical Society. Transactions. New series, Vol. 31, part II) Paper, \$2.00. 2341a

Contents (abridged): Introduction: Intention and plan of work; source of material. Definition of arthritis applicable to wild mammals. Description of each case discovered. Analysis of specimens according to zoological order. Comment on arthritis as a physical change. Comment on zoological character of animals. Contrast of animals without arthritis. Ecology and habits of animals showing arthritis. Associated morbidity. Consideration of diet and age. Comment on body bulk and arthritis. Summary.

Note: This article records the results of an investigation of arthritis as seen in the skeletal material from many museums and from the autopsy service at the Zoological Garden in Philadelphia. Apparently this was the first observational study of the spontaneous pathology of this disease in animals to be made.

Among the 1,749 skeletons and autopsies which furnished the material, 77 cases were accepted as arthritic. This condition was discovered both in specimens which had been exhibited in menageries and in animals killed in their wild habitat, and the lesions in the two types were entirely comparable. This survey was made primarily in an attempt to increase the available information on the nature and causation of chronic arthritis in man. A further purpose was to throw some light on the functions of muscle and bone. The report is intended for physicians, physiologists, and veterinarians.

KRUSEN, FRANK HAMMOND

Physical therapy in arthritis, with a foreword by Melvin S. Henderson, M.D. With 21 illustrations. New York: P. B. Hoeber, Inc., 1937. 180 p. illus. 19 cm. \$2.25. 2342

Contents: Introduction. Home treatment. Rest. Applications of thermal agents. Heliotherapy. Massage. Manipulation. Splints. Shoes, bandages, and elastic supports. Exercise. Occupational therapy. Hydrotherapy. Management of intestinal function. Low frequency currents. Physical therapy in fibrositis. Institutional treatment. Fever therapy. Diathermy. Histamine and acetylcholine iontophoresis. Other institutional methods. Conclusions. References. Index.

Note: This book will be of interest to physiotherapists and nurses. The author states, however, that it was prepared chiefly as a guide for the general practitioner of medicine who wishes to give adequate attention to this phase of the complex problem of the treatment of patients suffering from arthritis. Since the majority of these patients are unable to continue treatment in hospitals indefinitely, the more extensive use of physical therapeutic measures is advocated, and suggestions are offered for the application of these measures in the patient's own home.

LEWIN, PHILIP

Backache and sciatic neuritis; back injuries, deformities, diseases, disabilities, with notes on the pelvis, neck, and brachial neuritis. Illustrated with 235 figures. Line drawings by Harold Laufman. Philadelphia: Lea & Febiger, 1943. 745 p. illus. 24 cm. \$10.00. 2343

Contents (abridged): Introduction. Embryology. Anatomy of the back. Physiology and biomechanics of the back. Symptoms of back disturbances. Roentgen-ray findings in back disorders. Laboratory diagnosis. The diagnosis of back disturbances. Basic principles of treatment of back disturbances. Operative procedures on the back. Operative treatment of back disorders. Congenital defects of the spine. Body posture—body mechanics. Scoliosis or lateral curvature of the spine. Internal derangements of the back. Traumatic and industrial causes of backache. Back disorders in the military services. Traumatic neurosis—compensation neurosis—war neurosis. Infectious diseases of the vertebrae. Arthritis of the vertebrae. The intervertebral disk syndrome. Infantile paralysis—anterior poliomyelitis. Neuritis—neuropathy—sciatica. The spinal arthropathies. Tumors of the vertebrae. Metabolic and deficiency disorders. The cervical region. Clavicle—sternum—ribs—scapula. Low-back lesions. Lumbosacral joint disorders. Sacro-iliac joint disorders. The coccyx. The pelvis. Equalization of length of lower extremities. Appendix.

Note: Designed for the general practitioner, and also of value to industrial surgeons and to those in the armed forces, as it covers the medico-legal and military aspects of the subject. It discusses the symptoms and treatment of backache, sciatica, and related conditions. The operative technique is outlined step by step, in accordance with the fundamental principles of modern surgery. There is an extensive bibliography.

MARGOLIS, HARRY MAURICE

Diagnosis and treatment of arthritis and allied disorders. With 140 illustrations. New York: P. B. Hoeber, Inc., 1941. 551 p. illus. 24 cm. \$7.50. 2344

Contents (abridged): Introduction: Chronic rheumatic disease; its socio-economic aspect. Part I, Atrophic arthritis: Classification. Pathology. Pathogenesis. Focal infection. Treatment. Part II, Prevention and correction of deformities, with illustrated guide. Physical therapy. Part III, Hypertrophic arthritis: Pathology. Clinical manifestations. Treatment. Part IV, Rheumatic

fever. Part v, Specific arthritides: Gouty, gonococcal, tuberculous arthritis. Part vi, some miscellaneous rheumatic conditions. Part vii, Pain in the shoulder and arm. Part viii, Low back and sciatic pain: Causes and treatment in various conditions. General bibliography. Index.

Note: This book is addressed primarily to the general practitioner and to the medical student. It is the author's hope, however, that it will also interest and aid the orthopedist, the general surgeon, clinical pathologist, roentgenologist, the otolaryngologist, and the dentist, all of whom may participate in the care of the patient with arthritis. The chief aims of the book are to present a frank account of present-day knowledge of arthritis and its related disorders, and to point to the relative simplicity and effectiveness of their treatment. Important newer concepts concerning etiology, pathogenesis, and treatment including the controversial aspects of focal infection, the relation of intervertebral disk protrusion to the pathogenesis of low back and sciatic pain, the present status of chrysotherapy in atrophic arthritis, and of therapy with sulfanilamide in gonococcal arthritis—have been critically appraised. In respect to treatment, emphasis is placed on the simplest way of achieving desired results, and on useful, inexpensive measures applicable in home treatment, particularly in relation to physiotherapeutic management.

STEINBROCKER, OTTO

Arthritis in modern practice; the diagnosis and management of rheumatic and allied conditions. Philadelphia: W. B. Saunders Company, 1941. 606 p. illus. 24 cm. \$8.00. 2345

Contents: Rheumatic disorders as a medico-social and economic problem. Classification of arthritis and related conditions. Rheumatoid arthritis. Osteoarthritis. Spondylitis. Rheumatic fever. Fibrositis. Gout. Specific infectious arthritis. Traumatic joint disorders. Miscellaneous arthropathies. Painful shoulder. Backache. Sciatica. Neuralgias in rheumatic disorders. Pain in diagnosis and treatment. Physical therapy in arthritis. Local and regional analgesic injections. Special diagnostic procedures. Painful feet, by John G. Kuhns. Posture and exercises, by John G. Kuhns. Splints and supports, by John G. Kuhns. Manipulative treatment, by John G. Kuhns. Operations and surgical procedures, by John G. Kuhns. Glossary of signs, syndromes and other data. Index.

Note: Designed for use by any doctor interested in rheumatic disorders, the aim of this book is to present in concise, practical form a source of commonly accepted diagnostic and therapeutic measures and procedures. Pathology and other aspects are given only such attention as practical considerations dictate. A special effort has been made to emphasize the place of long established but effective measures which, in the author's opinion, are too often slighted in the desire to try something new, and to make clear the indications and application of recent methods. Due consideration has likewise been given to problems of diagnosis, particularly as they bear on treatment. Bibliographies appear at the ends of chapters and there are 321 illustrations, most of them original photos and drawings.

Metabolic, Nutritional and Endocrine Diseases

AMERICAN MEDICAL ASSOCIATION. COUNCIL ON PHARMACY AND CHEMISTRY

Glandular physiology and therapy; a symposium prepared under the auspices of the Council on Pharmacy and Chemistry of the American Medical Association. Chicago: American Medical Association, 1942. 571 p. illus. 22 cm. \$2.50. 2345a

Contents: Introduction, by Morris Fishbein. Relationship of anterior lobe of the hypophysis to other endocrine glands, by Philip E. Smith. Growth hormone of the anterior lobe of the pituitary, by Herbert M. Evans. Corticotropic (adrenotropic), thyrotropic and parathyrotropic factors, by James B. Collip. The anterior lobe of the hypophysis in intermediary metabolism, by David L. Thomson. Lactogenic and mammogenic hormones, by Oscar Riddle. Gonadotropins of the anterior lobe of the pituitary and of chorionic tissue, by Earl T. Hingle and Louis Levin. The antihormones, by David L. Thomson, James B.

Collip and Hans Selye. Dysfunctions of the anterior lobe of the pituitary and their treatment, by Elmer L. Strynghaus. The neurohypophysis, by E. M. K. Gilling and Frances K. Odham. Physiology of the ovaries, by Edgar Allen. The estrogenic substances, by Edward A. Daisy. Corpus luteum hormone, by George W. Corner. Menstruation, by George W. Bartelmez. Ovarian dysfunctions and their treatment, by C. Frederic Fuhrmann. Ovarian tumors of endocrine nature, by Emil Novak. Physiology of the testis, by Carl R. Moore. Therapeutics of testicular dysfunction, by James B. Hamilton. The function of the adrenal cortex, by Edward C. Kendall. Adrenal cortex insufficiency, by Robert F. Ipeb. The adrenal medulla, by Carl F. Oeri and Arnold D. Welch. The adrenogenital syndrome, by Oskar Wintersteiner. Clinical significance of hormone assays, by S. Charles Freed. The assay of gonadotropins and of gonadal hormones, by Reuben G. Gustavson and Fred E. D'Amour. The physiology of the thyroid gland, by Jacob Derman. Thyroid dysfunctions and their treatment, by Willard O. Thompson. The parathyroids—physiology and therapeutics, by Fuller Albright. Activated sterols in the treatment of parathyroid insufficiency, by Franklin C. McLean. The pancreas as an organ of internal secretion, by E. T. Waters and Charles H. Best. Therapy with preparations of pancreas, by Russell M. Wilder. Internal secretions of the gastrointestinal tract, by Andrew C. Ivy. Present status of commercial endocrine preparations, by S. Charles Freed. Index.

Note: The first collection of articles published under this title appeared in 1927, the second in 1935. This volume contains much new material, particularly on the endocrinology of the female reproductive mechanism, new aspects of our knowledge of the adrenal and the pituitary, the antihormones, the interrelationships of various portions of the glandular apparatus. Because of the constant appearance of new contributions in this field, the text of the articles as they had appeared in the *Journal of the American Medical Association* had to be extensively revised before inclusion in the book.

BEARDWOOD, JOSEPH THOMAS, JR., AND HERBERT T. KELLY

Simplified diabetic management; diets prepared with the collaboration of Elsie G. Watt. Third edition revised. Philadelphia: J. B. Lippincott Company, 1939. 221 p. illus. (part col.) 19 cm. \$1.50. 1944 2346

Contents (abridged): I. History and general consideration of diabetes: Historical and clinical facts. Heredity. Obesity. Nervous factors. Symptoms. Diagnosis. Principles of treatment. Dietetic treatment. Treatment with insulin. Measurement of food. Essentials of calculation. Unit method. Percentage method. Use of diet prescription chart. Vitamins and their importance in the diet. The minerals. The importance of water in the diet. Vitamin content of food. Insulin. Method of injecting insulin. Hypoglycemic reaction (insulin shock). Newer insulins. Protamine zinc insulin. Crystalline insulin. Treatment of diabetes in children. Diabetic coma. Infection. Surgery in diabetes. Importance of frequent examinations. Diabetic hygiene. Laboratory tests. Diabetic doctrines. Table of weights. Table for conversion of pounds into kilograms. II. Unit method charts. Adaptation of the unit method in various conditions. Specimen diets. Postoperative. Obesity. Tuberculosis. Nephrosis. Gastritis. Peptic ulcer. Colitis. Bulky diet. Cardiac decompensation etc. Preparation of diets for diabetic children, and sample sets. Food values. Diabetic recipes. Salt contents of various foods. Patient's diet allowance record. Diet prescription chart. Index.

Note: The first section of this work contains only what a diabetic needs to know in order to cooperate intelligently in the management of his case. The second section is somewhat more detailed and technical, and is directed in part to the well-trained diabetic and in part to the physician. In the third section are grouped various food values, recipes, and suggested menus. In this edition, the chapter on insulin has been revised to take cognizance of two new insulins. The section on vitamins and their place in the diet of a diabetic has been added to and has been simplified.

CROTTI, ANDRÉ

Diseases of the thyroid, parathyroids and thymus. Third edition, thoroughly revised and enlarged, with 262 illustrations and 39 plates in color. Philadelphia: Lea & Febiger, 1938. 1229 p. illus. (part col.) 27 cm. \$20.00. 2347

Contents (abridged): Anatomy and embryology of the thyroid. Normal physiology of the thyroid. Functional interrelations of the thyroid and organs of internal secretion. Pathology of thyroid gland. Anatomico-pathological relation of goiter to surrounding structures. Clinical symptoms and diagnosis of goiter. Intrathoracic goiter. Circular goiter. Simple goiter and pregnancy. Pathology of thyroid insufficiency. Masked hypothyroidism. Congenital athyroidism and cretinism. Etiology of endemic goiter and cretinism. Medical treatment of simple non-toxic goiter. Thyroid grafting. Thyrotoxic goiter. Nervous and mental symptoms in thyrotoxicosis. Sensory disturbances and insomnia in thyrotoxicosis. Cutaneous symptoms in thyrotoxicosis. Blood changes in thyrotoxicosis. Metabolism in Graves' disease. Surgical technic of operations upon the thyroid gland. Operative technic for thyroidectomy. Operating room technic. Postoperative treatment. Sympathectomy. Tumors of the thymus. Surgical technic of thymectomy.

Note: An exhaustive treatise on the thyroid, the thymus and the parathyroid, written not only for the surgeon, but also for the entire medical profession. Balance is maintained between the fundamental scientific aspects and the practical considerations. A careful discussion of the pitfalls in operating for goiter is given. There is a comprehensive bibliography.

DAVENPORT, CHARLES BENEDICT

The genetical factor in endemic goiter. Washington, D.C.: Carnegie Institution of Washington, 1932. 56 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 428) Paper, \$0.75; cloth, \$1.25. 2348

Contents: Statement of problem. Materials and methods. Results. Hypotheses and their testing. Summary of findings and conclusions. Discussion. Appendix. Bibliography. Pedigree charts.

Note: A study of goitrous families in a mountain valley in western Maryland which attempts to show that a combination of the genes in the two chromosomes is necessary to the development of goiter, and that the autosomal gene is not always recessive.

DU BOIS, EUGENE FLOYD

Basal metabolism in health and disease, illustrated with 79 engravings. Third edition. Philadelphia: Lea & Febiger, 1936. 494 p. illus. 24 cm. \$5.00. 2348a

Contents: Part I, Metabolism in health: A brief history of the study of the respiratory metabolism. Carbohydrate, fat and protein. A brief review of certain laws of physics. The mechanism of the loss of heat from the body. The gases of the body. The general principles of respiration apparatus and the methods of calculation. The estimation of the surface area of the body. Factors which influence the normal metabolism. Theories concerning the basal metabolism. Part II, Metabolism in disease: Undernutrition. Overnutrition and obesity. Basal metabolism in diabetes. Diseases of the thyroid. Basal metabolism and the adrenal pituitary and sex glands. Basal metabolism in diseases of the blood. Metabolism in diseases of the heart and kidneys. Fever, water metabolism and body weight in disease. Influence of the diseases of the nervous system on basal metabolism. Drugs and miscellaneous conditions. Evaluation of results of basal metabolism tests. Author and subject indexes.

Note: This book was written for "those engaged in the practice of medicine and surgery, for medical students, for physiologists and for dietitians. The aim has been to bring basal metabolism out of the realm of pure physiology into the domain of clinical medicine. Established areas of the subject are presented authoritatively, and a new chapter is given dealing with the physical channels of heat loss."

DUNCAN, GARFIELD GEORGE

Diabetes mellitus and obesity. With an introduction by Thomas McCrae. Philadelphia: Lea & Febiger, 1935. 215 p. illus. 20 cm. \$2.75. 2349

Contents: Part I, Diabetes mellitus: General considerations. Food. Food metabolism. The symptoms and diagnosis of diabetes mellitus. Diabetes mellitus in children and in the elderly. The prevention and treatment of diabetes mellitus. Complications of diabetes mellitus. The clinic for diabetes and ward routine. Laboratory methods. Part II, Obesity: Introduction. Simple obesity (exogenous). The prevention and treatment of simple obesity. Endogenous obesity. Appendix.

Note: This work is designed to give the general practitioner and the medical student a good working knowledge of diabetes mellitus and obesity and their complications. The author has endeavored to eliminate the purely scientific, theoretical, and controversial matter in an effort to achieve simplicity and clarity. Attention is given to obesity because of its relation to diabetes.

DUNCAN, GARFIELD GEORGE, EDITOR

Diseases of metabolism, detailed methods of diagnosis and treatment; a text for the practitioner. Fully illustrated, including 7 plates in color. Philadelphia: W. B. Saunders Company, 1942. 985 p. illus. (part col.) 25 cm. \$12.00. 2350

Contents: Introductory considerations, by Garfield G. Duncan. Carbohydrate metabolism, by C. N. H. Long. Protein metabolism, by Abraham White. Lipid metabolism, by Abraham White. Mineral metabolism, by Abraham Cantarow. Water balance in health and disease, by John P. Peters. Nutritional and metabolic aspects of disorders of the blood, by Leandro M. Tocantins. Vitamins and avitaminoses, by Tom D. Spies and Hugh R. Butt. Undernutrition, by L. H. Newburgh. Obesity, by Frank A. Evans. Xanthomatoses, glycogen disease, and disturbances of intermediary metabolism, by Edward Mason. Gout, by Walter Bauer and Friedrich Klemperer. Hyperinsulinism, by Garfield G. Duncan. Diabetes insipidus, by Garfield G. Duncan. Melituria, by Abraham Cantarow. Diabetes mellitus, by Garfield G. Duncan. Appendix, by Garfield G. Duncan. Composition of foods. Heights and weights of children between one and four years of age. Height, weight, age tables. Heights and weights of 136,504 women fifteen or more years of age. Heights and weights of 221,819 men fifteen or more years of age. Determination of basal energy requirements. Index.

Note: The aim is to provide the physician and the medical student a practical basis for the understanding, diagnosis, and treatment of the various metabolic disorders. Fundamentals are reviewed and interpreted in the light of recent investigative work. The gap is bridged between the investigator employing chemical and physiological methods and the physician who applies the results of laboratory investigation in the identification and treatment of disease. Subjects about which much controversy exists have been for the most part omitted, as have advanced considerations which have little or no practical application. Clinical considerations are detailed and laboratory data supplied as aids in understanding, aids to diagnosis, and aids in the conduct of treatment. Endocrine disturbances have been included only when they are directly related to disorders generally recognized as metabolic diseases. References are given at the ends of chapters.

GOLDZIEHER, MAXIMILIAN ALEXANDER

The adrenal glands in health and disease. Philadelphia: F. A. Davis Company, 1944. 727 p. illus. 23 cm. \$8.00. 2351

Contents (abridged): Development and anatomy of the adrenals. Histology. Morbid anatomy. Physiology. Adrenalectomy. Transplantation of the adrenals. Cortical extracts. Function of the adrenal cortex. Sex factors. Protective effects. Stimuli. Adrenalin and its effects. Function of the pheochrom tissue. Correlation with other endocrine glands. Diagnostic procedures. Acute adrenal insufficiency in infants, children, and the adult. Chronic adrenal insufficiency. Medullary hyperadrenia, hypertension, and sympathicotonia. Virilism. Diabetes of the bearded woman. Feminization. Cushing's syndrome. Adrenal tumors and surgery. Adrenals in fetal life, infancy, pregnancy, aging, nutrition, vitamins, environment, obesity, and cardiovascular disease. Relation to other endocrinopathies. Allergy. Skin diseases. Nervous and mental diseases. Adrenals and the eye. Adrenals and cancer. Index.

Note: This is an extensive revision of the author's earlier work, *The adrenals, their physiology, pathology, and diseases*, New York, 1929. The present work, intended for both the medical student and the specialist, considers in detail the clinical problems based on personal experience in treating endocrine patients. Recent developments in the field of histology and morbid anatomy are also discussed, as well as the physiology of the pheochrom tissue, new material on cortical physiology, and the classification of adrenal diseases in accordance with present-day knowledge of the physiologic and pathologic significance of the cortex. A special section is devoted to the participation of the adrenals in varied diseases of non-adrenal origin and to the association of adrenal disturbances with abnormal environmental conditions. Many case histories are presented and bibliographies follow each chapter.

GOLDZIEHER, MAXIMILIAN ALEXANDER

The endocrine glands. Illustrated with two hundred and seventy-one figures. New York: D. Appleton-Century Company, Incorporated, 1939. 916 p. illus. 25 cm. \$10.00. 2351a

Contents (abridged): General principles of endocrinology. History. Internal secretion. Vegetative nervous system. Morphogenetic effects of hormones. Aging and rejuvenation. Heredity and constitution. Cancer. Endocrine interrelations. Endocrinopathies. The thyroid. Anatomy. Physiology. Morbid anatomy. Classification of thyroid disease. The parathyroids. Embryology. Anatomy. Physiology. Hypoparathyroidism. Hyperparathyroidism. Thymus. Embryology. Anatomy. Physiology. Morbid anatomy. Clinical significance of the thymus. Pituitary. Diseases of the pituitary gland. Disturbances of growth. Disturbances of nutrition. The pineal gland. Clinical manifestations of pineal disease. The pancreas. Diabetes mellitus. Treatment. Hyperinsulinism. The adrenals. Adrenal insufficiency. Medullary hyperadrenia. Hyperinterrenalism. Biology of sex. Ovary. Hypoovarian conditions. Testes. Disturbances of endocrine function. Lack or insufficiency of testicular function.

Note: This volume for students and clinicians is designed to assist in the diagnosis and treatment of endocrine disorders by systematizing all important recent advances in physiology and pathology. Evidence to support statements is supplied. The author has supported his descriptions with a wealth of photographic plates on histology and case histories, and he has inserted bibliographies scrupulously. The index is extensive.

GREENBLATT, ROBERT BENJAMIN

Office endocrinology. With a foreword by G. Lombard Kelly. Second edition. Springfield, Ill.: Charles C Thomas, 1944. 243 p. illus. 23 cm. \$4.00. 2352

Contents: Part I, Female endocrinology: Physiology of menstruation. Embryology of ovary. Vaginal smear. Diagnostic curettage. Dysmenorrhea. Amenorrhea. Mechanism and therapy of uterine bleeding. Hormonal therapy of uterine fibromyomas. Nervous tension states. Disorders of micturition due to endocrine imbalance. The climacteric. Ovulation and ovarian stimulation; associated disturbances. Sterility. Habitual abortion. Practical application of Friedman test. Nausea and vomiting of endocrine origin. Influence of glands of internal secretion on the breast. Pruritus vulvae as related to endocrine disturbances. Obesity. Acne in adolescence. Endocrine headaches. Sexual libido in the female. Pan-hypopituitarism. Hirsutism. Incretory tumors of the ovary. Part II, Hormonology: Estrogens. Diethylstilbestrol. Progesterone. Androgens. Adrenal cortical hormones. Pellet implantation. Thyroid. Anterior pituitary hormones. Posterior pituitary. Part III, Male endocrinology: Hypogonadism. Cryptorchism. Male sterility and impotence. Gynecomastia. Male climacteric. Estrogen therapy in the male. Index.

Note: This book was written, not for use as a textbook, but to serve as a "refresher" and guide for practitioners who are not working primarily in the field of endocrinology. The material was taken from lectures delivered by the author to a post-graduate class, but many of the theoretical and experimental data have been deleted and emphasis has been placed on the aspects of endocrinology which have practical and clinical application. In this second edition much of the material has been revised and new chapters have been added; the entire section on the more common endocrine problems in the male is new.

HERTZLER, ARTHUR EMANUEL

Diseases of the thyroid gland, presenting the experience of more than forty years. With 495 illustrations. New York: P. B. Hoeber, Inc., 1941. 670 p. illus. (part col.) 26 cm. \$8.50. 2353

Contents: General considerations. Normal morphology of thyroid gland. General pathology of goiter. Goiter in childhood (adolescent goiter). Nontoxic nodular goiter (chronic goiter of Davison, nontoxic adenoma). Toxic nodular goiter. Cardiotoxic goiter. Atypical toxic goiter (interstitial goiter). Toxic diffuse goiter (acute goiter of Davison, exophthalmic goiter, Graves' disease, Basedow's disease). Thyroiditis. Myxedema. Fetal adenomas. Tumors of thyroid gland. Goiters in unusual places (aberrant goiters). Hospital management of goiter patients, by Victor E. Chesky. Hepatic insufficiency in toxic goiter and its treatment, by C. Robert Schmidt. Study of the after-course, by William S. Walsh. Topographic anatomy of thyroid gland. Technique of operations on thyroid gland. Index.

Note: In this book the author records his long experience in treating diseases of the thyroid gland, offers evidence to substantiate his claim that total thyroidectomy does not produce myxedema, gives a detailed description of his operative technique, and suggests that study of the histochemistry of the thyroid may reveal the basic factor in goiter heart. The book is intended for diagnostician, general practitioner, and surgeon. The illustrations are excellent.

JENSEN, HANS F.

Insulin: its chemistry and physiology. New York: The Commonwealth Fund, 1939. 264 p. 23 cm. \$2.00. 2354

Contents: History of insulin. Preparation of insulin. Preparation and chemistry of crystalline insulin. Standardization of insulin. Administration of insulin. Insulin substitutes. Physiological action of insulin. Author index. Subject index.

Note: This book records and evaluates the important literature on the chemistry and physiological action of insulin. The author participated for several years in the chemical researches on insulin conducted at the Johns Hopkins University after the late Dr. John J. Abel and his associates had succeeded in 1926 in obtaining the hormone in crystalline form. In this volume are included observations made by the author and his associates in their chemical research, and also by various other investigators. The deductions which may be drawn from the results thus far obtained are presented. The author has attempted to correlate all the information on the influence of insulin on carbohydrate metabolism. The clinical aspects are referred to briefly.

JOSLIN, ELLIOTT PROCTOR

Diabetes; its control by the individual and the state. Cambridge: Harvard University Press, 1931. 70 p. illus. 17 cm. (Harvard health talks) \$1.00. 2355

Note: A brief summary of the substance of a public lecture delivered at the Medical School of Harvard University. Discusses the current knowledge of the disease, its causes, proper diet, use of insulin, statistical data, need for exercise in diabetic patients, cleanliness, and state control, including prevention by diffusion of knowledge and care of diabetic children plus the continuous treatment of older patients.

JOSLIN, ELLIOTT PROCTOR

A diabetic manual for the mutual use of doctor and patient. Seventh edition, thoroughly revised. Philadelphia: Lea & Febiger, 1941. 238 p. illus. (part col.) 20 cm. \$2.00. 2356

Contents (abridged): Diabetes. The story of diabetes and insulin. Questions and answers for diabetic patients. Diabetic arithmetic. Hygiene for the diabetic. The diet of normal individuals. The diet of diabetic individuals. The treatment of diabetes. Acid intoxication—acidosis—diabetic coma. The differences between diabetic coma and insulin reactions. Care of the teeth. Gangrene and infections of the skin. Surgery in diabetes. Expectation of life—prognosis. The prevention of diabetes. Heredity. Weight peculiarities. Diabetic children. Foods and their composition. Selected laboratory tests useful in diabetic treatment. What can you do to help diabetics and to conquer the disease?

Note: The objective of this work is to give the diabetic the information that will enable him to live a normal and useful life. It clarifies the doctor's instructions, simplifies diet calculations and presents the other elements of treatment which he can do for himself. It shows how to utilize the satisfying diets now made possible by insulin and it gives the patient the benefit of the new knowledge concerning this disease and the advances that have been made in its prevention and control.

JOSLIN, ELLIOTT PROCTOR, AND OTHERS

The treatment of diabetes mellitus, by Elliott P. Joslin, Howard F. Root, Priscilla White, and Alexander Marble. Seventh edition, thoroughly revised. Philadelphia: Lea & Febiger, 1940. 783 p. illus. 24 cm. \$7.50. 2357

Contents (abridged): Incidence of diabetes. Etiology and prevention of diabetes. Physiology of diabetes, rev. by Alexander Marble. Pathology and causes of death in diabetes, rev. by Howard F. Root. Examination of the urine and blood in diabetes, rev. by Alexander Marble. Diet in health and diabetes. Diagnosis, classification, symptomatology and prognosis of diabetes. Treatment of diabetes. Hypoglycemia due to insulin (insulin reactions), rev. by Alexander Marble. Hyperinsulinism, by Alexander Marble. Diabetic coma, rev. by Alexander Marble. Allergy and diabetes, by L. Tillman McDaniel. Infections in diabetes, rev. by Alexander Marble. The digestive system in diabetes, rev. by Howard F. Root. The nervous system in diabetes, rev. by Howard F. Root and A. D. Baldwin. Blood complications in diabetes, rev. by Howard F. Root. Tuberculosis complicating diabetes, by Howard F. Root. Cancer complicating diabetes, by Alexander Marble. Syphilis and diabetes, rev. by L. Tillman McDaniel. Surgery and diabetes, rev. by Howard F. Root. Clinical disorders of the glands of internal secretion complicating diabetes, rev. by Howard F. Root. Diabetes in childhood, by Priscilla White. Pregnancy and diabetes, by Priscilla White. Non-diabetic glycosuria, by Alexander Marble. Appendix: Height and weight tables. Index.

Note: Scientific findings and clinical experience, based upon the treatment of 19,000 diabetics and glycosurics over a period of forty years, are presented in this seventh edition. Recent developments in the field are covered by thorough revision of chapters, and a new chapter on allergy and diabetes has been added. References are given as footnotes.

LOEWENBERG, SAMUEL AARON

Clinical endocrinology. Foreword by Hobart A. Reimann. Second revised edition. With 194 illustrations and 37 charts and tables. Philadelphia: F. A. Davis Company, 1941. 883 p. illus. 25 cm. \$8.00. 2357a

Contents (abridged): General introduction. The pineal gland. The pituitary gland, its anatomy, physiology and pathology. Diseases of pituitary origin and their treatment. The thyroid gland. The parathyroid glands. The thymus gland. The pancreas. The adrenals. The female gonads. The male gonads. Undetermined endocrine activities. Significance of laboratory findings. Résumé of the commoner endocrinopathies and their therapies. Available endocrine products and their therapeutic use. Indexes.

Note: A concise yet comprehensive presentation of the ductless glands and their diseases and treatment, intended as a text and reference work for students and physicians. Interesting conditions are illustrated by appropriate photography and a large number of case histories are summarized. There are extensive bibliographies at the end of each chapter. The advances in the knowledge of the subject and in the use of the various potent endocrine products between 1937 and 1941 are incorporated in the second edition, the sections on treatment throughout the book have been revised, and there are numerous additions to the bibliographies.

MCCLENDON, JESSE FRANCIS

Iodine and the incidence of goiter. Minneapolis: The University of Minnesota Press, 1939. 126 p. illus. 28 cm. \$5.00. 2358

Contents: The distribution of iodine. The distribution of goiter and cretinism. Determination of iodine. Index.

Note: This book is concerned with the geographical distribution of iodine, its place in nutrition, and its relation to goiter incidence; it does not aim to cover the anatomy of the thyroid gland, the classification of goiter, or anything directly concerned with medical treatment. Wherever possible data on goiter rates are inversely correlated with the distribution of iodine.

RONY, HUGO ROHONYI

Obesity and leanness. Illustrated with 32 engravings. Philadelphia: Lea & Febiger, 1940. 300 p. illus. 24 cm. \$3.75. 2359

Contents: Synopsis of the physiology of fats and fat tissue. The pathogenesis of obesity and leanness. Clinical aspects of obesity and leanness.

Note: A comprehensive treatment of obesity and leanness, which are treated as facets of a single problem. Obesity and leanness are now regarded as something more than disturbances of caloric balance. Pertinent observations in the fields of endocrinology, neurology, intermediary metabolism, cell physiology, and genetics have been sifted by the author and the reliable data described.

SEVRINGHAUS, ELMER LOUIS

Endocrine therapy in general practice. Fourth edition. Chicago: Year Book Publishers, Inc., 1942. 243 p. illus. 21 cm. \$2.75. 2360

Contents: The biologic significance of hormones. Systematic endocrinology. The posterior pituitary. Growth factor. Thyroid. Parathyroids. Mammary glands. Pancreas. Diabetes mellitus. Adrenals. Ovaries. Testes. Endocrinopathies in children and adolescents. Obesity. Subject index.

Note: Designed to give general physicians a workable understanding of treatment of disorders of the glands of internal secretion. Subject matter is arranged not by syndromes, but according to accepted concepts of anatomy and physiology. A chapter is devoted to each gland, and chapters are divided into sections on function, diagnosis, therapy, available preparations, and prognosis. Rare diseases and symptom-complexes are not discussed; the work is confined to conditions frequently encountered in general medical practice. In the fourth revised edition, there are chapters on obesity and on endocrinopathies in children and adolescents. The therapy of diabetes mellitus is presented exhaustively, with diet scheme, diet lists, etc. Prescriptions of vitamins in connection with endocrine therapy in growth abnormalities, physical therapy, psychotherapy, X-ray treatment, etc., are considered.

WERNER, AUGUST ANTHONY

Endocrinology, clinical application and treatment. Second edition, thoroughly revised. Illustrated with 327 engravings and a colored plate. Philadelphia: Lea & Febiger, 1942. 924 p. illus. (part col.) 24 cm. \$10.00. 2361

Contents: The autonomic nervous system. Calorimetry. The glands in general. Known and postulated hormones of the endocrine glands. The pituitary gland. The gonads or sex glands. Sterility. Ovarian tumors. Lactation. The thyroid gland. The parathyroid glands. The adrenal glands. The pancreas. The thymus gland. The pineal gland (epiphysis cerebri). Obesity. Diseases affecting osseous metabolism. The skin and the endocrines. The hair. The teeth. Technique of intramuscular injection. Diagnosis of endocrine conditions. Some commercially available endocrine products.

Note: This work is designed for the general practitioner. The possibilities of endocrinology are stressed, and case histories are used liberally for illustration. The book has been extensively rewritten and expanded by 252 pages in this edition.

WILDER, RUSSELL MORSE

Clinical diabetes mellitus and hyperinsulinism. Philadelphia: W. B. Saunders Company, 1940. 459 p. illus. (part col.) 24 cm. \$6.00. 2362

Contents: Sugar of the blood. Definition and diagnosis of diabetes mellitus. Pathogenesis and prevention. Prognosis and course. Requirements for effective therapy. Substitution therapy. Diet therapy. Cookery. Other therapeutic procedures. Acidosis and coma. Complicating infections. Surgical operations. Genitourinary and gynecologic complications. Pregnancy. Diseases of thyroid and other glands complicating diabetes. Complicating disorders of the eye, the nervous system, the skin, and digestive organs. Hemochromatosis. Arteriosclerosis, and diseases of the heart. Definition and diagnosis of hyperinsulinism. Incidence and pathology. Symptoms and course. Treatment. Appendix. Bibliographic index. Index of subjects.

Note: The general practitioner will find in this book the information necessary for a clinical understanding of diabetes and hyperinsulinism. It presents the methods used by the author at the Mayo Clinic. One of the more valuable aspects is the attention given to diseases and conditions that may complicate diabetes, as well as the discussions of emergencies, surgery of the diabetic, etc. The chapter on hemochromatosis is based (at time of publication) on an experience with more cases than heretofore have been reported from any one hospital or clinic. The appendix includes units of measure, food values, height and weight tables, diets, etc.

WILDER, RUSSELL MORSE

A primer for diabetic patients; an outline of treatment for diabetes with diet, insulin and protamine-zinc insulin, including directions and

charts for the use of physicians in planning diet prescriptions. Seventh edition, reset. Philadelphia: W. B. Saunders Company, 1941. 184 p. illus. (part col.) 18 cm. \$1.75. 2363

Contents: What is diabetes, what causes it, what can be expected from treatment? Tests of urine for sugar and diacetic acid. Insulin and protamine-zinc insulin and their administration. Complications of diabetes. Prevention and treatment of diabetic acidosis. Other complications of diabetes, including gangrene. Prevention of gangrene. The diet (for the physician). Substitutions for foods in standard diets; recipes. Food facts. Weighing food, metric system, food tables, other tables. Blank forms for menus and diet orders. Food nomogram for calculating food allowance according to height, weight, age, sex and activity. Standard diets for adults and children. Index.

Note: This book was designed to acquaint the diabetic patient with his condition and to promote his utmost cooperation with his doctor. It is written in simple, non-technical language that can be understood by the average layman. One of the features is a self-quiz, through which the patient can learn just how much, or how little, he knows about his condition and its management. Under the questions are given the pages of the book on which the correct answers will be found. For the seventh edition the improved procedure of administering protamine-zinc insulin was added. This is the procedure that enables patients to maintain a sufficient supply of insulin during the night without frequent injections. The chapter on care of the feet was rewritten, the chapter on substitutions for food in standard diets was revised, and other changes made.

YOUMANS, JOHN BARLOW, AND E. WHITE PATTON

Nutritional deficiencies; diagnosis and treatment. 16 illustrations. Second edition. Philadelphia: J. B. Lippincott Company, 1943. 389 p. illus. 23 cm. \$5.00. 2364

Contents: Status of deficiency diseases. Vitamin A deficiency. Thiamin (vitamin B₁) deficiency. Nicotinic acid (niacin) deficiency. Riboflavin deficiency. Ascorbic-acid (vitamin C) deficiency. Vitamin D and calcium deficiencies. Vitamin E (tocopherol) deficiency. Vitamin K deficiency. Protein deficiency. Iron deficiency. Iodine deficiency. Other possible nutritional deficiencies. Summary of the vitamins and the laboratory diagnosis of deficiency diseases. Index.

Note: This book brings together such information as is necessary for the understanding and proper management of nutritional deficiencies in practice. Although the vitamins occupy a large part of the book, other essential food factors, whose deficiency leads to recognizable signs and symptoms, are included to complete a logical grouping of diseases whose main characteristic is that they are caused by the absence, rather than the presence, of the etiologic agent. A discussion of the nature, function, and sources of the various food factors is given to provide the necessary background for an understanding of the diseases, but the book is not intended as a treatise on nutrition. Various clinical phases of nutritional diseases are presented, with discussions of prevention and curative treatment. The techniques of laboratory tests are given in the appendix. The second edition contains new data on vitamin A deficiency, thiamin, nicotinic acid, and vitamin C deficiency.

Neurology

ASSOCIATION FOR RESEARCH IN NERVOUS AND MENTAL DISEASE

The diseases of the basal ganglia; proceedings of the Association, December 20 and 21, 1940, New York, with 268 illustrations and 15 tables. Baltimore: The Williams & Wilkins Company, 1942. 719 p. illus. (part col.) 23 cm. \$10.00. 2369

Contents: Historical introduction: The basal ganglia and their diseases, by F. H. Lewy. A summary of fiber connections of the basal ganglia with each other and with other portions of the brain, by James W. Papez. Efferent fibers of the corpus striatum,

by S. W. Ranson and S. W. Ranson, Jr. The vascular supply of the strio-pallidum, by Leo Alexander. Functions of the brainstem in preparations with extensive lesions of the neocortex, by David McK. Rioch. Relation between pyramidal and extrapyramidal function, by Fred A. Mettler. Corticostriatal interrelations in monkey and chimpanzee, by Margaret A. Kennard and J. F. Fulton. Physiological neuroanatomy of the cortico-striatal connections, by J. G. Dusser de Barenne, Hugh W. Carol, and Warren S. McCulloch. The role of the globus pallidus and substantia nigra in the production of rigidity and tremor. A clinicopathologic study of paralysis agitans, by Charles Davison. The fundamental types of histopathologic changes encountered in cases of athetosis and paralysis agitans, by Leo Alexander. Cinematographic demonstration of types of extrapyramidal syndromes, with remarks on differential diagnosis, by S. Philip Goodhart. Physiology of motor innervation in the dyskinesias, by Paul F. A. Hoefer. Evidences of improvement in cases of athetosis treated by re-education. The use of graphs as measurements, by Winthrop Morgan Phelps. Treatment of athetosis by retraining, by Earl R. Carlson. Treatment of paralysis agitans with drugs, by Stanley M. Dillenber, et al. Cortical extirpation in the treatment of involuntary movements, by Paul C. Bucy. Surgical treatment of dystonia. With report of 100 cases, by Roland M. Klemme. Modification of alternating tremors, rigidity and festination by surgery of the basal ganglia, by Russell Meyers. Operative treatment of diseases characterized by involuntary movements (tremor, athetosis), by Tracy J. Putnam. Index.

Note: Volume XXI of the *Research publications* of this Association. All papers are on subjects having general interest and they deal with new material, frequently contributions made by the authors. Of interest to physiologists and neurologists. Bibliographies are given.

ASSOCIATION FOR RESEARCH IN NERVOUS AND MENTAL DISEASE

Infections of the central nervous system; an investigation of the most recent advances; the proceedings of the Association, New York, December 28th and 29th, 1931; editorial board: Israel Strauss, M.D., Thomas K. Davis, M.D., Angus M. Frantz, M.D. With 84 illustrations and 31 tables. Baltimore: The Williams & Wilkins Company, 1932. 563 p. illus. 23 cm. \$7.50. 2370

Contents: Section I, Poliomyelitis and epidemic encephalitis: Inflammatory disease of the central nervous system, by Joseph H. Globus. Relation of filterable viruses to diseases of the nervous system, by Thomas M. Rivers. Pathways of infection to the central nervous system. 1. Anatomical approach to the central nervous system by blood and lymph, by David Orr. 2. Clinical aspects, by Foster Kennedy. The poliomyelitis problem from the point of view of its epidemiology, by W. Lloyd Aycock. Critical résumé of the treatment of the acute stage of anterior poliomyelitis, by Lewis J. Pollock. Work of the International Committee for the Study of Infantile Paralysis, by William H. Park. Epidemiology and serum treatment of poliomyelitis, by William H. Park. Etiology of epidemic encephalitis, by Frederick P. Gay. Etiology of epidemic encephalitis, by Earl B. McKinley. Elective localization and cataphoretic velocity of streptococci as isolated in cases of encephalitis and other diseases of the nervous system, by Edward C. Rosenow and Lloyd B. Jensen. Clinical, bacteriological and epidemiological aspects of encephalomyelitis, by Israel Strauss, A. M. Rabiner, and Sol. W. Ginsburg. Treatment of epidemic encephalitis. Review of the work of the Matheson Commission, by Josephine B. Neal and Inez A. Bentley. Etiological problems of human encephalitis, by Hans Zisser. Section II, Meningitis: Histologic studies in meningitis, by George B. Hassin. Bacteriology, by Anna W. Williams and Ruth Gosling. Epidemiology, by George W. McCoy. Pathogenesis of the changes in the cerebrospinal fluid in meningitis, by Frank Fremont-Smith. Bacterial meningitis, by Josephine B. Neal, Henry W. Jackson, and Emanuel Appelbaum. Septicemic meningococcus meningitis: the Detroit outbreak of 1928 to 1931—epidemiology and serum treatment, by J. E. Gordon. Meningitis in infancy, by Roger H. Dennett. Anti-meningococcal serum, by Benjamin White and Elliott S. Robinson. Newer methods for the prophylaxis and treatment of meningitis. With special reference to streptococcus and pneumococcus meningitis, by John A. Kolmer. Summary and critique of symposium on meningitis, by Josephine B. Neal. Index.

Note: Volume XII of the *Research publications* of this Association. Limitation of the subjects to poliomyelitis, epidemic encephalitis, and meningitis is explained by the editor as due to limitation of time to two days, and the intense present-day im-

portance of these subjects. Of interest to internists, pediatricians, and all those concerned with study of the various aspects of these diseases. Bibliographies are given with most of the chapters.

ASSOCIATION FOR RESEARCH IN NERVOUS AND MENTAL DISEASE

The role of nutritional deficiency in nervous and mental disease; proceedings of the Association, December 19 and 20, 1941, New York. With 23 illustrations and 8 tables. Baltimore: The Williams & Wilkins Company, 1943. 215 p. illus. 23 cm. \$4.00. 2371

Contents: Contributions of physiological investigations, by George R. Cowgill. Relationship of enzymes to deficiency, by C. A. Elvehjem. Problem of nutritional deficiencies, by George R. Minot. Role of vitamins in brain metabolism, by Harold E. Himwich. Thiamin content of human tissue, by Joseph W. Ferrebee, Norman Weissman, Donald Parker, and Philip S. Owen. Pathology of vitamin B group deficiencies, by H. M. Zimmerman. Vitamin A and the nervous system, by S. B. Wolbach and O. A. Bessey. Effects of vitamin E deprivation in various laboratory animals, by A. M. Pappenheimer. Symptoms and signs of thiamine deficiency, Russell M. Wilder. Mental and neurological aspects of vitamin B complex deficiency, by W. H. Sebrell. Emotional disturbances in persons with pellagra, beriberi and associated deficiency states, by Tom D. Spies, John Bradley, Milton Rosenbaum, and John R. Knott. Multiple neuritis. Differentiation of nutritional polyneuritis from other multiple neuritides, by Maurice B. Strauss. Spectroscopy as applied to the study of phenylpyruvic oligophrenia, by K. Dobriner, C. P. Rhoads, and S. Lieberman. Pernicious anemia and allied disorders, by W. B. Castle. Psychiatric syndromes caused by nutritional deficiency, by Karl M. Bowman and Herman Wortis. Prevention of nutritive failure and its cure, by James S. McLester.

Note: Volume XXII of the *Research publications* of this Association. This volume offers a résumé of the most recent results of experimental and clinical studies on all types of nutritional deficiencies, with emphasis on the mental and neurological aspects. It is pointed out that vitamin deficiencies affecting the nervous system, like those occurring elsewhere, are the result of multiple rather than single deficiencies. The problems of obtaining an adequate food supply, and then of educating the public to utilize it, are discussed. The book has a practical interest for the general practitioner as well as for the scientist working in this field. Bibliographies are given.

CUSHING, HARVEY WILLIAMS

Papers relating to the pituitary body, hypothalamus and parasympathetic nervous system. Springfield, Illinois: Charles C Thomas, 1932. 234 p. illus. (col.) 24 cm. \$5.00. 2372

Contents: Neurohypophyseal mechanisms from a clinical standpoint: basis of the Lister Memorial Lecture, delivered at the Royal College of Surgeons of England, July 9, 1930. Posterior-pituitary hormone and parasympathetic apparatus: basis of the William Henry Welch Lecture at Mount Sinai Hospital, New York, April 30, 1941. The basophil adenomas of the pituitary body and their clinical manifestations (pituitary basophilism): basis of the Alpha Omega Alpha Lecture given at Yale University, February 24, 1932; also presented at a meeting of the Johns Hopkins Hospital Medical Society, February 29, 1932. Peptic ulcer and the interbrain: basis of the Balfour Lecture, given on Lister Day at the University of Toronto, April 8, 1931. References. Index.

Note: Four fundamental papers on correlated topics have been brought together, all dealing with the physiology and pathology of the interpeduncular region of the brain. Two are concerned primarily with the pituitary body, and two with the hypothalamus as a cerebral center of the parasympathetic system. They contain a large amount of clinical information upon which biological and clinical discussions are based. Profusely illustrated.

DAVIDOFF, LEO MAX, AND CORNELIUS G. DYKE

The normal encephalogram. Illustrated with 149 engravings. Philadelphia: Lea & Febiger, 1937. 224 p. illus. 24 cm. \$5.50. 2373

Contents: General considerations: Historical. Indications and contraindications for encephalography. Technique of encephalography. Roentgen technique of encephalography. Reactions to en-

cephalography. Therapeutic effect of encephalography. The ventricles, interventricular foramina, and aqueduct of Sylvius: Introduction. Lateral ventricles. Interventricular foramina and foramen of Monro. Third ventricle. Aqueduct of Sylvius. Fourth ventricle. The cerebral convolutions and sulci: Introduction. Medial aspect of brain. Lateral aspect of brain. The subarachnoid cisterns and their contents: Introduction. Subarachnoid cisterns. Intracranial structures and their related fluid spaces: Bibliography.

Note: Written for neurological surgeons, neurologists, roentgenologists, pediatricians, internists, and general practitioners. The fundamentals of encephalography are presented, based on the authors' experience with 4000 cases. A review of the literature on the subject supplements the presentation.

FORD, FRANK RODOLPH

Diseases of the nervous system in infancy, childhood and adolescence. Second edition. Springfield, Ill.: Charles C Thomas, 1944. 1143 p. illus. 25 cm. \$12.50. 2373a

Contents (abridged): The examination of the nervous system. Clinical aspects of the anatomy and physiology of the nervous system. Prenatal diseases of the nervous system. Heredofamilial and degenerative diseases of the nervous system. Infectious and parasitic invasions of the nervous system. Toxic and metabolic disorders involving the nervous system. Vascular lesions and circulatory disorders of the nervous system. Neoplasms and related conditions involving the nervous system. Injuries of the nervous system by physical agents. The epilepsies and paroxysmal disorders of the nervous system. Diseases of the autonomic system. Diseases of the muscles. Syndromes and symptom groups. Index.

Note: A comprehensive treatise, primarily for neurologists and pediatricians. The essential clinical features of each condition are given with a brief discussion of the pathological anatomy, diagnosis, prognosis, and established principles of treatment. Short bibliographies are appended. In the selection of references, those have been favored which are written in English and which are easily available. The neurological complications of diseases not primarily neurological are also given, with brief discussion of the general aspects of the disease. Controversial topics have been treated briefly in the text, but references pertaining to them have been cited in the bibliography.

GRINKER, ROY RICHARD

Neurology. Third edition, revised and largely rewritten, with the assistance of Norman A. Levy. With a chapter on brain tumors by Paul C. Bucy. Springfield, Ill.: Charles C Thomas, 1943. 1136 p. illus. 25 cm. \$7.00. 2374

Contents: General embryological considerations. Coverings and interstitial tissues of the central nervous system—the cerebrospinal fluid. General anatomicophysiological considerations. General pathological considerations. Technic of neurological examination. Spinal roots and nerves. Tumors of the peripheral nerves and spinal cord. Vegetative nervous system. Brain stem and the cranial nerves. Extraparamidal motor system. Cerebrum. Brain tumors, by Paul C. Bucy. Cerebrospinal vascular system. Inflammatory and infectious diseases. Degenerative diseases. Developmental defects. Syphilis of the nervous system. Trauma of the central nervous system. The epilepsies. Exogenous toxins and noxious agents affecting the nervous system. The myopathies. Headaches. Index.

Note: This book is intended for use as a textbook on neurology, but it should also be of use to the medical student in all departments where some phases of neurology are presented. Biological data which are considered of importance to the study of the human nervous system in health and in disease are correlated, for the author believes that such a correlation is essential for the comprehension of clinical neurology. Emphasis is placed throughout the book on differential diagnosis and therapy. This third edition has undergone much revision, and a chapter on brain tumors by Paul C. Bucy has been added.

HASSIN, GEORGE BORIS

Histopathology of the peripheral and central nervous systems. With 302 illustrations. Second edition, revised and enlarged. New York: P. B. Hoeber, Inc., 1940. 554 p. illus. 24 cm. \$7.50. 2375

Contents: Part I, General considerations. Part II, Diseases of the peripheral nerves: Injuries and secondary nerve degeneration. Neuritis and polyneuritis. Tumors. Diseases of the muscles. Part III, Diseases of the spinal cord: Inflammatory; degenerative; vascular; traumatic; syphilitic. Diseases of the spinal meninges and their spaces. Tumors. Part IV, Diseases of the brain: Inflammatory; infiltrative; toxic degenerative; suppurative; syphilitic. Diseases of the cerebral blood vessels. Arteriosclerotic diseases of the brain and allied states. Traumatic lesions. Progressive and involutional degenerations. Extrapyramidal diseases. Diseases of the cerebellum; of the cerebral ventricles and meninges. Tumors. Epilepsy and dementia praecox. Part V, Staining methods: For cells and their nuclei; myelin fibers; axons and nerve fibrils; glia tissue; elastic fibers. Spirochetal stains. Catabolic products. Index.

Note: This book, which embodies the results of the author's work, was written because he felt that ordinary clinical manuals on neuropsychiatry gave inadequate space to neuropathology, even though this subject is essential to an understanding of the clinical phenomena. In this text the diseases are described from a histopathologic angle, with brief references to the clinical aspects. Among the changes made in this second edition, the following may be noted: an introductory chapter on the general fundamental features of the normal and pathological histology of the central nervous system; a chapter on diseases of the cerebellum and an outline of changes in legal and accidental electrocution; additions to the subjects of encephalitis, meningitis, demyelinating processes. There are many new illustrations and the bibliography has been brought up to date. The book is intended for surgeons, neurologists, pathologists, and medical students.

HOWE, HOWARD ATKINSON, AND DAVID BODIAN

Neural mechanisms in poliomyelitis. New York: The Commonwealth Fund, 1942. 234 p. illus. 26 cm. \$3.50. 2376

Contents: Introduction. The neurotropism of poliomyelitis virus: mechanism and rate of virus spread in peripheral nerve. The neurotropism of poliomyelitis virus: the genesis of cerebral lesions. The role of neurons in the dissemination of virus in the central nervous system. The behavior of virus in peripheral nerves and non-nervous tissues. The portal of entry problem: the experimental animal. The portal of entry problem in man. The pathology of early arrested and non-paralytic poliomyelitis. Virus-refractory states in nerve cells. Problems of immunity in poliomyelitis presented by second attacks. Summing up. Bibliography. Index.

Note: This book, which presents a series of experimental studies of poliomyelitis in animals, is concerned chiefly with the role played by nerve fibers and nerve cells in the penetration into and migration of the virus within the body. The results of these experiments are applied to the problems of human poliomyelitis. Among other things the authors present data which point to the alimentary tract as a portal of entry for the virus and bring forth some new evidence relating to alterations in resistance and the acquisition of immunity. The authors have made a contribution to the knowledge of the mechanisms of this disease which paves the way to a better understanding of it and to the possibility of its ultimate control.

JUDOVICH, BERNARD DAVIS, AND WILLIAM BATES

Segmental neuralgia in painful syndromes. Foreword by Joseph C. Yaskin. 178 illustrations. Philadelphia: F. A. Davis Company, 1944. 313 p. illus. 24 cm. \$5.00. 2377

Contents: Segmental pain and tenderness (segmental neuralgia). Posture in relation to abdominal pain and tenderness and ptosis of the abdominal organs. Treatment. The dermatomes. Brachial plexus pain and the scalenus anticus syndrome. Pain and tenderness in the chest wall. Abdominal pain. Persistence of lower quadrant abdominal pain following appendectomy. Abdominal scars and adhesions. Neuralgic aspects of low back pain and lower quadrant abdominal pain. Sciatic nerve pain. The pitcher plant distillate and the ammonium salts for relief of pain. Herpes zoster (shingles). Occipital neuralgia. Trigeminal neuralgia, by Robert Groff. Control of pain in malignancy. Technic of infiltration. Index.

Note: A monograph which attempts to show that the clinical interpretation of pain can be greatly facilitated by eliciting hyperalgesic or tender skin zones which accompany the pain. The work is based upon the assumption that, clinically, the combination of segmental pain and tenderness of skin in most instances

appears to be of somatic, rather than visceral, origin. Clinical and therapeutic aspects of the syndromes of segmental pain are emphasized, and considerable attention is given to the abdominal wall neuralgias and other conditions usually mistaken for visceral organic disease. The material is limited to conditions observed and treated by the authors, and many case histories are presented and interpreted.

KOPELOFF, NICHOLAS

Bacteriology in neuropsychiatry; a survey of investigations concerned with the specific rôle of infectious and immune processes. Springfield, Ill.: Charles C Thomas, 1941. 316 p. 23 cm. \$4.50. 2378

Contents (abridged): Neurosyphilis (syphilis). Epidemic cerebrospinal meningitis. St. Louis encephalitis, Japanese B encephalitis, and equine encephalomyelitis. Herpes. Rabies. Anterior poliomyelitis. Brain abscess. Tuberculosis. Leprosy. Diseases caused by rickettsia. Diseases caused by spirochetes. Diseases caused by viruses. Diseases caused by protozoa. Diseases caused by helminths and arthropods. Tetanus. Diphtheria. Botulism. Dysentery. Diseases caused by pyogenic cocci. Diseases caused by gram negative rods. Focal infection as a possible etiologic agent. Autointoxication as a possible etiologic agent. Tuberculous bacillema in schizophrenia. Filtrable forms of the tubercle bacillus in schizophrenia. Toxins in schizophrenia. Bacteria, toxins, and allergens as possible etiologic agents in epilepsy. Special properties of the blood and serum of psychotic patients. Epidemic encephalitis (economus—type A). Chorea (Sydenham). Multiple sclerosis. Migraine and similar neurologic manifestations. Hypersensitiveness. The nervous system and antibody production. Immunologic studies. Bibliography. Author index. Subject index.

Note: The contributions which bacteriology and immunology have made to nervous and mental disorders are critically interpreted. The evaluation is from a psychosomatic point of view.

LEWIN, PHILIP

Infantile paralysis, anterior poliomyelitis. Illustrated by Harold Laufman. Philadelphia: W. B. Saunders Company, 1941. 372 p. illus. 23 cm. \$6.00. 2379

Contents: Terminology. Etiology. Portals of entry and exit of the virus. Resistance and immunity. Epidemiology. Predisposing factors. Pathogenesis and pathology. Symptomatology. Examination. Diagnosis. Muscles and tendons. Prognosis and mortality. Treatment: Prophylactic. Active. Of patients with bulbar poliomyelitis. Immediate orthopedic treatment. Physical therapy after acute stage; during convalescent and chronic stages. Use of braces. Complications. Operative treatment of residual effects. Operations on upper extremity, on spine, ribs, abdomen, pelvis and hips. Operations on knee region, on foot and ankle. Appendix. Bibliography. Index.

Note: The author's purpose is to guide the student, general practitioner, pediatrician, and orthopedic surgeon in the early recognition of infantile paralysis and in the course of treatment. It is, therefore, a crystallization of the known facts and underlying principles of etiology, diagnosis, and treatment. Nursing care has also been included for every stage of the disease so that the physician will recognize any variation from ordinary procedures. There are 165 illustrations.

LIVINGSTON, WILLIAM KENNETH

Pain mechanisms; a physiologic interpretation of causalgia and its related states. New York: The Macmillan Company, 1943. 253 p. illus. 22 cm. \$3.75. 2380

Contents: Preclinical data: The anatomy of pain pathways. The cutaneous receptor and the concept of "specificity." The physiology of pain. The psychology of pain. Clinical syndromes: Causalgia and reflex paralysis. Minor causalgia. Post-traumatic pain syndromes. Chronic low back disability. Facial neuralgias. Phantom limb pain. Technic. Interpretations: Protopathic pain. Hyperalgesia. The sympathetic component. The vicious circle. Summary. Bibliography. Index.

Note: For all practitioners of medicine and surgery, medical students, psychologists, physiologists, and neuropsychiatrists, this author has presented his observations and original concepts of the nature of pain, particularly the pain of peripheral nerve injuries, and describes the treatments he has found effective. His

approach is essentially clinical, but he has reviewed the important experimental work on sensation of the past half-century and interpreted it in simple language as a basis for the understanding of his concepts. Physiological interpretations given may be found applicable to many conditions other than those described here, particularly those psychosomatic in nature, such as hypertension, angina pectoris, peptic ulcer and polio neurocirculatory asthenia. His sections on phantom limb and causalgia will be of particular interest to those dealing with rehabilitation of the war injured.

MATHESON COMMISSION

Epidemic encephalitis; etiology, epidemiology, treatment; third report by the Matheson Commission, Willard C. Rappleye, chairman. New York: Columbia University Press, 1939. 493 p. illus. 19 cm. \$3.00. 2380a

Contents: The work of the Matheson Commission: Summary of investigations on etiology. Epidemic encephalitis. St. Louis type encephalitis. Japanese B encephalitis. Human encephalitis caused by the viruses of eastern and western equine encephalomyelitis. Post-vaccinal encephalitis. Post-infectious encephalitis. Australian X-disease. Hemorrhagic encephalitis. Various allied diseases: Louping-ill. Lymphocytic choriomeningitis. The Guillain-Barré syndrome. Summary of the treatment of encephalitis: Epidemic encephalitis. St. Louis type of encephalitis. Japanese B encephalitis. Post-infectious encephalitis. Post-vaccinal encephalitis. Conclusion. Epidemiology: Epidemic encephalitis. St. Louis type encephalitis. Japanese B encephalitis. Bibliography. Index.

Note: The first chapter gives an account of the set-up of the Commission's working staff, plan for clinical and laboratory observation, and history of achievements since its inception in 1927. The work of the first two years consisted in the collection of published data on the epidemiology, etiology, and treatment of epidemic encephalitis, the first report on these three essential factors being published in 1929; a second report was made in 1932; and this third report continues the same work. Etiological theories have advanced along two lines: first that the disease is of bacterial origin; second that it is caused by a virus. Less has been reported in late years in regard to the bacterial theory. The literature on epidemic encephalitis of all known types published since 1932 is reviewed and discussed under the heads of etiology, treatment, and epidemiology. One section considers various allied diseases as listed above, with bibliographic notes on each. The chapter on epidemiology is very complete and well illustrated with tables and charts. A bibliography containing 3,429 items, covering all literature on encephalitis, occupies the major part of the volume.

NEAL, JOSEPHINE BICKNELL

Encephalitis, a clinical study. Collaborators: Lauretta Bender, Helen Harrington, Ralph S. Muckenfuss [and others]. Foreword by Hubert S. Howe. New York: Grune & Stratton, 1942. 563 p. illus. 23 cm. \$6.75. 2381

Contents: Introduction: Short sketch of the work of the Matheson Commission, by Josephine B. Neal. General discussion of encephalitis, by Josephine B. Neal. Epidemiology of epidemic encephalitis, by Ralph S. Muckenfuss. Neurological complications following acute infections and vaccination, by Josephine B. Neal and Helen Harrington. Clinical course of epidemic encephalitis, by Josephine B. Neal. Treatment of epidemic encephalitis, by Josephine B. Neal. Surgical treatment of post-encephalitic symptoms, by Tracy F. Putnam. Psychiatric sequelae of epidemic encephalitis, by Albert A. Rosner. Post-encephalitic behavior disorders in childhood, by Lauretta Bender. Pathology of encephalitis, by Lewis D. Stevenson. Index.

Note: Dr. Neal has been Executive Secretary of the Matheson Commission for the Study of Epidemic Encephalitis for many years, and this volume is based on the clinical work made possible by a grant from this commission and carried out during the period of 1927-1940. The book consists in a study of all phases of the subject of encephalitis as encountered among more than 800 patients. It is intended for physicians specializing in this disease, but also for the general practitioner, pediatrician, and general health officer.

NIELSEN, JOHANNES MAAGAARD

A textbook of clinical neurology. New York: P. B. Hoeber, Inc., 1941. 672 p. illus. 26 cm. \$6.50. 2382

Contents: Diseases of the spinal nerves. Structures between nerves and spinal cord. Diseases of: the spinal cord, the cranial nerves, the brain stem, the cerebellum, the thalamus, the corpus striatum and subthalamic region. The vegetative nervous system. Clinical cerebral localization. Inflammations and intoxications. Intracranial and spinal tumors. The epilepsies. Migraine and headaches in general. Multiple sclerosis. Trauma to the brain and spinal cord. Diseases manifesting themselves in muscles or myoneural junctions. Degenerative diseases of the nervous system and the leuko-encephalitides. Idiocy, imbecility, and other congenital defects. Diseases of bone affecting the nervous system. Vitamins and avitaminoses. Electro-encephalography. Psychoneuroses. Addiction. References to landmarks in clinical neurology. Index.

Note: In this book the practical facts of neuroanatomy and physiology are not separately presented but interwoven where they relate directly to clinical diagnosis and treatment. Diagnostic tests and procedures, and their application are described in useful detail. Therapeutic measures, including the use of sulfonamide drugs and vitamins, are presented. The work is designed for neurologist, psychiatrist, and general practitioner.

PENFIELD, WILDER, AND THEODORE C. ERICKSON

Epilepsy and cerebral localization; a study of the mechanism, treatment and prevention of epileptic seizures. Springfield, Ill.: Charles C Thomas, 1941. 623 p. illus. 26 cm. \$8.00. 2383

Contents: The history of epilepsy. Definitions and classifications. Functional localization in the cerebral cortex. Seizure patterns and their cerebral localization. Mechanism of epileptic seizures. Functional levels in central nervous system. Ictus intractabilis. Expanding epileptogenic lesions. Atrophic epileptogenic lesions. Results of radical treatment of atrophic epileptogenic lesions. Predisposition and inheritance. Extracerebral causes and precipitating factors. Cranial roentgenography. Electro-encephalography. Method of case analysis. Cryptogenic epilepsy and diffuse diseases of the brain. Medical and symptomatic therapy of epilepsy. Surgical therapy of epileptogenic lesions. Acute head injury and prophylactic therapy. Psychological studies of patients with epileptic seizures. Bibliography. Case index. Subject index.

Note: This is a detailed guide to the background, the mechanisms, and the etiology of epilepsy as well as to the most expert knowledge about the surgical treatment and the medical treatment. Electroencephalography is discussed comprehensively in Chapter xiv by Herbert H. Jasper; and in Chapter xx M. R. Harrower-Erickson covers psychology of the epileptic thoroughly and thoughtfully. The series of case reports that illustrate the principles of cortical localization presents a group of exceptionally well-recorded observations on the results of stimulation and extirpation of various portions of the brain. The point of view is physiological throughout.

PUTNAM, TRACY JACKSON

Convulsive seizures, how to deal with them; a manual for patients, their families and friends. 12 illustrations. Philadelphia: J. B. Lippincott Company, 1943. 168 p. illus. 19 cm. \$2.00. 2384

Contents (abridged): Seizures and their causes: definition, types, auras, effects upon mind and body, etc. Diagnosis of cause. What the patient can do to help: Description of attacks, responses to medicines, keeping a record, etc. How bystanders can help: First-aid measures, the school problem, etc. Principles of treatment. Outlook for the individual: Danger of insanity, should persons subject to convulsions marry, have children? Legal liability of "epileptics" and of their employers, etc. Outlook for control of the disorder: progress in anticonvulsant medicines, in surgical treatment; possibilities for improvement of hospitals and clinics, etc. About medical writings on this subject. For lawyers and legislators only.

Note: This non-technical book was written for the patient who is afflicted with convulsive seizures in an effort to help him understand the daily regimen established for him by his physician, and to aid him in assuming the responsibility for it, under the physician's supervision. It is intended also for families and friends of such patients, to answer their questions and to inform them of much new information and of recent striking improvements in treatment.

SELLING, LOWELL SINN

Synopsis of neuropsychiatry. St. Louis: The

C. V. Mosby Company, 1944. 500 p. illus. 20 cm. \$5.00. 2385

Contents: Part I, Neurology: The basic nervous structure and the peripheral nerves. The spinal cord. The brain stem. The cranial nerves. The cerebellum. The cerebrum. The meninges. The autonomic and sympathetic nervous systems. Muscle syndromes. The convulsive states. Part II, Mental disorders: Basic principles. The general etiology of mental disease. Symptomatology of mental disease. Psychiatric syndromes. Immediate effects. Neurosyphilis. Alcoholism. Drug addiction. The psychoses. The parapsychoses. Malingerism. Psychopathic personality. Behavior disorders of childhood. Mental deficiency. Index.

Note: A simplified, systematic coverage of neuropsychiatry intended to enable the student to get a background of the subject without blocking his memory with the amount of detail found in larger and more exhaustive textbooks. Useful also as a quick guide to diagnosis and treatment and as a means of general review of the various phases of the subject. Enough neuroanatomy and neurophysiology have been included to make the organic syndromes more comprehensive, while psychopathology, abnormal psychology, and psychoanalysis are described as a background for the functional disorders. Definitions, syndromes, occurrence, etiology, symptomatology, differential diagnosis, prognosis, and treatment are given for each disorder.

TALBOT, FRITZ BRADLEY

Treatment of epilepsy. New York: The Macmillan Company, 1930. 308 p. illus. 22 cm. (Macmillan medical monographs) \$4.00. 2386

Contents: Introduction. Etiology. Pathology. Diagnosis. Prognosis. Symptoms. Prophylaxis. Treatment. Education. Recreation. Medication. Factors necessary for an understanding of dietary treatment. Summary of theories of dietetic treatment of seizures. Clinical results of fasting. Practical use of the ketogenic diet. Detailed management of the diet. What to teach an epileptic patient. Migraine. Bibliography. Index.

Note: A brief survey of the facts essential for the understanding of the disease from the point of view of the medical practitioner, with an outline of practical methods of treatment. Emphasis is laid on the theory and use of the ketogenic diet.

WECHSLER, ISRAEL SPAUER

A textbook of clinical neurology with an introduction to the history of neurology. Fifth edition, revised. Philadelphia: W. B. Saunders Company, 1943. 840 p. illus. (part col.) 24 cm. \$7.50. 2387

Contents (abridged): Examination and tests. Acute anterior poliomyelitis. Acute ascending paralysis. Myelitis. Caisson disease. Combined degeneration of sclerosis. Friedreich's ataxia. Lateral sclerosis. Family spastic spinal paralysis. Amyotrophic lateral sclerosis. Syringomyelia. Compression of spinal cord. Lesions of cauda equina and conus medullaris. Injuries to spine and spinal cord. Congenital malformations of cord and its coverings. Muscular atrophies. Myasthenia gravis. Neuritis and neuropathy. Peripheral nerve injuries. Diseases of spinal nerves and plexuses. Interstitial hypertrophic neuritis. Tumors of nerves. Diseases of cerebral nerves. Neuralgia. Symptoms and diagnosis of brain diseases. Aphasia. Pseudobulbar palsy. Diseases of medulla and pons. Meningitis. Encephalitis. Chorea. Abscess of brain. Sinus thrombosis. Syphilis of nervous system. Brain tumors. Hydrocephalus. Brain injuries. Cerebral palsies of children. Multiple sclerosis. Schilder's disease. Tay-Sachs disease. Niemann-Pick disease. Diffuse and lobar sclerosis. Tuberculous sclerosis. Cerebellar syndrome. Disorders of motility and diseases of basal ganglia. Tics, spasms, and myoclonias. Epilepsy. Migraine. Tetany. Tetanus. Rabies. Developmental anomalies of the brain. Affections of the autonomic nervous system. The neuroses. History. Index.

Note: Both as a text for the student and clinical guide for the practitioner and neurologist, this book furnishes a digest of what is known in neurology without stressing polemic material or detailing case reports. It is concerned with the office and bedside aspects of neurology, and presents, whenever possible, the various diseases in such a way that signs and symptoms grow out, as it were, of the anatomico-pathological substratum and are seen to be consequent upon the underlying physiological disturbance. A number of changes were made for the fifth edition, as for example chemotherapy in meningitis, new material on poliomyelitis, electro-encephalography, degenerative diseases of the nervous system, headache and an entirely new discussion of phantom limbs. References are scattered throughout the book.

WEIL, ARTHUR¹⁹⁴⁵

A text-book of neuropathology. Illustrated with 260 engravings. Philadelphia: Lea & Febiger, 1933. 335 p. illus. 24 cm. \$5.00. 2388

Contents: Introduction. Changes through autolysis and fixation. Diseases of the ganglion cells. The glia and its pathology. Pathology of the myelin sheaths and the axis cylinder. Anemic softening. Arteriosclerosis. Inflammation. Infections. Intoxications. Injuries. Degenerative diseases. Tumors. Congenital malformations. Appendix. Bibliography. Index.

Note: A review of recent knowledge in neuropathology. Chemical and physical data are included as well as microscope procedure. The appendix includes treatment of staining methods, helpful in understanding the technique used in producing slides from which photomicrographs are made.

WEISENBURG, THEODORE HERMAN, AND KATHARINE E. McBRIDE

Aphasia, a clinical and psychological study. New York: The Commonwealth Fund, 1935. 634 p. illus. 24 cm. \$5.00. 2389

Contents: Introduction. The history of aphasia: a critical survey of early work. The history of aphasia: a critical survey of modern work. The history of aphasia: special problems. The patients studied in this research. Tests and examination methods used. A classification of types of aphasia. Types of aphasia: the expressive. Types of aphasia: the receptive. Types of aphasia: the expressive-receptive. Types of aphasia: the amnesic. The cases of brain tumor. The control group of patients with right-sided lesions and no aphasia. Apraxia and agnosia. The course of aphasic disorders. Reeducation in aphasia. The psychological changes in aphasia. Localization. Concepts of aphasia, apraxia, and agnosia: a comparison with current views. Conclusion. Appendixes: Case reports. Tests. Bibliography. Index. Tables.

Note: The changes in language and behavior found in approximately 80 patients with aphasia are evaluated on the basis of the performances of more than 150 control cases, including patients with unilateral cerebral lesions without aphasia as well as normal adults. The study throws new light upon the problems of cerebral localization, of the psychological changes in aphasia and their significance for an understanding of mental functioning, and of the reeducation of aphasic patients.

YEAR BOOK OF NEUROLOGY, PSYCHIATRY AND ENDOCRINOLOGY. The 1939 Yearbook of neurology, psychiatry and endocrinology. Neurology, edited by Hans H. Reese; psychiatry, edited by Nolan D. C. Lewis; endocrinology, edited by Elmer L. Sevringhaus. Chicago: Year Book Publishers, Inc., 1944. 688 p. illus. 18 cm. \$3.00. 2389a

Contents (abridged): Neurology: Anatomy, physiology and pathology. Epilepsy, head injuries, headache, prefrontal lobotomy, neuro-anemic syndromes. Disorders of central nervous system. Disorders of vascular system with neurologic signs. Disorders of muscular system and myasthenia gravis. Cranial and peripheral nerves. Autonomic nervous system. Syphilis and cerebrospinal fluid. Psychiatry: Child psychiatry. Schizophrenic psychoses. Affective disorders. Organic reactions. Toxic psychoses. Psychoneuroses and psychosomatic disorders. Military psychiatry. Endocrinology: Pituitary group; posterior pituitary or neurohypophysis, diabetes insipidus. Intermediate zone; obesity. Anterior lobe; thyroid, parathyroids, mammary glands, pancreas, adrenal cortex, adrenal medulla, pituitary gonadal system, ovaries, pregnancy and hormones, testes, growth stimulation. Miscellaneous pituitary matters. Miscellaneous group of glands. Subject index. Index to authors.

Note: Between 450 and 500 articles and other contributions to the international literature of these subjects are abstracted. A reference to the original article is given in all cases, and frequently abstracts are accompanied by interpretative and critical notes by one or another of the editors.

Ophthalmology

BELLOWS, JOHN GOLDFREED

Cataract and anomalies of the lens; growth, structure, composition, metabolism, disorders

and treatment of the crystalline lens. With 208 illustrations and 4 color plates. St. Louis: The C. V. Mosby Company, 1944. 624 p. illus. (part col.) 25 cm. \$7.00. 2390

Contents (abridged): History of the crystalline lens. Development, growth, and regeneration. Structure. Composition. Metabolism, and capsular permeability. Developmental defects. Cataracts due to radiant energy, electricity, deficiency of some vital constituents and toxins. Cataracta complicata, cataracts due to trauma, displacements of the lens. Cataract due to endocrine dysfunction. Senile cataract. Indexes.

Note: In this volume the author reviews the extensive literature on this subject and reports his own investigations, in an effort to establish a basis for a more complete clinical understanding of the normal and pathological crystalline lens. Since unanimity of opinion is, naturally, often lacking among the many sources quoted, the author presents and discusses the evidence on all sides of debatable subjects, evaluating some of the theories advanced, while omitting or mentioning only very briefly those for which no experimental or clinical foundation is presented. Physiologic-chemical factors are dealt with at length, in agreement with the modern view that stress should be laid on these, rather than on anatomic factors. The latter part of the book, which deals with the clinical material, is intended for clinicians, but the volume in its entirety is written for ophthalmologists, especially for those who are interested in studying the embryology, histopathology, biochemistry, etc., of the subject. Extensive bibliographies are given.

BERLINER, MILTON LIONEL

Biomicroscopy of the eye; slit lamp microscopy of the living eye. Volume 1. New York: P. B. Hoeber, Inc., 1943. 721 p. illus. (part col.) 26 cm. \$17.50. 2390a

Contents (abridged): Development of biomicroscopy. Biomicroscope. Technic of biomicroscopy. Normal conjunctiva. Non-inflammatory lesions of the conjunctiva. Inflammatory and traumatic lesions of the conjunctiva. Tumors of the conjunctiva. Margins of the eyelids. Episcleritis and scleritis. Normal cornea: biomicroscopic appearance. Developmental anomalies of the cornea. Senile degenerations, dystrophies, and pigmentation of the cornea. Biomicroscopy of corneal changes. Inflammatory lesions of the cornea. Traumatic injuries to the cornea. The anterior chamber. Gonioscopy, by Saul Sugar. Bibliography. Index.

Note: For ophthalmologist—student or practitioner—and the general physician. The book is a combination clinical guide, textbook, and atlas on slit-lamp examination of the living eye which describes in pictures and text probably every known condition of eyelids, conjunctiva, and cornea. Detailed directions for the actual handling of the biomicroscope and interpretation in the light of modern histopathologic knowledge are given. In defining and describing various clinical entities, the practical clinical applications of this method of examination are always stressed. All involved and highly technical explanations of physico-optic phenomena have been purposely avoided. The atlas aspect of the volume is incorporated in more than 500 illustrations, 40 pages of them printed in eight-color plates carefully reproducing the colors of the originals. There is an illustration of the biomicroscopic condition of each disease discussed. A second volume, on biomicroscopy of iris, lens, and vitreous, is in preparation.

CHANCE, BURTON

Ophthalmology. With 6 illustrations. New York: P. B. Hoeber, Inc., 1939. 240 p. illus. 17 cm. (Clio medica; a series of primers on the history of medicine. Editor: E. B. Krumbhaar. xxi) \$2.00. 2391

Contents: Introduction. Sumerian, Babylonian, Assyrian, Egyptian, Chinese, Graeco-Roman, Arabian ophthalmology. Ophthalmology in Salerno and the West. Discoveries in 16th century. Anatomical and physical advances of 17th century. Cataract in 18th century. Modern period. 19th century scientific developments. Sympathetic ophthalmitis and focal disease. Refraction of the ametropic eye and spectacles. Coordination of eye movements. Blepharoplastic surgery. Color vision and color blindness. Use of atropine and other drugs. Ophthalmic surgery. Therapeutic agents. Ophthalmic hospitals and teachers. Works on pathology of the eye. Ophthalmological societies and journals. Modern British contributors. Ophthalmology in America. Prevention of blindness, care and education of the blind. Conclusion. Index.

Note: The author has endeavored to trace the progress of ophthalmology from the earliest of the written records down to the present time. As he remarks, the eye and its diseases have interested mankind from the remotest times. Among primitive peoples, myths, traditions, and barbarous methods of treatment abounded, continuing well into the historic age. Moreover there seems to have been always the understanding that the eye should be attended to only by those who were set apart for that purpose. The story of the progress of ophthalmology is made up of the recording of observations of the usual and unusual actions of the eyes in health and disease; the empirical application of one remedy after another; later, the study of the normal and abnormal actions by invented aids; and finally, the correlation of all the facts thus acquired to the functions of the body in general. Brief accounts of the men who have made outstanding contributions in this field form an interesting feature of the book, which is intended for all persons interested in ophthalmology and the care of the blind, as well as those interested in the history of medicine.

DAVIS, ACHILLES EDWARD

Cataract, its preventive and medical treatment for specialists, general practitioners and students. Second edition. Philadelphia: F. A. Davis Company, 1938. 161 p. illus. 22 cm. \$3.00. 2392

Contents: Historical. Etiology. Diagnosis. Symptoms. Pathogenesis. Spectroscopy, by S. Judd Lewis. Treatment. Dietary treatment. Errors in refraction, by J. Burdon-Cooper. Other methods of non-operative treatment of cataract. Case reports. Experience of other observers with favorable and unfavorable reports. Index.

Note: A brief yet comprehensive summary of the knowledge of cataract. The author has long advocated a serum and vaccine treatment for the prevention and cure of cataract and summarizes the results of his years of experience in the lens-antigen extract treatment. There is a collection of case reports at the end of the book and a number of references in footnotes.

EVANS, JOHN NORRIS

An introduction to clinical scotometry. New Haven: Published for Long Island College of Medicine by Yale University Press, 1938. 266 p. illus. 24 cm. \$4.00. 2393

Contents (abridged): Introduction. History. Equipment. Fixation conditions. The object—theoretic conceptions. Technique. The normal angioscotoma. The scotometry of retinal edema. Application of angioscotometry to study of nasal accessory sinus disease. Transient fluctuations in the scotoma of glaucoma. Supplementary studies. Theoretic considerations of the origin of scotomas as a basis for interpretation. Hypothesis of angioscotometry. Relation of the fiber-bundle hypothesis to angioscotometry. Appendices.

Note: In this book the author has summarized methods and procedures employed in scotometry, reviewed physiologic and pathologic phenomena hitherto unknown, and outlined an hypothesis for the interpretation of defects. The coined word, angioscotoma, is here used to indicate a "scotoma which the retinal vessels seem to project," and angioscotometry is defined as "a system of field study in which the defect is angiogenetic in origin," not as a method of measuring retinal-vessel shadows, the sense in which it has been employed elsewhere. This system of scotoma study based on the retinal-vessel arborization is supported first by anatomic and physiologic elements, then by evidence from pathologic material, by a chapter on technique and instrumentation, and finally by a discussion of the theoretic aspects. The book is designed for the use of ophthalmologists and students. There is an extensive bibliography.

GIFFORD, SANFORD ROBINSON

A hand-book of ocular therapeutics. Third edition, thoroughly revised. Philadelphia: Lea & Febiger, 1942. 410 p. illus. 20 cm. \$4.00. 2394

Contents: Introduction. Equipment. Anesthetics, narcotics, hypnotics. Drugs and organ extracts used in ophthalmology. Specific and non-specific protein therapy. Physical therapy. Diseases of the lids. Diseases of the conjunctiva. Diseases of the cornea. Diseases of the uveal tract. Diseases of crystalline lens. Glaucoma. Diseases of the retina. Diseases of the optic nerves and central visual pathways. Diseases of the lacrimal apparatus. Dis-

orders of the muscular apparatus. Diseases of the orbit. Injuries of the globe. Appendix: Conditions, the treatment of which is on an experimental or unsatisfactory basis.

Note: Important advances in the field since the publication of the previous edition include contact irradiation for retinocytoma and the use of beta-emanation in tuberculosis of the anterior segment. The work has been brought up to date on these subjects, and new illustrations have been added. Agents which have superseded others, such as sulfanilamide and its derivatives, are fully discussed.

GIFFORD, SANFORD ROBINSON

A textbook of ophthalmology. Second edition, revised. Philadelphia: W. B. Saunders Company, 1941. 470 p. illus. (part col.) 20 cm. \$4.00.

2395

Contents: External examination of eyes and adnexa. Examination by ophthalmoscopy. Examination by slit-lamp microscopy, transillumination, and measurement of the intraocular tension. Functional examination of the eye. Errors of refraction. Diseases of the eyelids, conjunctiva, cornea, sclera, iris and ciliary body, of the choroid and vitreous body, crystalline lens. Glaucoma. Diseases of the retina. Diseases of the optic nerve and higher visual pathways. Diseases of the orbit, the lacrimal apparatus. Disturbances of ocular motility. Injuries to the globe. Therapeutic agents employed in ophthalmology. The eye in general diseases. Appendix: Appraisal of loss of visual efficiency. Index.

Note: The fundamental facts of ophthalmology are here presented for medical students, general practitioners, surgeons, and ophthalmologists. Emphasis has been placed on the diseases, injuries, and other disorders of the eye which are more common. Diseases are discussed from the standpoint of etiology, clinical picture, diagnosis, and treatment. Medical and surgical treatments are given, the latter being amplified by step-by-step illustrations. There is an index of the 260 illustrations (43 in colors) and a limited number of basic references are given. The second edition includes a rewritten chapter on the sclera, and the most recent therapeutic agents.

JULIANELLE, LOUIS ALPHONSE

The etiology of trachoma. New York: The Commonwealth Fund, 1938. 248 p. illus. (part col.) 24 cm. \$3.25.

2396

Contents: Trachoma and clinically similar diseases. General considerations on epidemiology. General considerations on etiology. General considerations on infectivity. The microorganisms associated with trachoma. The inclusion body of trachoma. The relation of viruses to trachoma. Purification of the infectious agent. Cultivability of the infectious agent in tissue culture. Properties of the infectious agent. General discussion. Bibliography. Index.

Note: This volume gives a summary of the work done by the Trachoma Commission at Washington University as a part of a comprehensive and detailed review of the whole subject. The author discusses trachoma with respect to epidemiology, causation, and infectivity, and deals particularly with the microorganisms associated with trachoma, the inclusion body, the role of virus in trachoma, and the purification, cultivability, and properties of the infectious agent.

KERNEY, ELLEN

A glossary of French medical terms referable to the eye. New York: Columbia University, 1934. 209 p. 25 cm. (Publications of the Institute of French Studies, Inc., Columbia University) \$1.50.

2397

Note: This French-English dictionary does not attempt to present an exhaustive glossary of diseases of the eye but represents rather a collection of eye terms listed in standard works plus new phrases employed in recent magazine articles. For each definition given the author or authors who have used it in original French publications are cited, together with the title of the publication and its date.

KRONFELD, PETER CLEMENS

Introduction to ophthalmology. Springfield, Ill.: Charles C. Thomas, 1938. 331 p. illus. 23 cm. \$3.50.

2398

Contents: Anatomical introduction. The diseases of the anterior adnexa of the eyeball. The diseases of the cornea. Uveitis. Endophthalmitis. The crystalline lens. Injuries. The physiology of the retinal circulation. The vascular diseases of the eye. The intraocular pressure and its pathological variations. Neoplasms. The optic nerve. The visual pathway. The pupil. The motor anomalies of the eye. Refraction. Index and ophthalmological dictionary.

Note: This book is intended for physicians who wish a basic knowledge of the principles of ophthalmology. It stresses the physiology and the pathogenesis of the physiologic and pathogenic factors in diseases of the eye. Its concern is in stating and explaining fundamental principles rather than serving as a catalogue of the characteristics of eye diseases. An ophthalmologic dictionary is combined with the index.

LEWIS, GEORGE GRIFFIN

The ophthalmic formulary. Springfield, Ill.: Charles C. Thomas, 1942. 167 p. 18 cm. \$3.50.

2399

Contents: The ophthalmic formulary. Ophthalmic materia medica.

Note: This reference book is for the use of the specialist and the general practitioner. It contains the favorite formulae of well-known ophthalmologists throughout the world, together with lists of diseases for which these prescriptions are used. A listing of the medicines used in ophthalmology also appears.

MAY, CHARLES HENRY

Manual of the diseases of the eye, for students and general practitioners. Eighteenth edition, revised with the assistance of Charles A. Perera. With 387 illustrations, including 32 plates, with 93 colored figures. Baltimore: William Wood and Company, 1943. 520 p. illus. (part col.) 20 cm. \$4.00.

2399a

Contents: External examination of the eye by means of inspection and palpation. Subjective or functional examination of the eye. Objective examination of the eye conducted in the dark room. Oblique illumination, the ophthalmoscope, transillumination and the corneal microscope with slit-lamp. Affections of the eyelids. Diseases of the lacrimal apparatus. Diseases of the orbit. Diseases of the conjunctiva. Diseases of the cornea. Diseases of the sclera. Diseases of the iris. Diseases of the ciliary body. Uveitis. Diseases of the choroid. Perforating wounds of the globe. Foreign bodies in the globe and orbit. Compensation for eye injuries. Intraocular tumors. Glaucoma. Diseases of the vitreous. Diseases of the lens. Diseases of the retina. Diseases of the optic nerve. Amblyopia. Disturbances of vision without apparent changes. Visual standards for operating motor vehicles. General optical principles. Optical consideration of the eye. Errors of refraction. Disturbances of motility of the eye. Ocular therapeutics. General rules for eye operations. The ocular manifestations of general diseases. Appendix: Ocular requirements for entrance into the army, navy, marine and air services of the United States. Index.

Note: A concise, systematic manual intended for the student and the general practitioner of medicine rather than the specialist. Common diseases of the eye are described rather fully, but rare conditions and uncommon affections are dismissed with a few lines. The first edition was published in 1900. In addition to the eighteen American editions, there have been eight editions published in Great Britain and thirty-six editions in nine languages other than English. The eighteenth edition has been revised and some parts rewritten, particularly the chapter on diseases of the lacrimal apparatus and the chapter on errors of refraction.

NATIONAL RESEARCH COUNCIL

Ophthalmology and otolaryngology. Philadelphia: W. B. Saunders Company, 1942. 331 p. illus. 24 cm. (Military surgical manuals. Vol. II) \$4.00.

2400

Contents: Functional testing. Examination of eye. Acute visual disturbances. Acute inflammations of eye. Injuries of eye. Medical treatment. Local anesthesia about the orbit. Surgical procedures. Primary treatment of gunshot wounds of the face. The ear in general. Fractures of temporal bones and of cribriform plate. Injuries to the labyrinth and labyrinthine function. Group testing of hearing. Malingering. Roentgenologic diagnosis of

petrositis. Petrositis. The ear in military aviation. Reeducation of the deafened soldier. Reeducation for speech defects. Nose and throat in general. Paralysis in connection with wounds of throat. Infections of the throat. Chemotherapy. Injuries of the esophagus. Injuries of the larynx, hyoid bone, and trachea. Index.

Note: This manual was prepared and edited by the Subcommittee on Ophthalmology and the Subcommittee on Otolaryngology of the Committee on Surgery of the Division of Medical Sciences of the National Research Council, Washington, D.C., in cooperation with the Surgeons General of the United States Army and Navy. Although conceived for the use of medical officers of the armed forces, this manual is also of value and interest to the civilian doctor treating diseases of the eye, ear, nose, and throat. The various aspects of diagnosis and both medical and surgical treatment are described with constant emphasis on proved methods. There are 188 illustrations on 124 figures.

PETER, LUTHER CROUSE

The extra-ocular muscles; a clinical study of normal and abnormal ocular motility. Third edition, thoroughly revised. Illustrated with 147 engravings and 5 colored plates. Philadelphia: Lea & Febiger, 1941. 368 p. illus. (part col.) 24 cm. \$4.50. 2401

Contents (abridged): Part I, Anatomy and physiology. Part II, Heterophoria. Part III, Heterotropia or concomitant squint. Part IV, Paralytic squint. Part V, Nystagmus or talantropia. Part VI, Surgical technique.

Note: In this third edition an effort has been made to simplify the subject and to emphasize the underlying principles. Each phase of disturbed motility is discussed as an entity. Newer proposals which have not passed beyond the controversial stage are not treated.

SNELL, ALBERT CONRAD

A treatise on medicolegal ophthalmology. St. Louis: The C. V. Mosby Company, 1940. 312 p. illus. 25 cm. \$6.00. 2402

Contents (abridged): Part I, Some essential principles of medical jurisprudence and an analysis of compensation laws as these relate to visual disabilities: The medical witness or consultant. The physician and the law. Malpractice. Historical development of liability and compensation laws. State and Federal compensation laws relating to vision. Proposed methods for evaluating visual disabilities. Part II, Evaluation of visual disabilities; the determination of fractional parts of vision: Visual perception and the relation between stimulus and sensation. Visual acuity and resolving power. Percentage evaluation of visual perception. Peripheral vision and methods for its evaluation. Evaluation of muscle function and binocular single vision. Coordinate action and interrelation of the several functions of vision. Part III, Practical application to medicolegal practice: Functional efficiency values as a basis for indemnification. Relative values of near and distant vision. Examination of cases having medicolegal aspects. Malingering. Standard method of evaluation. Criticisms and suggestions for improvement of compensation laws. Appendix. References. Index.

Note: A study of the relationship between the practice of ophthalmology and the law as it concerns this special branch of medicine. The book offers the practicing ophthalmologist a method for accurately evaluating visual disabilities so that he may serve as a competent witness in the adjudication of workmen's compensation claims. This method is based on physiological, physical, and mathematical principles. Compensation laws together with fundamental principles of medical jurisprudence are analyzed in terms of their practical application.

THORINGTON, JAMES

Refraction of the human eye and methods of estimating the refraction, including a section on the fitting of spectacles and eye-glasses. Revised and edited by J. Monroe Thorington. Third edition. Philadelphia: The Blakiston Co., 1939. 412 p. illus. 22 cm. \$3.50. 2403

Contents: Optics. Prisms. Prism nomenclature and neutralizing methods. Lenses. Sphero-cylinder and lens-prism combinations. The eye and its standard measurements. Methods of visual recording. The ophthalmoscope and how to use it. Axial ametropia.

Curvature ametropia. Cycloplegia and the ocular examination. Principles of retinoscopy. Practical retinoscopy. Retinoscopy in regular ametropia. Retinoscopy in irregular ametropia. Muscles. Strabismus and orthoptic training. How to refract. Applied refraction. Visual acuity as an index of the spheric lens required for normal vision. Presbyopia, aphakia, anisometropia. Bifocals and other correcting lenses. Frames and their fitting. Index.

Note: The first edition of this book was a fusion of the author's earlier books entitled *Retinoscopy*, Philadelphia, 1897, *Prisms*, Philadelphia, 1913, and *Refraction and how to refract*, fifth edition, Philadelphia, 1910. The present edition has been prepared by the author's son. The original plan of producing a book suitable for students beginning the study of ophthalmology, lucid, practical, and free from advanced mathematics, has been followed. At the risk of dogmatism, simple explanations have been employed throughout to make the text comprehensive and concise. This edition has a new format and recent information has been incorporated in the text. New illustrations have been added where required, and information on commercial lenses has been brought up to date.

URIBE Y TRONCOSO, MANUEL

Internal diseases of the eye and atlas of ophthalmoscopy. Illustrated with 240 engravings, including 95 figures on 82 full-page color plates. Philadelphia: F. A. Davis Company, 1942. 530 p. illus. (part col.) 25 cm. \$15.00. 2404

Contents (abridged): Ophthalmoscopy. Structural features of the internal eye. The visual field. Anomalies of development. Diseases of the optic nerve. Atrophy of the optic nerve. Vascular diseases of the retina. Diseases of retina. Diseases of the macular region. Area centralis and allied conditions. Retinitis in infectious diseases. Pigmentary retinosis and allied diseases. Detachment of the retina. Diseases of the choroid. Pathological changes in the vitreous body. Injuries of the choroid, retina and optic nerve.

Note: A textbook for students of ophthalmology, internists, and neurologists who wish to learn how to detect and observe changes in the fundus of the eye, how to interpret them, and how to use the findings for establishing the clinical diagnosis of internal eye diseases which in numerous cases can be correlated to a systemic disorder. The method of presentation is first to emphasize the pathological changes and physiopathology of the disease, and then to endeavor to deduce the symptoms from the lesions. The student is shown the importance of correlating the two, at the same time analyzing the structural changes and forecasting their final results. Stress is laid on the classification of several types of diseases of the eye and upon physiopathology. There are many camera lucida drawings, some in color, illustrating various pathologic conditions.

WILMER, WILLIAM HOLLAND

Atlas fundus oculi. Introduction by Warfield T. Longcope. With 100 colour plates. New York: The Macmillan Company, 1934. 39 p. illus. (part col.) 29 cm. \$40.00. 2405

Contents (abridged): Introduction. Ophthalmoscopic examination. Plates: Normal types in persons of various races and coloring. Animal fundi. Congenital abnormalities. Pathologic conditions.

Note: This atlas consists of full-page plates with a description opposite each plate. In the case of those showing pathologic changes, the important clinical and laboratory findings are included in the description. The record number of the patient is also inserted so that the complete history may be available to anyone who wishes to study the case in detail. The animal fundi are from the animals most frequently used in experimentation. In making these paintings the self-illuminating ophthalmoscope and the direct method have been employed, and their correctness verified by the use of the Gullstrand binocular and Friedenwald ophthalmoscopes, red light, and red-free light. The atlas is intended for use by students, ophthalmologists, and clinicians in general.

WOODS, ALAN CHURCHILL

Allergy and immunity in ophthalmology. Baltimore: The Johns Hopkins Press, 1933. 176 p. 23 cm. (The Wilmer Ophthalmological Institute, The Johns Hopkins Hospital and University. Monograph no. 1) \$2.25. 2406

Contents: General considerations of anaphylaxis, allergy and immunity. Experimental studies on general ocular immunology. Relationship of allergy to focal reactions in the eye. Allergic conjunctivitis. Antigenic properties and reactions of lens protein and uveal pigment. Syphilis. Tuberculosis. Therapeutic procedures. Indexes.

Note: This monograph presents the present knowledge and theories of allergy and immunity in ophthalmology. The author has assembled all the most important work and has attempted to evaluate it impartially in the face of many conflicting and opposing views found in this domain. Although this monograph has been prepared chiefly for the ophthalmologist, the material will be of value to other workers in allergy and immunity in view of the importance of the allergic inflammatory reactions of the eye in the study of the general problem of allergy and immunity.

Parasitology and Tropical Diseases

BELDING, DAVID LAWRENCE

Textbook of clinical parasitology, including laboratory identification and technic. New York: D. Appleton-Century Company, Incorporated, 1942. 888 p. illus. 25 cm. \$8.50. 2407

Contents (abridged): Section I, General parasitology: Parasitism. Pathology, immunity, transmission, diagnosis, treatment and prevention of parasitic diseases. Section II, Protozoa: Biology. Parasitic amoebae, infusoria, and flagellates of man. Sporozoa; malarial parasites of man. Section III, Nematelminthes or round worms: Nematodes. Superfamilies Trichinelloidea, Rhabditoidea, Strongyloidea, etc. Section IV, Cestoidea or tapeworms: Superfamilies Bothriocephaloidea, Taenioidea, etc. Section V, Trematoda or flukes: Superfamilies Fascioloidea, Opisthorchoidea, etc. Blood flukes of man. Section VI, Arthropoda: Class Insecta. Order Diptera. Parasitic lice of man. Siphonaptera or fleas. Class Arachnida. Parasitic mites, etc. Section VII, Technical methods for diagnosis and treatment of parasitic infections. Bibliography. Indexes.

Note: A textbook for medical students, physicians, medical personnel in the armed services, public health officials, laboratory workers, and biologists. It differs from the traditional textbook in extensive use of tables and graphs, in the presentation of the immunity of parasitic infections, and the inclusion of a special section on technical methods for laboratory workers. The zoology of the parasite has been subordinated to the pathology, diagnosis, treatment, and prevention of the diseases, while considerable attention is devoted to life cycles and modes of transmission. The more important parasites are arranged in tables and keys, and closely allied parasites are grouped so that their morphological and pathological activities may be readily compared. Diagrammatic or semidiagrammatic drawings to scale give, in themselves, a complete picture of the morphology and life cycle of the parasite. Selected references are included.

BERCOVITZ, ZACHARIAS TAYLOR, EDITOR

Clinical tropical medicine. With foreword by Wilbur A. Sawyer. New York: P. B. Hoeber, Inc., 1944. 957 p. illus. (part col.) 26 cm. \$14.00. 2408

Contents (abridged): Diarrheal diseases. Diseases caused by blood protozoa. Diseases caused by spirochetes and spirilla. Diseases caused by rickettsiae. Diseases caused by viruses. Diseases caused by bacteria. Nutritional diseases. Diseases caused by yeasts and fungi. Infections with helminths. Tropical snakes and poisonous insects. Effects of heat, hygiene, and sanitation. Index.

Note: A manual of tropical medicine assembling the specialized knowledge of 27 authorities in the field, each with extensive clinical and research experience. Symptomatology, pathology, and the most authentic and effective therapeutic measures are presented for each disease; preventive methods are stressed. The material is practical and recent, and includes diagnostic aids and laboratory tests in workable detail, planned to meet the demands of student, medical officer in our armed forces, and the practicing physician who is expected to be faced more and more frequently with problems in tropical medicine during and following demobilization.

CHANDLER, ASA CRAWFORD

Introduction to parasitology, with special reference to the parasites of man. Seventh edition. New York: John Wiley & Sons, Inc., 1944. 716 p. illus. 23 cm. \$5.00. 2409

Contents: Introduction. Parasites in general. Part I, Protozoa: Introduction to Protozoa. Spirochetes. Amebæ. Intestinal flagellates and ciliates. Hemoflagellates—1. Leishmania and leishmaniasis. Hemoflagellates—2. Trypanosomes. The Sporozoa—1. Malaria. Other Sporozoa, and obscure and invisible parasites. Part II, Helminthology: Introduction to the "worms." The flukes. The tapeworms. The nematodes in general. Trichinella, Trichuris, and their allies. The hookworms and their allies (suborder Strongylata). Other intestinal nematodes, and Acanthocephala. Filariae, spirurids, and guinea worm (suborders Spirurata and Camallanata). Part III, Arthropods: Introduction to arthropods. The Acarina—1. Mites. Ticks. Bedbugs and other Hemiptera. Lice (Anoplura and Mallophaga). Fleas. Diptera—1. Blood-sucking flies other than mosquitoes. Diptera—2. Mosquitoes. Diptera—3. Fly maggots and myiasis. Sources of information. Index.

Note: A standard introductory work in the subject, with special emphasis on the biological aspects. Chief among the changes in the seventh edition are the new or revised discussions of: the use of penicillin in the treatment of spirochete diseases; distribution and epidemiology of Chaga's disease in South America, and new knowledge concerning vectors in the United States; the history, present status, and future of malaria in the United States; strigeids; Mesocostoides as a human parasite; immunity in trichiniasis; filariasis (mu-mu) among American troops in the South Pacific; danger of spread of onchocerciasis along the Pan American Highway, with suggested methods of control; methods for treatment of scabies; airplane dissemination of arthropods and arthropod-borne diseases; present status of sylvatic plague in the United States; phenothiazine in the control of mosquito larvae.

CRAIG, CHARLES FRANKLIN, AND ERNEST CARROLL FAUST

Clinical parasitology. Third edition, thoroughly revised. Illustrated with 284 engravings and 4 colored plates. Philadelphia: Lea & Febiger, 1943. 767 p. illus. (part col.) 24 cm. \$9.00. 2410

Contents: General introduction. Protozoa and protozoan infections. Helminths and helminthic infections. Arthropods and human disease. Technical appendix. The literature of clinical parasitology.

Note: Planned for practicing physicians, students of medicine, students of parasitology, and directors and technicians of diagnostic laboratories. The work presents the essential facts, including symptoms, methods of diagnosis, treatment, and control, concerning the parasites which provide serious clinical and public health problems. This edition has been revised and enlarged. The equivalent of over 100 pages of new text material, and more than forty illustrations have been added. The Technical appendix covers the various techniques for collection, preparation, and identification of parasites.

CRAIG, CHARLES FRANKLIN

The etiology, diagnosis, and treatment of amebiasis. Baltimore: The Williams & Wilkins Company, 1944. 332 p. illus. 23 cm. \$4.50. 2411

Contents (abridged): Etiology. Epidemiology. Pathology. Symptomatology. Complications and sequelae. Clinical diagnosis. Laboratory diagnosis—microscopical and cultural-serological. Prognosis and prophylaxis. Treatment. References. Author index. Subject index.

Note: This title includes much of the material that appeared in the author's *Amebiasis and amebic dysentery*, Springfield, Ill., 1934, and has, in addition, the important data accumulated in the past decade. The text is keyed to the bibliography, which contains references to about 440 articles. The work is of interest to public health officers, medical officers of military services, and general practitioners.

CRAIG, CHARLES FRANKLIN

Laboratory diagnosis of protozoan diseases. Illustrated with 54 engravings and 4 colored

plates. Philadelphia: Lea and Febiger, 1942. 349 p. illus. (part col.) 24 cm. \$4.50. 2411a

Contents: Laboratory diagnosis of amebiasis and flagellate infections—laboratory diagnosis of the leishmaniasis. Kala-azar, Oriental sore and espundia—laboratory diagnosis of the trypanosomiasis: West African or Gambian sleeping sickness. East African or Rhodesian sleeping sickness. Chagas' disease—laboratory diagnosis of coccidiosis—laboratory diagnosis of the malaria plasmodia—laboratory diagnosis of balantidiasis, balantidium coli.

Note: In this work the author has included all methods that have a real claim to value in the diagnosis of protozoan diseases. To them he has added his evaluation of their usefulness as judged from his own experience and that of others. The "Critique of diagnostic methods" which follows each section suggests a scheme for a diagnostic procedure based on his own wide experience. The book is of value to physicians who conduct their own clinical laboratories, to public health officers, and to laboratory technicians.

CULBERTSON, JAMES THOMAS

Immunity against animal parasites. New York: Columbia University Press, 1941. 274 p. illus. 23 cm. \$3.50. 2411b

Contents: Introduction. Natural resistance and acquired immunity: Natural resistance; age resistance; specifically acquired immunity. Requisites for immune response. Parasites which elicit immunity. Mechanisms of acquired immunity. Demonstrations of immunity. Immunity in specific diseases: The amoebiasis. The leishmaniasis. The trypanosomiasis. The malarial. The coccidiosis. The trematodiasis. The cestodiasis. The nematodiasis. Response to arthropods. Applied immunology: Classification of parasites. Vaccination against parasites. Diagnosis of parasitic infection.

Note: An extensive but highly technical discussion of a branch of the study of human disease which was practically unknown before the advent of the twentieth century. The reader is assumed to be well trained in parasitology and immunology. The literature on these two subjects from the year 1929 onward has been examined and significant material thus acquired has been incorporated.

CULBERTSON, JAMES THOMAS

Medical parasitology. New York: Columbia University Press, 1942. 285 p. illus. 23 cm. \$4.25. 2411c

Contents: Introduction. Infection. Epidemiology. Natural resistance and acquired immunity. Diagnosis. Specific therapy. Prophylaxis. The amoebiasis. The leishmaniasis. The trypanosomiasis. The intestinal flagellate infections. The malarial. The coccidiosis. The ciliate infections. The trematode infections. The cestode infections. The nematode infections. The acanthocephalian infections. Arthropoda of medical importance: Hexapoda (Insecta). Arthropoda of medical importance: Arachnida, Crustacea, and Myriapoda. Appendix. Books for reference. Index.

Note: A book designed for medical students and general practitioners and designed to give them a résumé of the significant information upon the animal parasites of medical importance. Heretofore human infections by animal parasites have been regarded as tropical diseases, and therefore, of no particular importance to those practicing medicine in temperate zones. Improved methods of transportation, especially by air, and the movement of large sections of the population of temperate climates into the tropics because of military necessity and for commerce and scientific research, have exposed all the peoples of the earth to these infections, and likewise furnished a means of transportation of the parasites themselves into temperate zones. This work tells in non-technical language of the epidemiology, pathology, diagnosis, treatment, and prophylaxis of the infections, for which the acknowledged human parasites are responsible. Highly technical details of parasite morphology, interesting chiefly to zoologists, have been restricted to descriptions just full enough to enable the student to identify the parasites.

FAUST, ERNEST CARROLL

Human helminthology; a manual for physicians, sanitarians and medical zoologists. Second edition, thoroughly revised. Illustrated with 302 engravings. Philadelphia: Lea & Febiger, 1939. 780 p. illus. 24 cm. \$8.50. 2412

Contents: The scope of helminthology. The platyhelminthes or flatworms. The nemathelminthes or roundworms. The acanthocephala or thorny-headed worms. Technical aids in the diagnosis and treatment of helminthic infections.

Note: This revised and enlarged edition covers the important advances in biological and clinical knowledge of helminthic infections and contains an entirely new chapter on anthelmintics and their use. The book is useful both as a teaching text and as a reference book. The helminth parasites are classified in accordance with the International Code of Zoological Nomenclature, and each important species is considered from the point of view of its historical background, structure, life cycle, geographical distribution, epidemiology, pathology, symptomatology, diagnosis, therapeutics, prognosis, and prophylaxis.

FRIEDMAN, REUBEN

Biology of *Acarus scabiei*. With 112 illustrations. New York: Froben Press, 1942. 183 p. illus. 23 cm. \$3.00. 2412a

Contents: Observations concerning mites in general and the itch mite in particular. Evolution of our knowledge of the biology of *Acarus scabiei humanus*. Modern knowledge of the anatomy and biology of *Acarus scabiei*. Index.

Note: An abundantly illustrated work on the history and biology of the human itch mite, *Acarus scabiei*.

GRINNELL, MARY ELIZABETH, AND INA L. HAWES, COMPILERS

Bibliography on lice and man with particular reference to wartime conditions. Washington, D.C.: Government Printing Office, 1943. 106 p. 23 cm. (United States. Department of Agriculture. Bibliographical bulletin no. 1) \$0.15. 2413

Contents: Preface. Sources consulted. Introduction, by F. C. Bishopp. Bibliography on lice and man with particular reference to wartime conditions. Index.

Note: This bibliography contains 961 references to the literature on *Pediculus* and *Phthirus* published in all languages between 1758 and 1942, of which all but 16 bear dates later than 1911. For a more extensive listing of the literature previous to 1917, reference is given to volume 10 of *Parasitology* (November 29, 1917), where an article by G. H. F. Nuttall entitled "Bibliography of *Pediculus*" listed 639 publications up to that date. The arrangement is chronological and alphabetical by author for each year, followed by an author and subject index. Annotations relate mainly to control methods.

HARVARD AFRICAN EXPEDITION

The African republic of Liberia and the Belgian Congo; based on the observations made and material collected during the Harvard African Expedition, 1926-1927, edited by Richard P. Strong. Cambridge: Harvard University Press, 1930. 2 v. illus. 27 cm. (Contributions from the Department of Tropical Medicine and the Institute for Tropical Biology and Medicine. No. v) \$15.00 a set. 2413a

Contents: Volume I, Part I, The African republic of Liberia, by Richard P. Strong: Introduction. Geography. Climate. Inhabitants and conditions under which they live. Tribal customs. Languages. Slavery. Governmental conditions in the interior. Agriculture, farm, and forest products. Financial conditions. Travel in the interior and care of personnel. Geology and flora. Zoology. Sanitary and medical conditions. Problems concerning the welfare of the people. Part II, Medical and pathological investigations in Liberia and the Belgian Congo, by Richard P. Strong and George C. Shattuck: Infectious diseases. Filariasis. Onchocerciasis and keloid formation. Juxta-articular nodules. Yaws and syphilis. Gangosa, rhinopharyngitis mutilans, and goundou. Leprosy and complicating infections. Diseases affecting the skin. Other pathological conditions. Trypanosomiasis (sleeping sickness). Plant diseases. Animal parasitic infections. Part III, Medical and biological investigations: Notes and descriptions of some parasitic helminths collected by the expedition, by J. H. Sandground. *Tylenchus alatus*, by N. A. Cobb. Special protozoological studies of the blood, by Max Theiler. Schistosomiasis treated with antimony sodium thioglycollate and with antimony

thioglycollamide, by George C. Shattuck and Paul T. Willis. Botanical report of Liberia, by David H. Linder. Volume II: Mammals. Birds. Herpetology. Entomology. Photography. Index.

Note: This comprehensive work presents a summary of the results of the Harvard African Expedition of 1926-27 which was undertaken as a biological and medical survey of Liberia, and a comparative study of conditions in the Belgian Congo. Observations and studies were made both along the seacoast and in the interior of Liberia, with particular attention given to the diseases which afflict human beings, animals, and plants, and the methods by which human disease was treated by the natives. There is a brief description of the more important geographical and climatic features of Liberia of interest in connection with the development of the country, together with a study of local government and tribal customs. The final part of the report presents a scientific account of the flora and fauna of the region. The work is illustrated with about 500 photographs and drawings.

HEGNER, ROBERT WILLIAM, AND OTHERS

Parasitology, with special reference to man and domesticated animals, by Robert Hegner, Francis M. Root, Donald L. Augustine and Clay G. Huff. New York: D. Appleton-Century Company, Incorporated, 1938. 812 p. illus. 23 cm. (The Century biological series, R. Hegner, editor) \$7.00. 2414

Contents (abridged): Introduction: Types of parasitism. Host-parasite specificity and relations. Rules of nomenclature, etc. Section I, Protozoology: Biology. Amoebae living in man, in lower animals. Intestinal flagellates. Sporozoa. Malarial parasites, etc. II, Helminthology: Trematodes. Nematodes, etc. III, Arthropods of parasitological importance: Flies. Mosquitoes. Malaria and mosquito surveys. Culicine mosquitoes in relation to disease. The higher Diptera. Myiasis and the identification of fly larvae. The class Arachnida and the order Acarina. Notes on collecting, preserving, and rearing arthropods of parasitological importance, etc. Bibliography. Indexes.

Note: This book represents a new edition of *Animal parasitology*, a textbook published in 1929 for use in colleges, universities, medical schools, schools of hygiene and public health, schools of tropical medicine, and similar institutions. The name has been changed because the former title seemed, erroneously, to exclude the parasites of man. In this edition no radical departures from the former text have been made, but each chapter has been revised so as to include the results of additions to our knowledge of the subject made during the past nine years. New figures have replaced old ones, and the bibliography has been brought up to date. The book is intended for teachers and students of parasitology, veterinarians, and practicing physicians.

HERMS, WILLIAM BRODBECK

Medical entomology with special reference to the health and well-being of man and animals. Third edition. Based on the book known as "Medical and veterinary entomology." New York: The Macmillan Company, 1939. 582 p. illus. 24 cm. \$6.50. 2415

Contents: Introduction. Scope and method. Parasites and parasitism. How insects and arachnids cause and carry disease. Structure, development and classification of insects and arachnids. Insect mouth parts. Cockroaches and beetles. The bugs. The lice. Gnats. Mosquitoes. Mosquitoes as vectors of disease. Mosquito abatement. Horseflies and snipe flies. Houseflies. Housefly control. Bloodsucking muscids. Myiasis. Louse flies. Fleas. Ticks and tick-borne diseases. Mites. Venomous and urticarial arthropods. Utilization of arthropods in medical practice. Index.

Note: This text is designed not only for students of entomology but for those actively engaged in public health, sanitary engineering, veterinary medicine, and related fields. Throughout, the application of entomology to medicine and public health is stressed. In this edition thorough attention is given to the role of arthropods in the transmission of disease. There is a bibliography with each chapter.

HERMS, WILLIAM BRODBECK, AND HAROLD FARNSWORTH GRAY

Mosquito control; practical methods for abatement of disease vectors and pests. Second

edition, revised and enlarged. New York: The Commonwealth Fund, 1944. 419 p. illus. 24 cm. \$3.50. 2416

Contents: Introduction. Importance of mosquitoes. Laws and agencies for mosquito abatement. Preliminaries to abatement procedures. Education of the public. Finding mosquito breeding places. Abatement methods: general principles. Drainage and reclamation of fresh-water marshes. Drainage and reclamation of salt-water marshes. Pumping, and flushing. Oils and larvicides. Methods of application of oils and larvicides. Mosquito control by use of fish. Supplementary protective measures. Special features of mosquito control in urban areas. Special features of mosquito control in rural areas. Species sanitation and naturalistic control. The principal anophelines of the world. The more important anopheles mosquitoes transmitting malaria in the principal regions of the world. Mosquito vectors of yellow fever, dengue, filariasis and epidemic (virus) encephalitis. A classification of mosquito abatement methods. Identification of mosquitoes—use of keys. Selected list of books and articles on mosquito species and biology. Index. Tables. Plates. Figures.

Note: This manual makes available a full and orderly discussion of the subject, from the setting up of an organization for mosquito control to the judicious selection and application of abatement measures. The authors analyze in detail the treatment of various types of terrain—from salt marshes, deltas, and irrigation lands to upland streams, reservoirs, and mountain lakes—by the selective application of drainage, pumping, filling, and controlled reflooding; by the flushing of streams; by the use of oils, larvicides, and predatory fish; and by the adaptation of measures for naturalistic control and species sanitation.

HUFF, CLAY G.

A manual of medical parasitology. Chicago, Illinois: The University of Chicago Press, 1943. 88 p. illus. (part col.) 24 cm. \$1.50. 2417

Contents: Trematodes or flukes. Cestodes or tapeworms. Nematodes or roundworms. Intestinal Protozoa. Haemoflagellates. Malarial parasites of man. Mosquitoes which transmit disease. Flies which transmit or cause disease. Other blood-sucking insects which transmit disease. Ticks and mites—order Acarina. Laboratory diagnosis of parasitic infections.

Note: A textbook designed to prepare students for wartime needs and the resultant importance for a knowledge of parasitology brought about by the movement of troops into areas of disease danger. Primarily for freshmen and sophomore medical students. Material presented can be fitted into laboratories of varying size and emphasis and allows the instructor to select material according to his laboratory facilities. Attention is given to the general structure of the various groups of parasitic animals with emphasis placed upon presenting the features of the life-cycle necessary to an understanding of the transmission, epidemiology, control, diagnosis, pathology, and immunology of the diseases associated with the parasite.

KUDO, ROKSABRO "Protozoology," 3rd, 1946, 88.00
Manual of human Protozoa, with special reference to their detection and identification. Springfield, Ill.: Charles C. Thomas, 1944. 125 p. illus. 20 cm. \$2.00. 2418

Contents: Introduction. Protozoa parasitic in the digestive tract. Technique for detection and identification of Protozoa parasitic in the digestive tract. Coprozoic Protozoa and objects present in the faeces. Protozoa parasitic in the circulatory system. Technique for detection and identification of Protozoa parasitic in the circulatory system. Objects which may be confused with blood-inhabiting Protozoa in stained films. Protozoa parasitic in the muscle and the reproductive organ. Reference books. Index.

Note: This book contains the essential facts needed to detect and identify the Protozoa parasitic in man. Simple microscopical techniques which enable correct recognition are described. The illustrations depict the specimens precisely as they appear under the microscope. There are 29 plates and a list of reference books.

LAAKE, ERNEST WILLIAM, AND OTHERS

Biology of the primary screw worm fly, *Cochliomyia americana*, and a comparison of its stages with those of *C. macellaria*, by E. W. Laake, Emory C. Cushing, and H. E. Parish.

Washington, D.C.: Government Printing Office, 1936. 24 p. illus. (part col.) 23 cm. (United States. Department of Agriculture. Technical bulletin no. 500) \$0.10. 2418a

Contents: Introduction. Economic importance. Distribution. Seasonal activity of the fly. Description of stages, life history, and habits. Effect of cold upon eggs, prepupae, pupae, and adults. Breeding places. Summary.

Note: This bulletin gives the results of studies conducted by the Bureau of Entomology and Plant Quarantine on the biology and habits of *Cochliomyia americana* C. and P., one of two closely related species of screw worms which infest wounds in man and animals in the tropical and subtropical regions of North and South America.

LYNCH, KENNETH MERRILL

Protozoan parasitism of the alimentary tract; pathology, diagnosis and treatment. New York: The Macmillan Company, 1930. 258 p. illus. 22 cm. \$3.75. 2419

Contents: The life of Protozoa. Dissemination and prevention of infection. The Amoebae. The flagellates. The ciliates. The Coccidia. Blastocystis. References. Index.

Note: A short text for students and practitioners of medicine on the more common Protozoa which cause infections of the alimentary tract, with concise accounts of the natural history of these Protozoa, their habits, histology, practical methods of obtaining specimens, symptomatology, and methods of treatment. For protozoologists it will serve as a connecting link between their special field and medicine.

MOULTON, FOREST RAY, EDITOR

A symposium on human malaria, with special reference to North America and the Caribbean region. Publication committee: Mark F. Boyd, chairman, Malcolm H. Soule, secretary, L. T. Coggeshall [and others]. Washington, D.C.: American Association for the Advancement of Science, 1941. 398 p. illus. 26 cm. (American Association for the Advancement of Science. Publication no. 15) \$5.00. 2420

Contents (abridged): Historical introduction to the symposium on malaria, by Mark F. Boyd. Parasitology: The distribution of malaria in North America, Mexico, Central America, and the West Indies, by Ernest Carroll Faust. The morphology, life cycle and physiology of *Plasmodium vivax*, by Reginald D. Manwell. Anopheline vectors: General morphology of anophelines and classification of the nearctic species, by W. V. King and G. H. Bradley. Distribution and ecology of the anophelines mosquitoes of the Caribbean region, by L. E. Rozeboom. The transmission of malaria by anophelines mosquitoes of North America, by James Stevens Simmons. Epidemiology: Cyclical variation in the incidence of malaria, by Charles F. Craig. Malaria and the community, by L. W. Hackett. The role of anophelines in the epidemiology of malaria, by Robert Matheson. Symptomatology: The infection in the intermediate host, by Mark F. Boyd and others. Pathology and immunity: Some pathologic aspects of human malaria, by Paul R. Cannon. The cellular basis for immunity in malaria, by William H. Taliaferro. Treatment: Cinchona and its alkaloids in the treatment of malaria, by Erwin E. Nelson. Antimalarials other than quinine, by Hans Molitor. Control and eradication: Drainage and filling methods for mosquito and malaria control, by Nelson H. Rector. The management of water for malaria control, by E. Harold Hieman. Naturalistic methods of malaria control, by Paul F. Russell.

Note: A collection and revision of papers presented at the meeting of the American Association for the Advancement of Science held in December, 1940. The 44 papers have been grouped under the headings of historical introduction, parasitology, anopheline vectors, epidemiology, symptomatology, treatment, control and eradication. They discuss the distribution and habits of many species of anopheline mosquitoes, the morphology and life cycle of several species of Plasmodia, the nature and effect of natural and synthetic drugs in curing or preventing the disease, and workable methods for control of the disease. There is a 28-page bibliography.

NAUSS, RALPH WELTY

Medical parasitology and zoology. Foreword by John C. Torrey. New York: P. B. Hoeber, Inc., 1944. 534 p. illus. (part col.) 24 cm. \$6.00. 2421

Contents: Part I, Protozoa parasitic in man: Amebae. Amebiasis. Flagellata (class Mastigophora). Diseases caused by blood and tissue flagellates. The Sporozoa. The malaria fevers. A pathogenic ciliate—*Balantidium coli*. Part II, Worms parasitic in man: Roundworms and fecal soil pollution. Food-infesting worms. Parasitic worms of the lymphatic and connective tissues and circulatory system. Part III, Arthropods and disease transmission: Mosquitoes and disease transmission. Flies and disease transmission. Other arthropods in disease transmission. Part IV, Poisonous and venomous forms: Poisonous and urticarial arthropods. Poisonous, biting, and stinging water-inhabiting groups. Venomous snakes and lizards. Appendices: A warm stage for use with microscope. Care and use of the microscope and the measuring accessories. Constituents other than animal parasites or their derivatives commonly found in stools. Staining methods for Protozoa. Culture methods for Protozoa. The N.I.H. cellophane anal swab. Methods of concentration on and quantitative estimation of cysts and eggs in feces. Collection, preparation, and preservation of parasitologic material. Neotropical elapid and viperid venomous snakes found in the western hemisphere. Nearctic elapid and viperid venomous snakes found in the United States and Canada. Glossary: Classification of animal parasites and arthropods. Definitions.

Note: This book is designed as practical guide for medical practitioners, public health officers, laboratory technicians, and others concerned with parasitology. The appendixes include considerable information on laboratory technique.

PEARSE, ARTHUR SPERRY

Introduction to parasitology. Springfield, Ill.: Charles C. Thomas, 1942. 357 p. illus. 23 cm. \$3.75. 2421a

Contents: Introduction. Phylum Protozoa, classes Mastigophorea, Sarcodinea. Phylum Protozoa, classes Sporozoea, Ciliata. Malaria. Consortic mezozoans, sponges, coelenterates, and ctenophores. Phylum Platyhelmintha, classes Turbellaria and Trematodea. Phylum Platyhelmintha. Phyla Acanthocephala and Nematomorpha. Phylum Nematoda. Hookworms. Worm eggs and examinations of feces for animal parasites. Rotifers, annelids, and molluscs. Arthropoda: Pycnogonidea, Arachnidea. Class Crustacea. Class Insecta. Order Hymenoptera. Order Diptera, flies. Order Siphonaptera, fleas. Phylum Chordata. Methods. Index.

Note: This well balanced book covers parasites from Protozoa to Chordata. Parasites of man are stressed, but parasites of domestic animals, fishes, birds, and insects are considered. The treatment is systematic, but much information on the life-cycles of parasites and their ecological and pathological relations is given and illustrated by the graphic method. The text is fortified by 448 clear outline drawings.

REED, ALFRED CUMMINGS, AND J. C. GEIGER

Handbook of tropical medicine. Revised edition. Stanford University, Calif.: Stanford University Press, 1944. 219 p. 17 cm. \$1.50. 2422

Contents (abridged): Dysentery diseases. Malarial fevers. Yellow fever. Dengue fever. Pestilence: cholera, plague. Rickettsial diseases: epidemic typhus fever, endemic typhus fever, Rocky Mountain spotted fever, fevre boutonneuse, tick fevers of Africa, tsutsugamushi fever (river fever or scrub fever), Sao Paulo exanthematic fever, Q fever. Leishmaniasis: kala-azar (black fever), Mediterranean kala-azar, dermal leishmaniasis, Oriental sore, espundia. Relapsing fever. Leptospirosis, trypanosomiasis. African sleeping sickness. American trypanosomiasis. Yaws or framboesia. Oroya fever (verruqa peruana). Rat-bite fever: tropical eosinophilia. Fungous disease: mycetoma. Disorders due to excessive heat: heat stroke (sun stroke), other conditions due to excessive heat. Diseases of the skin: dermatophytosis, pinta, tinea imbricata, tropical phagedena, veldt or veld sore, dermatitis venenata, dermatitis, larva migrans, scabies, mite itch, myiasis. Helminthic disorders: ascaris lumbricoides, enterobius vermicularis, cestodes, hydatid disease, cutaneous disease, hookworm disease, trichurias trichiura, trichinella spiralis, strongyloides intestinalis, trematodes, filaria worms. Nutritional disorders. Index.

Note: A handbook designed as a practical guide for American

physicians at home and abroad, on both military and civilian duty. The discussion is reduced to practical clinical terms, leaving exhaustive and systematic discussions to other works, and has been revised in this edition in the light of recent American research, experience, and needs of the past two years.

RILEY, WILLIAM ALBERT, AND REED O. CRISTENSON

Guide to the study of animal parasites. New York: McGraw-Hill Book Company, Inc., 1930. 131 p. illus. 24 cm. (McGraw-Hill publications in the zoological sciences) \$1.50. 2422a

Contents (abridged): The morphology of the Trematoda, or flukes. The life cycle of a typical trematode. The structure and life history of a tapeworm, *Toenia pisiformis* (Bloch 1780). Comparative study of some important cestodes. *Ascaris lumbricoides* as a type of the Nematoda. The hookworms of man and animals. *Trichinella spiralis* and related forms. The determination of helminth infections through fecal examinations. The Amoebae of man. The trypanosomes and allied forms. Intestinal flagellates of vertebrates. The life cycle of the Coccidia. The Haemosporidia. The Sarcosporidia. The literature of animal parasitology. Appendixes: Collection and preservation of animal parasites. Formulas for reagents and mounting media. The more important endozoa of laboratory animals. Supply houses handling parasitological materials. Comprehensive texts. Index.

Note: This book is designed for college courses offered to premedical and veterinary students and students interested in public health work and animal husbandry. Arthropods have been omitted, because medical and veterinary entomology are usually presented in separate courses in American colleges. References to pertinent literature in English are appended to most of the chapters.

RILEY, WILLIAM ALBERT, AND OSKAR A. JOHANNSEN

Medical entomology; a survey of insects and allied forms which affect the health of man and animals. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 438 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences; A. F. Shull, consulting editor) \$4.50. 2423

Contents: Early suggestions regarding the transmission of disease by insects. Ways in which arthropods may affect the health of man and animals. Classes of phylum Arthropoda. Class Arachnida. Ixodoidea, or ticks. Myriapoda, or centipedes and millipedes. Structure and development of insects. Hexapoda, or true insects. Anoplura, or lice. Hemiptera. Coleoptera. Lepidoptera. Diptera. Culicidae, or mosquitoes. Mosquitoes and disease. Measures for avoidance and extermination of mosquitoes. Other blood-sucking Diptera. Bots. House flies and their allies. Glossina, or tsetse flies. Myiasis, or infestation of man and animals by Diptera. Siphonaptera, or fleas. Hymenoptera. Appendix. Bibliography. Index.

Note: This text is a revision of the authors' *Handbook of medical entomology*, Ithaca, N.Y., 1915, presenting the various hominophilous forms in their systematic order rather than in disease groups as in the former volume. The present work, intended for students and research workers, offers a detailed study of insects and allied forms which affect the health of man and animals. The results obtained by earlier researchers in the field are constantly referred to, summarized, and evaluated. Methods of transmission of disease, together with instructions for the control and destruction of the agents, are described in detail. The extensive bibliographies contain about 700 references.

RIVAS, DÁMASO DE, AND CARLOS T. DE RIVAS
Clinical parasitology and tropical medicine. Illustrated with 144 engravings and a colored plate. Philadelphia: Lea & Febiger, 1935. 367 p. illus. (part col.) 24 cm. \$5.00. 2424

Contents: Part I, General considerations: General introduction. Etiology and pathology. Environmental conditions. Clinical and laboratory diagnosis. Treatment and prognosis. Part II, Diseases caused by Protozoa: Dysenteries. Flagellate diarrhea. Malaria. Trypanosomiasis. Leishmaniasis. Spirochetiasis and treponemiasis.

Part III, Diseases caused by Metazoa: Nematodes. Trematodes. Cestodes. Part IV, Diseases caused by bacteria: Bacterial diseases most common in the tropics. Part V, Diseases of undetermined etiology: Diseases due to filterable viruses—metabolic disturbances and vitamin deficiencies. Part VI, Climatic diseases—animal poisons: Heat stroke, poisonous bites and stings. Index.

Note: The object of the authors is to present the modern conception of tropical and parasitical diseases from the standpoint of etiology, the complete life history of parasites, the pathology, symptomatology, diagnosis, and treatment of these affections. The book is intended for medical students, pathologists, and the general practitioner.

STITT, EDWARD RHODES

Stitt's Diagnosis, prevention and treatment of tropical diseases. Sixth edition. By Richard P. Strong. Philadelphia: The Blakiston Company, 1942. 2 v. illus. (part col.) 23 cm. \$21.00. 2425

Contents: Volume I, Diseases due to Protozoa. Diseases due to bacteria. Volume II, Diseases caused by filterable viruses, rickettsias and allied organisms; nutritional disorders; diseases not satisfactorily grouped in other section; diseases due to fungi and poisonous plants; animal parasites, including helminths, injurious arthropods, poisonous fish, snakes and coelenterates. Appendix: Alphabetical index of clinical diagnosis; laboratory procedures indexed by diseases; tropical hygiene tables and data; personal hygiene tables and data; disinfectants and disinfectants.

Note: This work is a practical guide to the diagnosis, prevention, and treatment of tropical diseases, based upon special research and experience of experts. The latest zoological aspects and laboratory procedures of value in connection with transmission, diagnosis, and prevention, and the public health problems regarding prevention of infectious diseases are included. Considerable material supplied by the British and Australian medical military authorities is included. Earlier editions have the title: *The diagnostics and treatment of tropical diseases.*

STRONG, RICHARD PEARSON, AND OTHERS

Onchocerciasis, with special reference to the Central American form of the disease. Cambridge: Harvard University Press, 1934. 234 p. illus. 26 cm. Paper, \$4.00; cloth, \$5.00. 2425a

Contents (abridged): Part I, Onchocerciasis with special reference to the Central American form of the disease, by Richard P. Strong: Previous investigations relating to Central American onchocerciasis. The regions in Guatemala in which the present investigations were particularly conducted. Epidemiological and endemological studies. Clinical and pathological observations. Description of the adult parasite and microfilariae. Other pathological conditions. Ocular complications. Transmission. Other parasites found in simulum. Immunity. Studies of microfilaricidal substances. Public health aspects. Prophylaxis and treatment. Bibliography. Part II, On the validity of the various species of the genus *Onchocerca* Dising, by Jack H. Sandground: Outline of the history of *Onchocerca* and species attributed thereto. Material. Definition of the genus and discussion of taxonomic criteria for the species. Discussion. Summary and conclusions. Bibliography. Part III, Notes on the black-flies or Simuliidae, with special reference to those of the *Onchocerca* region of Guatemala, by Joseph C. Bequaert: Introduction. Early stages. Adult flies. Taxonomy. Bibliography. Part IV, Some epidemiological facts about the onchocerciasis of Guatemala, by Miguel Muñoz Ochoa: Geographical information. Seasons and climate. Population, races, certain customs. Statistics. Discussion. Summary.

Note: A detailed discussion of this rare, parasitic condition by a group of authorities, who have lived and worked in the restricted area where it is endemic.

STUNKARD, HORACE WESLEY, AND OTHERS

Parasitic diseases and American participation in the war. New York: New York Academy of Sciences, 1943. 73 p. illus. 22 cm. (New York Academy of Sciences. Annals. Vol. XLIV, p. 189-262) Paper, \$1.00. 2425b

Contents: Introduction to the conference on parasitic diseases, by Horace W. Stunkard. Current and postwar problems associated with human protozoan diseases, by Lowell T. Coggeshall. Changed viewpoints of helminthic disease: World War I vs. World War II, by Norman R. Stoll. Arthropods as vectors of human diseases, with special reference to the present war, by

Robert Matheson. Clinical features of parasitic diseases and their consideration in military and naval operations, by Thomas T. Mackie.

Note: A series of papers originally presented at a conference held by the Section of Biology of the New York Academy of Sciences, March 13, 1943. The purpose of the papers was not only a restatement of present knowledge in the realm of parasitic diseases but also the consideration of immediate necessary research projects in this field. References are given in footnotes and discussions are printed at the end of each paper.

USINGER, ROBERT LESLIE

The Triatominae of North and Central America and the West Indies and their public health significance. Washington, D.C.: Government Printing Office, 1944. 83 p. illus. 23 cm. (United States. Public Health Service. Public health bulletin no. 288) \$0.25. 2426

Contents: Introduction. History. Relation of triatomine bugs to Chagas' disease. Biology of triatomine bugs: Habits. Collecting. Rearing. Eggs. Nymphs. Life history. Host relations. Geographic distribution. Systematics: Phylogeny. Morphology. Taxonomy. Bibliography. Systematic index.

Note: This paper has been prepared in an attempt to clarify the biology and systematics of the Triatominae north of the southern boundary of Panama and including the West Indies. Triatomas are of importance to public health because of their role as vectors of American trypanosomiasis or Chagas' disease.

WILCOX, AIMEE

Manual for the microscopical diagnosis of malaria in man. Washington, D.C.: Government Printing Office, 1942. 39 p. illus. 23 cm. (United States. National Institute of Health. Bulletin no. 180) \$0.45. 2427

Contents: Life history of plasmodia. Types of blood films and advantages of each. Identification of species of malaria in the thin film. Malaria parasites in the thick film. History of staining and of thick film technique. Bibliography. Plates I-XIII (8 in color).

Note: This manual begins with a description of the different species of malaria intended to be useful both to the beginner in the subject and to one wishing a concise review. The bulk of the manual consists of a treatment of the microscopical diagnosis of malaria in man, describing the technique of the thick and thin films. Plates show the appearance of parasites in the thick film. The manual is designed to aid the student in the study of malaria, the microscopist in the diagnosis of the disease, the field worker who makes blood surveys for malaria, and the physician who takes blood smears from his patients.

Respiratory Diseases

AMBERSON, JAMES BURNS, JR.

Chest X-ray interpretation with special reference to tuberculosis. New York: National Tuberculosis Association, 1941. 48 p. illus. 23 cm. Paper, \$0.25. 2428

Contents: Technical considerations. The healthy chest. Methods of interpretation. Pathogenesis and evolution of tuberculosis. Indications for X-ray examination of the chest. Limitations of X-ray examinations for tuberculosis. The roentgenographic appearance of tuberculous lesions. The X-ray in differential diagnosis. Use of the X-ray in the evaluation of tuberculous lesions.

Note: A discussion of the standardization of chest roentgenography and various factors and methods that influence the quality and uniformity of roentgenograms, with consideration of the healthy chest and the various manifestations of the early, moderately advanced, and far advanced stages of tuberculosis. Reproductions of thirty roentgenograms, with accompanying diagnoses, are included.

BROWN, LAWRASON

Rules for recovery from pulmonary tuberculosis; a layman's handbook of treatment. Sixth

edition, thoroughly revised. Philadelphia: Lea & Febiger, 1934. 275 p. 18 cm. \$1.75. 2429

Contents: Preface. Introduction. Rest. Food. Alcohol and tobacco. Fresh air. A patient's day. Sitting out. Preparations for sitting out. On the porch. Sleeping out. On the patient's room. Exercise. Getting up after bed-rest. Cultivating an outdoor hobby and on recreation. The temperature of the body. Controlling a cough without drugs. The body weight. Patient and physician. Climate. Heliotherapy. Surgical treatment. How and when we contract tuberculosis. The care of children in the home of the tuberculous. Tuberculin. The disease tuberculosis. Definition of "cure" and "arrest" as used in the treatment of tuberculosis. The hygienic care of the patient. The care of the mouth. Colds. Returning home. Suggestions for patients. Food values. Summary. Bibliography.

Note: A book for tuberculosis patients. It supplements the instructions of the physician, and simplifies and explains the treatment which the patient must do for himself. The chapter on surgical treatment discusses this important phase of treatment.

CHADWICK, HENRY DEXTER, AND ALTON S. POPE

The modern attack on tuberculosis. New York: The Commonwealth Fund, 1942. 95 p. illus. 21 cm. \$1.00. 2430

Contents: Tuberculosis yesterday and today. Epidemiological aspects of the disease. Diagnostic procedures. The sanatorium as a means of control and treatment. Case finding in the community. A community campaign of eradication. Bibliography. Index.

Note: Little substantial progress has been made in the discovery of early tuberculosis, in spite of the steady improvement in diagnostic techniques and facilities. With the X-ray, the laboratory examination, and the tuberculin test, all necessary tools exist for the detection of incipient tuberculosis. To bring about their effective use is the main purpose of this concise and authoritative handbook. The authors discuss the current problems in tuberculosis control and the operation of an effective regional control program. Modern procedures are stressed, especially with regard to the discovery and control of the disease by age, sex, occupation, and within the family, and with regard to the functions of the tuberculosis sanatorium.

GOLDBERG, BENJAMIN, EDITOR

Clinical tuberculosis, with the collaboration of the following contributors, Donato G. Alarcon, Maurice L. Blatt [and 31 others]. Fourth revised edition. Fully illustrated with over 640 half-tone and line engravings and 9 full-page color plates. Philadelphia: F. A. Davis Company, 1944. 2 v. illus. (part col.) 26 cm. \$15.00. 2431

Contents (abridged): Volume I: Epidemiology of tuberculosis, by Godias J. Drolet. Bacteriology, by Ralph R. Mellon. Allergic and immunological considerations, by K. Robert Koch and Ralph R. Mellon. The pathology of pulmonary tuberculosis. Physical diagnosis in tuberculosis, by George G. Ornstein and David Ulmar. Endobronchial or tracheobronchial tuberculosis, by Benjamin Goldberg. X-ray findings in adult pulmonary tuberculosis, by Hollis E. Potter. Prophylaxis, by Benjamin Goldberg. Home treatment of tuberculosis; non-surgical rest, exercise, and occupation; diet; medicinal, symptomatic, and tuberculin therapy, by Benjamin Goldberg. Artificial pneumothorax, by Ralph C. Matson. Oleothorax, by Ray W. Watson and Benjamin Goldberg. Phrenic neurectomy, by Ralph C. Matson. Volume II: Surgical selective apical collapse in pulmonary tuberculosis, by Pol. N. Coryllos and Benjamin Goldberg. Heliotherapy, by Edgar Mayer. Tuberculin, by Henry G. Poncher. Climatotherapy, by Alexius M. Forster. Tuberculosis meningitis, by Abraham Levinson. Hematogenous and miliary tuberculosis, by George G. Ornstein and David Ulmar. Anorectal tuberculosis, by Clement L. Martin. Bronchoscopy in the tuberculous, by Louis H. Clerf. Index.

Note: A collection of monographs on various phases of the subject by 33 specialists, designed as an encyclopedic survey of clinical tuberculosis. The fourth edition includes data accumulated during World War II. There are 260 roentgenograms and a large number of other illustrations plus a list of references at the end of each paper.

HEFFRON, RODERICK

Pneumonia: with special reference to pneumococcus lobar pneumonia. New York: The Commonwealth Fund, 1939. 1103 p. 24 cm. \$4.50. 2432

Contents: Introduction. Causative organisms in pneumonia; and pneumonia not due to pneumococci. The pneumococcus and type incidence in pneumonia. Pathology of lobar pneumonia. Aspects of immunity. Experimental pneumococcus infections and pathogenesis of lobar pneumonia. Epidemiology. Measures for the prevention of pneumonia. Symptoms of lobar pneumonia. Physical signs in lobar pneumonia. Clinical varieties of pneumonia and association with other conditions. Special features in the course of the disease. Complication: incidence and treatment. Diagnosis. Differential diagnosis. Prognosis. Recovery factors and duration of immunity. General therapeutic measures. Serum treatment. Results of serum treatment. Continuing problems. Appendices. Bibliography. Index.

Note: This comprehensive review of investigations dealing with pneumonia includes an extensive discussion of the inciting agent, methods of its transmission, the complex subject of immunity, and prevention. On the clinical side, the volume presents full information about the lesions produced, diagnosis, factors influencing recovery, and methods of treatment, including discussions of medical care, antiserum, oxygen, vaccine, and chemotherapy. In the preparation of the book practically all of the more important discussions of the subject were reviewed and abstracted, as indicated by the 1471 titles in the bibliography.

HEISE, FRED HENRY, EDITOR

1,000 questions and answers on T. B. Revised edition. New York: National Tuberculosis Association, 1941. 235 p. 19 cm. \$1.00. 2433

Contents: Heredity. Predisposition. Infection. Immunity. Relapse. Symptoms. Diagnosis. Terms and definitions. Classification. Cavity. Treatment. Surgical treatment. Laboratory aids. Bronchoscopy. Associated diseases. Extra pulmonary tuberculosis. Index.

Note: The questions are grouped under the headings indicated in the contents, and represent the phases of the disease uppermost in the patient's mind. The answers, containing descriptions of symptoms and recommended treatment, are intended only as a supplement to the advice of the physician. Height-weight tables for adults are also included.

JACKSON, CHEVALIER, AND CHEVALIER L. JACKSON

Diseases of the air and food passages of foreign-body origin. With 2000 illustrations including 3 plates in colors. Philadelphia: W. B. Saunders Company, 1936. 333; 636 p. illus. (part col.) 26 cm. \$12.50. 2434

Contents: Etiology of foreign bodies in air and food passages. Prophylaxis. Pathology. Symptomatology and diagnosis. Treatment. Mechanical problems of removal. Extraction of foreign bodies from the esophagus. Diagnosis and treatment of foreign bodies in the gastro-intestinal tract. Prognosis. Instruments. References. Index. Appendix.

Note: The pediatrician, gastro-enterologist, laryngologist, and endoscopist will all find this book of value. The internist and general practitioner will also find it of assistance, particularly in differentiating between disorders due to foreign bodies and diseases such as pneumonia, bronchitis, asthma, diphtheria, gastric disease, etc. Each situation is covered from the standpoint of symptoms, differential diagnosis, pathologic states and changes, and governing factors, method of examination and interpretation of the findings, indications and contra-indications, instruments required and best technique for the case in hand, prognosis, anesthesia, dangers, complications, reaction of tissue, etc. The appendix is in reality a clinical data section of over 600 pages in which the authors record in tabular form their solutions of some 3000 cases. Here is given a composite picture of a parallel for virtually any case that may be met, including an actual size reproduction of the body removed.

LAPIN, JOSEPH HARRIS

Whooping cough. Springfield, Ill.: Charles C. Thomas, 1943. 238 p. illus. (part col.) 23 cm. \$4.50. 2435

Contents (abridged): Historical survey. Epidemiology. Bacteriology. Pathology. Immunology. Serology. Clinical manifestations. Hematology. Roentgenology. Complications. Diagnosis. Prophylaxis of non-exposed children. Prophylaxis of "contacts." Specific treatment. Non-specific treatment. Treatment of complications. Public health considerations. Index.

Note: A comprehensive guide and reference work to diagnostic, therapeutic, and control procedures in whooping cough (pertussis, tosseira). All important phases are covered. Complete digests have been made of the literature and, in addition, the author's experiences in a clinic for routine prophylaxis and follow-up of well children, in a clinic for the treatment of contacts and ambulatory cases of whooping cough, and in a contagious disease hospital with the complications of whooping cough, have been incorporated. References to the literature accompany the chapters.

LINDBERG, DAVID OSCAR NATHANIEL

A manual of pulmonary tuberculosis and an Atlas of thoracic roentgenology. Springfield, Ill.: Charles C. Thomas, 1943. 233 p. illus. 25 cm. \$6.50. 2436

Contents: Pulmonary tuberculosis—diagnosis, treatment, control. Diagnosis. Roentgenological technique and interpretation. General management. Surgical considerations. Control aspects. Thoracic roentgenology. Atlas. Index.

Note: Practical diagnosis, treatment, and prevention of pulmonary tuberculosis are covered in this work. Experimental and controversial subjects are not included. The newer accepted methods cover: physical signs, fluoroscopy, roentgenphotography, conventional and body section radiography. The newer additions to thoracic surgery, such as extrapleural pneumonotomies, pneumonectomy, cavernostomy, Monaldi suction drainage, the prevention status of chemotherapeutics, and the new alpha-beta-gamma-albumin tests having to do with prognosis, furnish accurate information. In Part I are 44 useful photographs, charts, and graphs. In Part II, the Atlas, there are 145 plates.

LORD, FREDERICK TAYLOR AND OTHERS

Chemotherapy and serum therapy of pneumonia, by Frederick T. Lord, Elliott S. Robinson and Roderick Heffron. New York: The Commonwealth Fund, 1940. 174 p. illus. 21 cm. \$1.00. 2437

Contents: Pneumonia as a community problem. Definition and etiology. Diagnosis. Recognition of the type of pneumococcus infection. Immunity factors in pneumonia. Prognosis. Chemotherapy. Results of chemotherapy. Antipneumococcal serum. Precautions prior to serum administration. Administration of serum and dosage. Serum reactions and their treatment. Results of serum treatment. Relative merits of sulfapyridine and antiserum. Combined drug and serum therapy. Appendices. Index.

Note: This handbook gives in concise, usable form a rounded discussion of the specific drug and serum treatment of pneumonia due to various organisms. It discusses the indications and contraindications for the various forms of treatment, their relative merits, methods of use, precautions to be observed, and the results obtained.

MAYER, EDGAR, EDITOR

Radiation and climatic therapy of chronic pulmonary diseases, with special reference to natural and artificial heliotherapy, X-ray therapy, and climatic therapy of chronic pulmonary diseases and all forms of tuberculosis. With the collaboration of the following contributors: Louis Beardslee Baldwin, Irvin I. Balensweig, Alfred Lee Briskman [and others]. Baltimore: The Williams and Wilkins Company, 1944. 393 p. illus. 23 cm. \$5.00. 2438

Contents (abridged): Selected therapies for chronic pulmonary diseases, by Edgar Mayer. Physics of light radiation, by William W. Coblentz. Physiological action of light, by Henry Laurens. Sources of light and modes of administration, by Frank H. Krusen and Earl C. Elkins. Artificial light therapy of tuberculosis: pulmonary and pleural forms, by Edgar Mayer and Martin

Respiration

Dworkin. Artificial light therapy of intestinal and peritoneal tuberculosis, by Edgar Mayer and Martin Dworkin. Artificial light therapy of urogenital tuberculosis, by Stanley L. Wang. Artificial light therapy of tuberculosis of the skin, by Anthony C. Cipollaro. Climatic and weather effects with special reference to respiratory diseases, by Clarence A. Mills. Solar radiation and climatotherapy in a cool low altitude, by Horace Lo Grasso. Solar radiation and climatotherapy of tuberculosis and chronic pulmonary disease in the sunny southwestern desert, by Louis Beardslee Baldwin. X-ray therapy of chronic non-tuberculous mediastinal and pulmonary disease, by Ira I. Kaplan. Röntgen-ray irradiation for intrathoracic tumors, by Lloyd F. Craver. X-ray treatment of pelvic tuberculosis, by Harriet C. McIntosh. Surgical vs. conservative treatment of bone and joint tuberculosis, by Irvin Balensweig. Climatic, X-ray, and light therapy of chronic pulmonary diseases and tuberculosis: a résumé, by Edgar Mayer. Index.

Note: This book is addressed to the general practitioner as well as to the chest specialist, and presents material derived from the authors' clinical experiences in the field of light and climatic therapy. Each paper contains statistical data, case histories, methods, description of special apparatus, previous results of other investigators and techniques, together with other relevant details, photographs, and selected bibliographies.

MULLER, GULLI CHARLOTTE (LINDH)

Clinical significance of the blood in tuberculosis. New York: The Commonwealth Fund, 1943. 516 p. illus. 24 cm. \$3.50. 2439

Contents: Physiology of the blood-forming organs. Cellular response in the bone marrow to tuberculosis. Cellular response in the tissues to the tubercle bacillus. General considerations. Neutrophils. The practical application of Arneth's count and its modifications. Monocytes and lymphocytes. Eosinophils and basophils. Variations in the total number of leucocytes. Absolute numbers of leucocyte types versus percentage distribution. Response of the leucocytes to the injection of tuberculin. Leucocytic formulae. Toxic changes in the leucocytes. The relation of leucemia and leucemoid reactions to tuberculosis. Platelets. Hemorrhages and hemorrhagic diathesis. Erythrocytes. Anemias. Historical summary. The mechanism of sedimentation. Factors influencing the sedimentation rate. Methods of determining the sedimentation rate. Methods of correcting the sedimentation rate. General considerations and definitions of standards. Correlation of clinical and hematological abnormalities with the extent of the lesion. Comparison of clinical and hematological data in active and inactive tuberculosis. The association of hematological and clinical data as determined by the correlation coefficient. General considerations. Artificial pneumothorax. Thoracoplasty. Exercise. Complications. Methods. Routine procedures applicable to tuberculosis. Appendix. Bibliography. Index.

Note: The author presents a comprehensive discussion of the hematological findings in tuberculosis, based on modern methods and interpretations. She discusses the changes in number and kind of blood cells at various stages of pulmonary tuberculosis, and points out the significance of these changes in relation to diagnosis, prognosis, and to the progress of the infection. This study includes an analysis of nearly 7000 hematological examinations carried out on a series of 1000 patients admitted consecutively over a five-year period to the Rutland State Sanatorium, and a correlation of these findings with the clinical findings. In the light of this experience, the literature in the field is reviewed and evaluated.

NATIONAL TUBERCULOSIS ASSOCIATION

Diagnostic standards and classification of tuberculosis. 1940 edition. New York: National Tuberculosis Association, 1940. 32 p. 23 cm. (Committee on Diagnostic Standards of the National Tuberculosis Association and the American Trudeau Society, Fred H. Heise, M.D., chairman) Paper. Single copies, gratis. 2440

Contents: Pathogenetic development of pulmonary tuberculosis. Clinical course of tuberculosis correlated with pathological conceptions. Diagnosis and classification of tuberculous lesions. Case-finding and control. Explanation of classification and descriptive summary. Technical procedures.

Note: The present edition of this pamphlet brings diagnostic standards of tuberculosis into conformity with current medical practice, and presents a statement of principles and a general

guide for physicians, clinicians, and public health agencies. The revision includes some new terminology and a more comprehensive classification.

NATIONAL TUBERCULOSIS ASSOCIATION

Tuberculosis clinic manual. A report of the Committee on Clinic Standards of the National Tuberculosis Association. By Herbert R. Edwards, chairman. New York: National Tuberculosis Association, 1938. 57 p. illus. 23 cm. (National Tuberculosis Association. Technical series no. 12) Paper, \$0.50. 2441

Contents: Historical introduction. Responsible agency. Location of clinics. Relationship with other agencies. Budgetary items. Clinic quarters. Admission of patients. Clinic records. Personnel. Scope of medical services and clinic procedures. Educational activities. Case-finding methods. Standards of tuberculosis services. Appendixes.

Note: A brief pamphlet for state and local health authorities and practitioners, outlining the methods of organization, scope and purpose, responsibilities, relationships with other agencies, and general operation of the tuberculosis clinic. A short bibliography is included.

NICOLSON, DOROTHY CAMERON (WHITE)

Twenty years of medical research. New York: National Tuberculosis Association, 1943. 94 p. illus. 23 cm. Paper, \$0.50. 2442

Contents (abridged): The background: Laboratory research. First committee on medical research. The plan. The researches: Anatomy of the lungs. Chaulmoogra oil and tuberculosis. The chemistry of tuberculosis. Standardization of tuberculin. Physiology of the tubercle bacillus. Fibrous tissue. Typing of infecting agent. Virulence of tubercle bacilli. Epidemiology of tuberculosis. Improvement in X-ray technique. BCG vaccination. Chemotherapy in tuberculosis. Past, present and future: Tuberculosis and coexistent disease. War and tuberculosis. Financial aid. Contributions of universities and laboratories. Bibliography 1921-1942. Author index.

Note: A review of the plans and achievements of the Committee on Medical Research of the National Tuberculosis Association from 1921 to 1942, the author having been the committee's secretary since its inception. A thirty-page bibliography of articles written under the committee's auspices is included.

PACKARD, EDWARD NEWMAN, AND OTHERS, EDITORS

Artificial pneumothorax, its practical application in the treatment of pulmonary tuberculosis; contributions by Saranac Lake physicians to the studies of the Trudeau Foundation: editorial committee: E. H. Packard, John N. Hayes, Sidney F. Blanchet. Foreword by E. R. Baldwin. Illustrated with 85 engravings. Philadelphia: Lea & Febiger, 1940. 300 p. illus. 24 cm. \$4.00. 2443

Contents: Historical review of artificial pneumothorax treatment. The physiology of artificial pneumothorax. Selection of cases. The value of the X-ray in artificial pneumothorax. Apparatus. The technique of operation. Accidents during operation. Physical signs in artificial pneumothorax. Conduct of treatment. Pleural complications of artificial pneumothorax. Results of treatment of tuberculous empyema. The opposite lung in artificial pneumothorax. Bilateral artificial pneumothorax. Artificial pneumothorax and the heart. Duration and termination of treatment. The pathology of the tuberculous lung treated by artificial pneumothorax. Oleothorax. Thoracic surgery in relation to artificial pneumothorax. Results of treatment by artificial pneumothorax.

Note: This handbook is based largely upon the actual experience of the contributors. It presents both the advantages and disadvantages of the method, and is intended as a guide for physicians concerned in the treatment of patients with pulmonary tuberculosis.

RAFFERTY, THEODORE NEWELL

Artificial pneumothorax in pulmonary tuberculosis, including its relationship to the broader aspects of collapse therapy. Introduction by Henry Stuart Willis. New York: Grune & Stratton, 1944. 192 p. illus. 22 cm. \$4.00. 2444

Contents: Part I, General considerations: Introduction. Present state of collapse measures. Therapeutic results. Part II, Choice of cases: Primary thoracoplasty. Indications. Contra-indications. Tracheobronchial tuberculosis. Part III, Management: Basic concepts. Differentiation between effective and ineffective pneumothorax. Closed intrapleural pneumonolysis. Pneumothorax combined with phrenic paralysis. The tension cavity. Complications. Bilateral pneumothorax. Duration of collapse. Re-expansion. Ambulatory pneumothorax. Minimum standards. Bibliography. Index.

Note: This monograph attempts to outline the broad general principles which govern the several distinct aspects of artificial pneumothorax, a widely used surgical procedure for the control and treatment of pulmonary tuberculosis. The author believes that there is much unnecessary confusion in the criteria and standards of the method and endeavors to formulate a workable prototype by focusing attention on details of management and by offering recommendations as to what is believed to be the medical ideal. The therapeutic effects of the proper treatment are stressed throughout, with tables of statistical data and references to the literature of the field. Illustrated with many roentgenograms of various stages in the method. The bibliography is extensive.

RICH, ARNOLD RICE

The pathogenesis of tuberculosis. Springfield, Ill.: Charles C. Thomas, 1944. 1008 p. illus. 26 cm. \$10.50. 2445

Contents: The relation of the chemical constituents of tubercle bacillus to pathogenesis. The different types of tubercle bacilli. The variations in the form and potentialities of the tubercle bacilli. The nature and effects of virulence. Native resistance. The mechanism of native resistance. The mechanism of local tissue resistance. Hypersensitivity. The mechanism of hypersensitivity. Desensitization. Acquired resistance. The mechanism of acquired resistance. Factors that influence resistance. The influence of the number of bacilli. Factors responsible for the characteristics of tuberculous lesions and symptoms. Exogenous or endogenous re-infection—is an arrested primary infection protective or deleterious? Application of the principles of pathogenesis, as illustrated by tuberculosis of the lungs, meninges and serous cavities. The decline in the mortality from tuberculosis, and the outlook for the future. Bibliography. Author index. Subject index.

Note: This book correlates facts contributed by bacteriology, immunology, pathology, by clinical observation and experimental investigation, by epidemiology and genetics. It provides a comprehensive, sound background for the application of this knowledge to the problems that tuberculosis presents in the patient, in the community, and in the laboratory. Because it is a broad treatise, it includes an analysis of the prime principles that govern infection and resistance. The more important original papers have been assiduously examined at first hand, and all observations are documented. Present limits of knowledge are clearly defined. Eighty-nine figures and 20 tables are included.

ROSENTHAL, SOL ROY

The general tissue and humoral response to an avirulent tubercle bacillus, including growth characteristics of the organism. (With 1 plate, 80 figures, and 23 charts). Urbana, Ill.: University of Illinois Press, 1938. 184 p. illus. 28 cm. (Illinois medical and dental monographs. Vol. II, no. 2) Paper, \$2.50; cloth, \$3.00. 2446

Contents: Introduction. Life cycle. Mutation or dissociation. Effect of fats on growth and virulence. Tissue and blood responses to intravenous injection. Tissue and blood responses to intradermal injection. Tissue and blood responses to oral administration. Tissue responses to injection of fractions of the tubercle bacillus. Submicroscopic forms and the reticulo-endothelial system. Author index. Subject index.

Note: Experimental studies on guinea pigs demonstrating that viable tubercle bacilli when introduced intracardially, intradermally, or orally call forth a generalized response of the

reticulo-endothelial system in the host. Experiments to determine which fraction of the tubercle bacillus caused the R.E.S. to respond were inconclusive.

SEGAL, JACOB

Pulmonary tuberculosis; a synopsis. With foreword by the late Pol N. Coryllos. New York: Oxford University Press, 1939. 150 p. illus. 24 cm. (Oxford medical publications) \$2.75. 2447

Contents: General considerations: Definition. Source and pathways of infection. Pathogenesis. Pathology. Clinical types: Childhood form. Benign exudative. Caseous pneumonic. Chronic fibro-caseous. Symptomatology. Complications. Diagnosis. Treatment: Hygienic. Medicinal. Chemical. Physical. Biological. Surgical. Psychic. Prevention. Index.

Note: A brief outline, for the student and general practitioner, of the causes, types, pathology, symptoms, diagnosis, treatment, and prevention of pulmonary tuberculosis, summarizing most of the literature in the field and based partly on the author's clinical experiences over a period of twenty-five years. The work makes no attempt to present original material and is merely intended to give, in a short reading period, a bird's-eye view of the subject. Illustrated with numerous roentgenograms.

SILTZBACH, LOUIS E.

Clinical evaluation of the rehabilitation of the tuberculous; experience at Altro Work Shops, 1915-1939. New York: National Tuberculosis Association, 1944. 70 p. illus. 23 cm. Paper, \$0.50. 2448

Contents: Part I, Historical background: Underlying principles of rehabilitation. The Altro Work Shops, description and medical criteria. Part II, General characteristics of Altro workers (1915-1939): Medical status of workers at admission to Altro. Comparison of medical status of workers in two periods, 1915-1929 and 1930-1939. Difference in non-medical characteristics in the two periods. Analysis of experience with workers during their Altro stay. Part III, Survival rates and mortality of Altro workers. Work capacities. Mortalities compared with that of the general population. Cause of death subsequent to discharge from Altro. Morbidity rates. Record of graduates. Part IV, Discussion of results: Recommendations and conclusions. References.

Note: A study of 25 years experience of the Altro Work Shops, a garment factory in Bronx, N.Y., in the restoration to gainful employment of a large percentage of 964 tuberculosis convalescents. The author summarizes the Altro Shop regimen, the methods of supervision over workers and their families, the medical admission criteria, and the procedure under which workers are employed, and the group division system which has proved most effective. A discussion of follow-up methods after discharge and 33 statistical tables and charts are included.

SWEANY, HENRY CLARIS

Age morphology of primary tubercles. Springfield, Ill.: Charles C. Thomas, 1941. 265 p. illus. 24 cm. \$5.00. 2449

Contents: The relationship of morphology to age in primary tubercles: In patients wherein the contact began and ended before seven years of age. In cases having an accurate history of contact at any time during life. Age characteristics of presumptively tuberculous extrapulmonary calcified lesions, with special reference to those in the spleen. Practical application of the age-morphology principle: A group of routine autopsies. The application of "morphology" criteria in determining the time of infection in a group of miscellaneous cases. The use of the age-morphology system in placing the time of infection in a group of nurses and hospital attendants. Certain presumptive age changes in reinfection tubercles. The age criteria of primary tubercles revealed by roentgenological study. General summary. Bibliography. Index.

Note: The author reviews the results of a close and meticulous study of "primary" tuberculous deposits lasting many years. The pathological material came from the Chicago Municipal Tuberculosis Sanitarium. It was thoroughly studied in the attached research laboratory and the data carefully correlated to the tuberculosis history of the case. The author has taken a large view of the slow-moving processes and episodes of tuberculosis, and has been able to present the evolution of the disease on a definite time scale. He finds remarkable agreement in the age characteristics of a large series (several hundred cases) of three

or more groups and confidently describes the steady march of tubercle through all its phases. Radiologist, clinician, and pathologist alike can appreciate and apply this work's clinical value. Excellent reproductions of X-ray films and of microscopic sections are included.

UNITED STATES. BUREAU OF MEDICINE AND SURGERY

The prevention of respiratory tract bacterial infections by sulfadiazine prophylaxis in the United States Navy. Washington, D.C.: Government Printing Office, 1944. 162 p. illus. 23 cm. (Navmed 284) \$0.30. 2450

Contents: Introduction. The grouping and typing of beta hemolytic streptococci. Mass administration of sulfadiazine in the prevention of respiratory illness at the U.S. Naval Training Center, Farragut, Idaho. A study of a sulfadiazine streptococcus prophylaxis program at Great Lakes Naval Training Center. The streptococcal control program, U.S. Naval Training Center, Sampson, New York. Streptococcus prophylaxis program, U.S. Naval Training Center, Bainbridge, Maryland. The streptococcal control program, U.S. Naval Construction Training Center, Davisville, Rhode Island. Control of epidemic upper respiratory diseases by sulfadiazine prophylaxis, U.S. Naval Air Technical Training Center, Memphis, Tennessee. Mass prophylaxis of respiratory disease, U.S. Naval Air Technical Training Center, Norman, Oklahoma. The streptococcal control program, Navy Pier, Chicago. Conclusion: Mass chemoprophylaxis, the U.S. Navy's six months' program for the control of streptococcal infections.

Note: This monograph presents the complete story of the sulfadiazine prophylaxis program as it was carried out in 1943-44 at each of eight naval training centers in the United States, together with a summary of the total program and a consideration of its implications. It is believed that this project was the largest controlled investigative study ever undertaken and the reports indicated many assets and few disadvantages to mass chemoprophylaxis. Commander Alvin F. Coburn, MC-V (S), U.S.N.R., authority on streptococcal diseases, organized the program under the direction of the Bureau of Medicine and Surgery and set it in operation, and wrote the concluding chapter of this publication.

WEBB, GERALD BERTRAM

Tuberculosis. With 17 illustrations. New York: P. B. Hoeber, Inc., 1936. 205 p. illus. 17 cm. (Clio medica; a series of primers on the history of medicine. Editor: E. B. Krumbhaar, M.D. xvi) \$2.00. 2451

Contents: Epidemiology. Knowledge of the ancients. The Middle Ages. Contagion. Pathology. The tubercle. The tubercle bacillus. Immunity. Diagnosis. Treatment. Rest treatment of tuberculosis. Climate. Sanatoria. Legislative prophylaxis. Bibliography. Index of personal names. Index of subjects.

Note: This handbook gives a brief history of this disease, which has been present in man since the dawn of civilization. The author has traced the earliest records of the disease found in writings, in pictures, vases, etc., and in other relics of antiquity, and the earliest records of the forms of treatment, often bizarre. He has also traced the development of the words employed in describing the various forms of the disease in different languages. The later course of the development of our knowledge of the etiology, diagnosis, and treatment of tuberculosis is also described, with mention of the men who have made outstanding contributions in this field. The book is intended for student, physician, and layman.

WHITE, BENJAMIN

599.95
W 541
The biology of pneumococcus; the bacteriological, biochemical, and immunological characters and activities of *Diplococcus pneumoniae*. With the collaboration of Elliott Stirling Robinson and Laverne Almon Barnes. New York: The Commonwealth Fund, 1938. 799 p. illus. 24 cm. \$4.50. 2452

Contents: History of pneumococcus. Biology. Biochemical features. Classification of pneumococci. Pneumococcal dissociation and transformation. Pathogenicity of pneumococcus: experimental animals. Man. Chemical constituents of pneumococcus. Specific polysaccharide-splitting enzymes. Antigenicity. Antibodies. Host response to antigenic action of pneumococcus. Pneumococcal vaccines. Chemotherapy. Production of antipneumococcal serum. Serum treatment of lobar pneumonia. Unsolved problems. Appendix: Special methods used in the study of pneumococcus and in the preparation of antipneumococcal serum. Bibliography. Index.

Note: In this very comprehensive review the history of the study of this organism is told, and contributions made by sanitarian, pathologist, epidemiologist, physician, bacteriologist, immunologist, and chemist are considered in detail and critically evaluated. The review of the literature on the biology of pneumococcus forms a part of the pneumonia study and service carried on from 1931 to 1935 by the Massachusetts Department of Public Health under a grant from the Commonwealth Fund. The book is intended for use as a textbook and work of reference.

Venereal and Genitourinary Diseases

DATTNER, BERNHARD, AND OTHERS

The management of neurosyphilis, by Bernhard Dattner, with the collaboration of Evan W. Thomas and Gertrude Wexler. Foreword by Joseph Earle Moore. New York: Grune & Stratton, 1944. 398 p. illus. 23 cm. \$5.50. 2453

Contents (abridged): Technic of removal of spinal fluid. Technic of examination of spinal fluid. Significance of changes in the spinal fluid. Spinal fluid syndromes. Methods of treatment. Application and results of the various therapeutic methods. Prophylaxis and pathogenesis of neurosyphilis. Conclusion. Bibliography. Indexes.

Note: A monograph presenting a survey of the various modern therapeutic methods in the treatment of syphilis of the central nervous system, emphasizing the value of the spinal fluid syndrome as a guide in diagnosis and in studying the course of the disease. After a discussion of the technique of removal and examination of the spinal fluid, the authors outline the methods used to check the underlying pathologic processes as they are reflected in the spinal fluid. An attempt is made to integrate the information given in the available world literature, with a critical analysis of all therapeutic suggestions. The bibliography is extensive.

DENNIE, CHARLES CLAYTON, AND SIDNEY F. PAKULA

Congenital syphilis. Illustrated with 133 engravings. Philadelphia: Lea & Febiger, 1940. 596 p. illus. 24 cm. \$8.00. 2454

Contents: Introduction. The examination of the congenital syphilitic infant. Serological reactions and their significance. Syphilis of pregnancy. The cutaneous manifestations of the congenital syphilitic. Eye changes in the congenital syphilitic. Congenital syphilis of the bones and joints. Congenital neuro-syphilis. Congenital syphilis of the auditory apparatus. Syphilis of the gastro-intestinal tract. Syphilis of the respiratory organs. Cardio-vascular syphilis. Congenital syphilitic disease of the liver and spleen. Congenital syphilis of the kidney. Syphilis of the endocrine system. Latent congenital syphilis. The adult congenital syphilitic. Syphilis of the third generation. Congenital syphilitic twins. The treatment of the congenital syphilitic. The differential diagnosis between congenital and acquired syphilis in infants and children.

Note: This work is intended to enable the general practitioner to recognize congenital syphilis and to treat it successfully.

EISENDRATH, DANIEL NATHAN, AND HARRY C. ROLNICK

Urology. 750 black and white illustrations and 12 in color. Fourth edition, entirely revised and reset. Philadelphia: J. B. Lippincott Com-

pany, 1938. 1061 p. illus. (part col.) 26 cm. \$10.00. 2455

Contents (abridged): Part I, Structure, function, non-operative techniques: Embryology. Anatomy. Physiology. Urologic instruments. Minor office technic. Urethroscopy, cystoscopy, and ureteral catheterization. Radiography of the urogenital tract. Laboratory methods. Anesthesia. Terminology. Part II, Gonorrhea, venereal ulcers: Treatment of gonorrhea. Stricture of the urethra. Gonorrhea in the female. Chancre and early syphilis. Other venereal ulcerations. Part III, Male genitalia: Penis and urethra. The prostate. Seminal vesicles. *Vas deferens*, spermatic cord, and epididymis. Testis and scrotum. Sex neuroses. Part IV, Bladder: Anomalies and injuries. Cystitis and pericystitis. Tumors. Neurogenic disfunctions. Part V, Ureter: Anomalies. Injuries. Calculi and neoplasms. Part VI, Kidney: Anomalies. Injuries. Thrombosis. Dropped kidney. Hydronephrosis. Renal cysts. Tuberculosis. Nephrolithiasis. Part VII, Urology in the female and in children. Part VIII, Pathologic changes in output and composition of the urine. Part IX, Operative technic: Operations on the penis and urethra. Operations on prostate, seminal vesicles, scrotum, and its contents. Operations for sterility in the male. Operations on the bladder, kidney, and ureter. Postoperative complications. Index.

Note: The authors' primary aim in this comprehensive textbook has been to simplify the subject of urology for teaching purposes. The text is adaptable as a reference book for general practitioners as well. The fourth edition constitutes a general revision of earlier diagnostic and therapeutic methods, plus new material on male sex hormones, the gonadotropic principle found in urine, cystometry and excretory urography as diagnostic methods, adrenal hyperplasia and neoplasms, urology of the female and child, together with new techniques in nephroureterectomy, resection of the renal pelvis, and other types of operations.

GREENBLATT, ROBERT BENJAMIN

Management of chancroid, granuloma inguinale, and lymphogranuloma venereum in general practice. Washington, D.C.: Government Printing Office, 1943. 43 p. illus. 23 cm. (United States. Public Health Service. Supplement no. 19 to Venereal disease information) Paper, \$0.15. 2456

Contents: Chancroid. Granuloma inguinale. Lymphogranuloma venereum. Differential diagnosis. Bibliography.

Note: This publication is intended for the general practitioner. It covers the following aspects of each of the three diseases: definition, etiology, incubation period, epidemiology, incidence, clinical signs and symptoms, clinical varieties, location, complications, diagnosis, treatment.

HAMBLÉN, EDWIN CROWELL

Facts for childless couples. Springfield, Ill.: Charles C. Thomas, 1944. 123 p. illus. 19 cm. \$2.00. 2457

Contents: General considerations of childlessness. Reproductive functions of the husband. Reproductive functions of the wife. Examinations of the husband. Examinations of the wife. The hope of success of treatment. Treatments necessary for the husband. Treatments necessary for the wife. Some popular misconceptions.

Note: A non-technical book on sterility which physicians can recommend to childless couples. One of the outstanding advantages this book offers is the preparation it gives the patient for an understanding of what the physician attempts to do. It contains plain easy-to-understand medical advice for the sterile couple on how they should approach the sterility examination. It tells what constitutes adequate examination. It dispels misconceptions of the physiology and pathology of reproduction. Some of the examinations which are clearly explained: vaginal examination, bimanual examination, blood chemistry studies, basal metabolic rate, tubal test, endometrial biopsy, post-coital test, seminal studies, testicular and epididymal punctures, testicular biopsy, vasopuncture, urethroscopic catheterization, scrotal vasotomy, epididymo-vasotomy.

HAZEN, HENRY HONEYMAN

Syphilis in the Negro. A handbook for the general practitioner. Washington, D.C.: Gov-

ernment Printing Office, 1942. 96 p. illus. 23 cm. (United States. Public Health Service. Supplement no. 15 to Venereal disease information) Paper, \$0.20. 2458

Contents: Introduction. Part I, Incidence, prevalence, and trend: Approaches to the problem. Incidence. Prevalence. Prevalence of congenital syphilis. Trend. Part II, Pathology and clinical course: Nature, general effects, and transmission of the organism. Pathologic differences in Negro and white. The chancre. Secondary syphilis. Latent syphilis. Late syphilis. Syphilis of the nose and mouth. Syphilis of the respiratory and digestive tracts. Cardiovascular syphilis. Neurosyphilis. Lesions of the bones, joints, and bursae. Syphilis of the genito-urinary organs. Syphilis of the eye. Congenital syphilis. Part III, Diagnosis: Examination of patient. Therapeutic test. Dark-field examination. Serologic tests. Roentgen-ray examination. Summary of diagnostic knowledge. Part IV, Treatment: General considerations. Specific therapy. Nonspecific therapy. Treatment of syphilis complicated by other diseases. Prognosis. Part V, Prophylaxis: Status of prophylactics and recommended techniques. References. Addendum: Viewpoint of the Negro physician. Illustrations.

Note: This publication on syphilis is especially intended for physicians and public health officers in places where there is a Negro population. The author is Professor of Dermatology and Syphilology at Howard University, Washington, D.C.

HERMAN, LEON

The practice of urology. Philadelphia: W. B. Saunders Company, 1938. 923 p. illus. (part col.) 24 cm. \$10.00. 2458a

Contents (abridged): Diagnosis. Instrumental therapeutics in urology. The kidney. The ureter. The urinary bladder. The urethra. Penis and scrotum. Testicle, spermatic cord, and seminal vesicle. The prostate gland. Urolithiasis. Urogenital tuberculosis and actinomycosis. Urinary syphilis. Index.

Note: Intended particularly for use of the general practitioner and surgeon, this book deals largely with methods and procedures employed daily in diagnosis and treatment. The principles of urology are discussed at a length sufficient to make the book of interest also to students. Controversial problems are presented insofar as to clarify the subjects from the practical standpoint. Considerable emphasis is placed on diagnosis and especially on the proper order of application of available methods. Cystoscopy, urethroscopy, urography and urine tests are all covered. Extensive attention is given to gonococcal infections and their sequelae, and also to venereal ulcerations. In the discussion of each disease, the author has set forth clinical features, symptoms, and differential diagnosis. Various useful laboratory tests are included and full details given on medical treatment. Although actual operative technique is not presented, surgical indications and general surgical considerations are set forth. References are appended to each chapter and there are 756 illustrations on 504 figures.

HERROLD, RUSSELL DORR

Chemotherapy of gonococcal infections. St. Louis: The C. V. Mosby Company, 1943. 137 p. 25 cm. \$3.00. 2459

Contents: Introduction. Evolution of chemotherapy. Sulfanilamide, sulfapyridine, and sulfacetamide. Diagnosis of gonococcal infections in the male. Differential diagnosis. Sulfathiazole. Toxic reactions of sulfathiazole. Sulfadiazine. Local treatment and chemical prophylaxis. Management of sulfonamide failures. The carrier or subclinical state of infection. Determination of cure in the male. Complications. Infections in women. In children. Epidemiology. Investigative problems. Illustrative case histories. Index.

Note: In this volume the author analyzes and reviews the various problems connected with this subject, as he has personally encountered them. He has had wide experience in the correlation of clinical and laboratory observations on gonococcal infections, and bases his statements on his own findings. There is no extensive discussion of the history, bacteriology, pathogenesis, etc., of the gonococcus, nor any historical account of the many antiseptics previously used. The author's sole object is to present this subject in a practical fashion, bringing up to date all the data that have proved of value. Typical case histories of infections refractory to chemotherapy are related in the final chapter, because failures present problems requiring more expert attention and warrant a detailed description. The book is intended for medical students and practitioners in general as well as for specialists in this field.

HINRICHSSEN, JOSEPHINE

Acetarsone in the treatment of congenital syphilis. A review of the literature. Washington, D.C.: Government Printing Office, 1942. 92 p. illus. 23 cm. (United States. Public Health Service. Supplement no. 18 to Venereal disease information) Paper, \$0.15. 2460

Contents: History of the drug. Experimental studies. Acetarsone in the treatment of acquired syphilis. Congenital syphilis. Discussion. Bibliography.

Note: The experimental studies of acetarsone in animals, its toxic effects in adults, and its therapeutic effect in adult syphilis are reviewed in detail because of the direct relationship they bear to the problem of treatment of congenital syphilis.

HINRICHSSEN, JOSEPHINE

Modern serologic tests for syphilis and their interpretation by the physician. Washington, D.C.: Government Printing Office, 1941. 81 p. illus. 23 cm. (United States. Public Health Service. Supplement no. 14 to Venereal disease information) Paper, \$0.15. 2461

Contents: Introduction. Complement fixation tests for syphilis. Flocculation tests. Quantitative complement fixation test. Examination of cerebrospinal fluid. Serologic reactions in diagnosis, treatment, prognosis of syphilis. Presumptive tests. Comparative evaluation of serodiagnostic tests. Discrepancies among results of different tests. Official evaluation studies. Choice of serologic test. Reporting results. United States Serologic Conference, 1938.

Note: This study discusses the different serologic tests for syphilis and compares the following tests which have become most firmly established in the United States: the Kolmer complement fixation reaction, the Eagle complement fixation reaction, and four flocculation reactions—the Eagle, Hinton, Kahn, and Kline tests. The publication is intended especially for the physician who is not a serologist.

HOTCHKISS, ROBERT SHERMAN

Fertility in men. A clinical study of the causes, diagnosis, and treatment of impaired fertility in men. With a foreword by Nicholson J. Eastman. 95 illustrations. Philadelphia: J. B. Lippincott Company, 1944. 216 p. illus. (part col.) 24 cm. \$3.50. 2462

Contents: General considerations. Anatomy, physiology, and pathology of the male genital organs. Metabolism of spermatozoa and chemical composition of semen. Methods of appraising fertility of men. Laboratory tests and other examinations. The cell count. Morphology of spermatozoa and other tests and examinations. Variabilities and characteristics of semen. Treatment. Commercial products. Index.

Note: A survey designed to acquaint the medical profession with this relatively new field of urology. Emphasis is placed upon the practical details of handling cases of male sterility from the viewpoint of the practitioner. The work includes a detailed study of the physiology and pathology of spermatozoa, an outline of methods of examination of husband and wife, the relation of morphology to infertility, miscarriage, and malformation, the problems of treatment, and the order of therapy. Under the latter topic there is a detailed description of operative technique in testicular biopsy. Bibliographies are given at the end of each chapter. A companion volume by Samuel L. Siegler entitled *Fertility in women*, 1944, 450 p., \$4.50, is offered by the same publisher.

HOWLES, JAMES KIRBY

A synopsis of clinical syphilis. With 121 text illustrations and 2 color plates. St. Louis: The C. V. Mosby Company, 1943. 609 p. illus. (part col.) 20 cm. \$6.00. 2463

Contents: General considerations of syphilis: The pathologic process. The primary stage of acquired syphilis. The secondary (cutaneous) stage of acquired syphilis. The latent (asymptomatic) stage of acquired syphilis. The tertiary cutaneous lesions

of acquired syphilis. The clinical diagnosis of syphilis. Laboratory diagnosis. Therapy. Prognosis in syphilis. Systemic and regional syphilis: Acquired syphilis of the mucous membranes. Cutaneous appendages. Acquired syphilis of the eye and ear (exclusive of central nervous system involvement). Respiratory system. Cardiovascular system. Acquired syphilis of the gastrointestinal tract. Liver, biliary tract, pancreas, spleen, and genitourinary tract (exclusive of central nervous system involvement). Acquired syphilis of the skeletal system. Of the central nervous system. Of the endocrine glands. The family and public health aspects of syphilis: Epidemiology. Syphilis and pregnancy. Congenital (prenatal) syphilis. The organization of the syphilis clinic. Historical note. References. Index.

Note: A handbook for advanced medical students and a reference book intended as a summary of all of the phases of the disease. Description, diagnosis, and therapy are given for each type of syphilis presented, accompanied by photographs of actual cases. The bibliography contains approximately 500 references.

KAHN, REUBEN LEON

Serology in syphilis control; principles of sensitivity and specificity, with an appendix for health officers and industrial physicians. Baltimore: The Williams & Wilkins Company, 1942. 206 p. illus. 23 cm. \$3.00. 2464

Contents (abridged): Introductory. Definition of sensitivity and specificity. Limitless sensitivity. Should we aim at 100% sensitivity in syphilis? Efforts to increase sensitivity: complement fixation. Precipitation in syphilis. Practical aspects in establishing sensitivity level of a serodiagnostic test. Place of a supersensitive test. Different sensitivity levels. Multiple tests. Standard sensitivity level. Quantitative serologic reactions. Appendix: Serology in syphilis control and the health officer. And the industrial physician. Index.

Note: This book was written to give physicians a better understanding of the fundamentals of serologic tests, thus to lead to a better utilization of these tests in combating syphilis. It is intended for the general practitioner as well as the syphilologist. The volume contains no material on technique, but the discussion of the development of complement-fixation and precipitation tests, and the establishment and maintenance of sensitivity and specificity levels of a test may be of interest to laboratory workers. The first portion of the appendix is addressed particularly to public-health officers. The second portion, which includes a report of the Conferences on Serology and Syphilis Control held at Ann Arbor in 1940 and 1941 and summaries of articles read at the 1941 conference, is intended for industrial physicians.

KAMPMEIER, RUDOLPH HERMAN, AND OTHERS

Essentials of syphilology, by Rudolph H. Kampmeier with chapters by Alvin E. Keller and J. Cyril Peterson. 87 illustrations. Philadelphia: J. B. Lippincott Company, 1943. 518 p. illus. (part col.) 20 cm. \$5.00. 2465

Contents: Problem of syphilis control. Biology of syphilitic infection. Examination. Serologic diagnosis. Therapeutic agents and methods. Syphilis: primary, secondary, early, latent, late benign, cardiovascular, of the central nervous system. Syphilis and pregnancy. Congenital syphilis, by J. Cyril Peterson. Marriage and syphilis. Administrative measures, epidemiologic factors, treatment as a factor, general educational measures, in the control and prevention of syphilis, by Alvin E. Keller. Intensive treatment of early syphilis. Index.

Note: The purpose of this text is to supply a practical exposition of syphilis as a systemic disease for the general practitioner, health officer, and undergraduate student. The author has stressed the fact that syphilis is a systemic disease whose manifestations may be manifold, at times presenting problems for every type of specialist. He has emphasized also the need for careful history-taking, examination, diagnosis, the critical evaluation of serodiagnosis, etc., and has drawn largely upon his experience in post-graduate education in syphilis control, particularly in presenting the subject of treatment. The chapter on intensive treatment of early syphilis, which includes treatment with penicillin, was added in the second printing of the book, in 1944.

KILDUFFE, ROBERT ANTHONY

Clinical urinalysis and its interpretation. 40 illustrations. Philadelphia: F. A. Davis Company, 1937. 428 p. illus. 23 cm. \$3.50. 2465a

Contents: Introduction. Kidney functions. Urine composition. Outline of urinalysis. Collection and preservation of specimens. Physical characteristics of urine. Determination and significance of variations. Protein bodies. Reducing substances. Acetone bodies. Pigments. Chlorides. Nonprotein nitrogenous constituents. Miscellaneous constituents. Drugs excreted. Sediments. Renal functional tests. Glucose tolerance tests. Bacteriological examination. Pregnancy. Gravel and calculi. Life insurance examinations. Parasites. Normal findings. Common disease findings. Office laboratory equipment. Formulae. Miscellaneous tables. Index.

Note: The introduction contains a brief history of urinalysis from earliest times and a brief anatomical discussion, in simple terms. The balance of the text is detailed, highly technical, concisely arranged. It is concerned chiefly with the significance of results obtained, although considerable space is given to procedures. Liberal use of subdivision headings in bold-faced type makes for easy reference.

LECOMTE, RALPH MICHAEL

Manual of urology. Third edition. Baltimore: The Williams and Wilkins Company, 1944. 305 p. illus. 23 cm. \$4.00. 2465b

Contents: Methods of examination. Symptomatology. Methods of treatment. Surgical diseases of kidneys. Diseases of the bladder. Prostate. Seminal vesicles. Urethra. Penis. Scrotal contents. Impotence and sterility in male. Literature. Index.

Note: The author's purpose is to provide the medical student with a basic knowledge of the fundamentals of the subject without overburdening him with too many details. The illustrations are for the most part simplified line drawings, many of them from roentgenograms.

LONG, WILLIAM BAYARD, AND JACOB A. GOLDBERG, EDITORS

Handbook on social hygiene. With a foreword by Edward L. Keyes. Illustrated with 62 engravings. Philadelphia: Lea & Febiger, 1938. 442 p. illus. 20 cm. \$4.00. 2466

Contents: The campaign against syphilis and gonorrhea, by W. F. Snow. History and cutaneous manifestations of syphilis, by Howard Fox. The diagnosis of syphilis, by W. B. Long. The treatment of syphilis, by W. B. Long. Syphilis of the nervous system, by I. S. Wechsler. The medical aspects of syphilis, by I. O. Woodruff. Syphilis and gonorrhea of the eye, by C. Berens. Prenatal and congenital syphilis, by W. B. Long. Gonorrhea in the male, by Howard S. Jeck. Gonorrhea in the female, by E. D. Barringer. Vaginitis, by R. A. Benson. Laboratory aspects of the venereal diseases, by J. F. Mahoney. Hospitals and out-patient clinics, their organization and management in relation to the venereal diseases, by C. W. Munger. Department of Health programs for combating syphilis and gonorrhea, by C. W. Clarke. Statistics relating to syphilis and gonorrhea, by J. A. Goldberg. Social service and epidemiology relating to venereal diseases, by R. W. Goldberg. The responsibility of nursing schools in the control of syphilis and gonorrhea, by A. D. Wolf. The Public health nurse and syphilis control, by A. H. Grant. The problems of syphilis and gonorrhea in family welfare agencies, by A. E. Dines. Social hygiene education in relation to venereal disease control, by M. A. Bigelow. Legal aspects of the venereal diseases, by J. A. Goldberg.

Note: A composite volume which treats both the medical and the social aspects of venereal disease. It is designed for practicing physicians, laymen interested in the social aspects of the problems, and public health officers.

LOWSLEY, OSWALD SWINNEY, AND THOMAS JOSEPH KIRWIN

Clinical urology. Drawings by William P. Dusch. Second edition. Baltimore: The Williams & Wilkins Company, 1944. 2 v. illus. (part col.) 23 cm. \$10.00. 2466a

Contents (abridged): Volume I, History taking, physical examination. Urine. Renal function tests. Instrumental examination. Roentgenography. Anesthesia. Embryology, anatomy, anomalies, physiology, injuries and diseases, treatment (operative and non-operative) of: Penis. Scrotum and scrotal contents. Vas deferens, seminal vesicle, and ejaculatory duct. Female external genitalia. Male urethra. Gonorrhea in the male. Cowper's glands. Female urethra. Prostate gland. Volume II, Embryology, anatomy, anomalies, physiology, injuries and diseases, treatment (operative

and non-operative) of: Bladder. Ureter. Kidney. Radium and Roentgen-ray therapy of genito-urinary tract. Dried human blood plasma therapy.

Note: This book is written for the medical student, general practitioner, and general surgeon, and as a reference work for the urologist. New material added in this second edition includes particularly the use of sulfa drugs and penicillin in the application of chemotherapy to urology. Also, the renal factor in, and surgical treatment of arterial hypertension; calyceal resection; castration treatment of prostatic carcinoma; aneurysm of the renal artery; hydrocalyx; a new theory of etiology and a new operation for vesical papillomatosis; automatic tidal drainage of the bladder; continuous (fractional) spinal anesthesia in urology; dried blood plasma therapy; new diets in urology, especially for calculus, and methods of dissolving certain types of urinary calculi. Sections which have been augmented include the following: those dealing with syphilitic chancre; carcinoma and sarcoma of the prostate; hormonal treatment of the prostate; renal cysts; urogenital tuberculosis; plastic induration of the penis; obstructions at ureteropelvic junction; ureterointestinal anastomosis; pre- and postoperative treatment of the prostatic case, and postoperative care of the renal case. Detailed descriptions of these operations, instruments, etc., have been given in the text.

MCLELLAN, FREDERICK CLAIR

The neurogenic bladder. Springfield, Ill.: Charles C. Thomas, 1939. 206 p. illus. 24 cm. \$4.00. 2467

Contents: The normal bladder. The anatomy of the nerves to the bladder. The physiology of the autonomic nervous system. The neurophysiology of the bladder. Suprasegmental control of bladder function. The act of micturition. Classification of the neurogenic bladder. The cystometric study. Myogenic vesical dysfunction. Enuresis. Treatment of the neurogenic bladder. Conclusions. Appendix: Summary of one hundred neurogenic bladders. Illustrative charts: the normal bladder (9); the uninhibited neurogenic bladder (7); the normal reflex neurogenic bladder (8); the spastic reflex neurogenic bladder (2); the autonomous neurogenic bladder (4); the neurogenic bladder following traumatic myelitis (1); the hypertonic myogenic bladder (5); the hypotonic myogenic bladder (3). Bibliography. Index.

Note: The problem of the neurogenic bladder as a result of disease of special location in the nervous system is presented in readily understandable form. A working knowledge of the value of cystometry in the differential diagnosis between neurogenic and non-neurogenic disease of the bladder is given. A résumé of anatomy and physiology of the nerves in relation to bladder function is included. In the appendix is a synopsis of one hundred neurogenic bladders with pertinent data. Fifty-seven figures and charts illustrate the text. All clinical observations and interpretations have been correlated with the general neurologic examination.

MOORE, JOSEPH EARLE, AND OTHERS

The modern treatment of syphilis by Joseph Earle Moore with the collaboration of Jarold E. Kemp, Harry Eagle, Paul Padget, Mary Stewart Goodwin, and Frank W. Reynolds. Second edition, 1941. Third printing, 1943. Springfield, Ill.: Charles C. Thomas, 1943. 717 p. illus. 26 cm. \$7.50. 2468

Contents (abridged): Prognosis. Therapeutic problem. Chemotherapy. The arsphenamines, arsenoxides, tryparsamide. Reactions from arsenical drugs. Bismuth. Mercury. Iodides. Technical aspects of treatment. Treatment of early syphilis—late syphilis—latent syphilis—benign late syphilis—cardiovascular syphilis—visceral syphilis—ocular syphilis—a symptomatic neurosyphilis. The incidence, prophylaxis, and prognosis of neurosyphilis. Treatment of neurosyphilis. Treatment of syphilis complicated by pregnancy. Treatment of congenital syphilis. Serological tests. Therapeutic tests. Syphilis and marriage. Prophylaxis. Public health aspects. Intensive arsenotherapy. Venereal disease control in the army and navy. 122 tables. Index.

Note: The materials in this book are derived from systematic plans and studies which began in 1914 at The Johns Hopkins Hospital and are augmented by contributions of members of the Cooperative Clinical Group and the facilities of the Public Health Institute of Chicago. The materials are based upon an experience with over 35,000 cases of syphilis, over 200,000 bismuth injections, over 15,000 mercury sulphide injections, about 5,000 neoarsphenamine and mapharsen cases, and the results of six systems of treatment of neurosyphilis used at The Johns Hopkins Hospital. A subject and author index covers 90 pages.

NELSON, NELS ALBIN, AND OTHERS

The principles of venereal disease control. A detailed discussion of the recommendations for a venereal disease control program in state and local health departments, as outlined in the revised report of the Advisory Committee to the United States Public Health Service, by Nels A. Nelson, in collaboration with R. A. Vonderlehr, Herman N. Bundesen, Joseph Earle Moore, William F. Snow, Percy S. Pelouze, John H. Stokes, Udo J. Wile, and Lida J. Usilton. Washington, D.C.: Government Printing Office, 1942. 105 p. illus. 23 cm. (United States. Public Health Service. Supplement no. 17 to Venereal disease information) Paper, \$0.20. 2469

Contents: Introduction. Organization of the program in co-operation with medical and allied professions and lay organizations. Administration of the program. The venereal disease control program: Collection and analysis of morbidity data. Special studies. Mortality data. Laboratory services. Distribution of drugs. Treatment services. Diagnosis, treatment, and determination of cure, in the clinic. Case-holding and case-finding. Information and education. The charlatan and the unethical pharmacist and physician. Prophylaxis. Prostitution. National defense. Social hygiene. Financing the program. Chancroid, granuloma inguinale, and lymphogranuloma venereum. References. Appendices: Qualifications of personnel. U.S. Public Health Service nomenclature for syphilis. Diagnosis of gonococcal infection by the microscopic examination of films stained by Gram's method. Memorandum concerning the use of trypanamide. Minimal clinic equipment. Interpretation of spinal fluid findings. The prevention and control of reactions to antisyphilitic therapy. Prophylaxis of syphilis and gonorrhea. The May Act. An agreement by the War and Navy Departments, the Federal Security Agency, and state health departments. Suggested reading list.

Note: This publication serves as a statement of the principles upon which health departments can build their venereal disease control programs. It contains the complete detailed program toward which the Advisory Committee which prepared it believes that every state and other political subdivision of 500,000 population or over should strive.

OCKERBLAD, NELSE FREDERICK, AND HJALMAR E. CARLSON

Urology in general practice. Chicago: The Year Book Publishers, Inc., 1943. 383 p. illus. 21 cm. (The General practice manuals) \$4.00. 2470

Contents: Urologic diagnosis. Catheters and sounds; their uses and dangers. Infections of the kidney (exclusive of tuberculosis and gonorrhea). Nephritis. Kidney ptosis. Genito-urinary tuberculosis. Hydronephrosis. Tumors and cysts of the kidney. Anomalies of the genito-urinary tract. Urinary lithiasis. The ureters and their diseases. The urinary bladder and its diseases. Diseases of the prostate and seminal vesicles. Carcinoma of the prostate. Diseases of the external male genitalia. Diseases of the male urethra. Diseases of the female urethra. Sterility and impotency. Injuries to the kidney. The sulfonamides in urology. Gonorrhea. Subject index.

Note: A simply-written text intended to help the general physician manage the emergencies and other cases in this specialty which present themselves in his practice. Emphasis is put on the 65 genito-urinary diseases most frequently encountered. Details of 73 treatment measures, 35 diagnostic tests and techniques and 15 surgical or manipulative routines are given. The authors do not describe all possible procedures for each disease, but confine their exposition to measures that have succeeded in their own hands. The sulfonamides in gonorrhea and other genito-urinary infections, the newer understanding of urinary calculi, and endocrinology as an approach to the problem of prostatic cancer are included. Military and industrial aspects of urologic practice are covered. Drawings and photographs depict the manipulation of instruments, method of prostatic massage, relations of genito-urinary parts and lesions, etc.; and X-ray plates illustrate diagnostic pointers.

PELOUZE, PERCY STARR

Gonorrhea in the male and female: a book for practitioners. Revised reprint of third edition. Philadelphia: W. B. Saunders Company, 1943. 489 p. illus. (part col.) 24 cm. \$6.00. 2471

Contents (abridged): Introduction. Gonococcal infections in the male. Gonorrhea in the female; a study in analogies. The medical profession and gonorrhea control. Index.

Note: This book is not intended as a textbook. Rather, it is the experience of a recognized authority who has set down the diagnostic procedures and therapeutic methods that he has found to be resultful. No effort has been made to review all methods, but simply to give in detail the one or two approaches to the disease that, based on past experience, can be safely followed by the practitioner with his own patients. The pathology of gonorrhea is reviewed, as are individual susceptibility, mode of infection, incubation, symptoms and causes, clinical course, and complications. Treatment is plainly indicated and contraindicated, including local medication, prostatic massage, vaccines, oral treatment, use of sulfonamides, etc. The section on the female deals with the special aspects of the disease when found in women and also before maturity. The final part is devoted to consideration of the gonorrhea problem and the opportunities open to the profession to influence the improvement of conditions. The third edition has been entirely rewritten. Because of many important advances, particularly with the sulfonamides, a revised reprint was issued of the third edition.

PELOUZE, PERCY STARR

Office urology, with a section on cystoscopy. With 443 illustrations, 19 of them in color. Philadelphia: W. B. Saunders Company, 1940. 766 p. illus. (part col.) 25 cm. \$10.00. 2472

Contents: Introduction. Anatomic structure and physiologic function. History-taking, examination of the patient, and office procedures. General diagnostic methods. Urogenital symptoms. General methods of treatment. Anesthesia and minor surgical procedures. Diseases of the penis. Diseases of the urethra. Diseases of Cowper's glands, prostate gland and seminal vesicles. Diseases of the scrotum and scrotal contents. Diseases of the bladder and ureter. Diseases of the kidney. Sexual problem. Cystoscopy and roentgenography. Index.

Note: This book was written primarily for the general practitioner to help him diagnose and treat the urologic disorders met in office practice. Specialists, too, will find it of interest and the medical student may use it effectively in conjunction with his study of genito-urinary diseases. The book is entirely medical, with a chapter on minor surgical procedures that may be easily performed in the office. Of particular significance is the attention to the psychological side of urologic diseases. The chapter on the sexual problem deserves special mention, as does the one on cystoscopy. In this latter chapter, complete step-by-step technique is given and stress placed on clinical interpretation of the findings of cystoscopic examination.

SIMONS, IRVING

Unto the fourth generation; gonorrhea and syphilis; what the layman should know. With illustrations by M. Emanuel. New York: E. P. Dutton & Company, Inc., 1940. 243 p. illus. 21 cm. \$2.50. 2473

Contents (abridged): Preface: Why this "Book for the layman" was written. Glossary. Book I, Gonorrhea: Introduction: Is gonorrhea important? The germ of gonorrhea and its transmission. How gonorrhea ordinarily manifests itself. The morbidity of gonorrhea. The surgery and mortality of gonorrhea. The surgery of gonorrhea in woman. Book II, Syphilis: Historical data on syphilis. How the infection of syphilis is acquired and transmitted. What symptoms suggest the possibility of syphilis. The diagnosis of syphilis: the role and place of the clinical and of the laboratory findings in diagnosis. Book III, The way out—the private physician and his place in the problem. Scientific addenda: Facts and fallacies about the non-venereal transmission of gonorrhea and syphilis. The diagnosis of syphilis: further data. The difficulty in locating the elusive gonococcus. The progress of a case of untreated syphilis. Index.

Note: The history of these social diseases and of the research that has led up to modern diagnosis and treatment; how infection occurs; how to recognize the first symptoms of infection. This

book does not stress the details of treatment (which should be carried out only by a physician) and is not offered as a self-cure treatise.

SIMPSON, WALTER MALCOLM, AND OTHERS

The treatment of syphilis with artificial fever combined with chemotherapy. Results of ten years of experience. A critical review, by Walter M. Simpson, H. Worley Kendell, and Donald L. Rose. Washington, D.C.: Government Printing Office, 1942. 51 p. illus. 23 cm. (United States. Public Health Service. Supplement no. 16 to Venereal disease information) \$0.10. 2474

Contents: Neurosyphilis. Ocular syphilis. Resistant seropositive latent syphilis. Early syphilis. Discussion. Summary and conclusions. Bibliography.

Note: In this pamphlet the authors report on the work of others and also record their personal experiences in this field.

STOKES, JOHN HINCHMAN, AND OTHERS

Modern clinical syphilology: diagnosis, treatment, case study, by John H. Stokes, Herman Beerman and Norman R. Ingraham, Jr. Third edition. Philadelphia: W. B. Saunders Company, 1944. 1332 p. illus. 25 cm. \$10.00. 2475

Contents: Fundamental bacteriology, pathology, and immunology of syphilis. Clinical approach to syphilis. Fundamental diagnostic tests. Identification of *Spirochaeta pallida*. Serological tests on blood and spinal fluid. Fundamental principles of treatment. The heavy metals and iodides. The arsenicals—theoretical and practical considerations. Technical methods and considerations in diagnosis and treatment. Reactions, complications and contraindications of treatment for syphilis. Treatment planning, latent syphilis and other collateral aspects and special problems. Diagnosis of early syphilis—the chancre. The secondary stage. Clinical aspects of relapse, reinfection and progression in early syphilis. Treatment of early, early latent and late latent syphilis. The landmarks of late syphilis on skin and mucous membranes. Late syphilis of the skeletal system. The gastro-intestinal tract in syphilis. Syphilis of the liver and spleen. Syphilis of the cardiovascular system. Late syphilis of the nervous system. Familial and prenatal syphilis. Miscellaneous aspects and case memoranda. Syphilis in public health and military medicine. The current developments—penicillin. Index.

Note: Because, as the authors point out in their preface, syphilis is the practitioner's problem, this book has been directed especially to those in this field of practice. It is, however, a presentation of interest to the student, to the syphilologist, dermatologist, and laboratory worker. The aim of the authors has been to give so nearly as physically possible in a single volume, a complete discussion of syphilis—every type, in every stage. It seeks to guide the doctor around pitfalls by citing specifically the common "blunders" that can be made. It takes up the problems brought on when pregnancy and other conditions complicate syphilis. It discusses public health and military hygiene aspects and also legal and sociologic matters. Symptoms, diagnostic procedures, and treatment are stressed. Six hundred thirty-four illustrations are included. Four hundred fifty-three thumb-nail summaries are given which provide a full clinical résumé of each subject considered. For the third edition, 75 percent of the material is completely new or rewritten and many important changes have been made in the remaining 25 percent in order to incorporate the many advances in general knowledge, diagnosis, and treatment. One of the major additions is the large section on penicillin therapy. Fever therapy, massive dose arsenotherapy, 5-day drip technique, and U.S. Army methods have also been included.

UNITED STATES. PUBLIC HEALTH SERVICE

The newer chemotherapy of venereal diseases. A symposium. Washington, D.C.: Government Printing Office, 1941. 42 p. illus. 23 cm. (United States. Public Health Service. Supplement no. 13 to Venereal disease information) Paper, \$0.10. 2476

Contents: Treatment of gonorrhea with sulfanilamide and related drugs, by H. H. Young, H. C. Harrill, J. H. Semans, and O. S. Culp. Sulfapyridine in the treatment of gonococcal infections, by R. B. Wolcott, J. F. Mahoney, and C. J. Van Slyke. Value of sulfanilamide in gonorrheal arthritis, by O. S. Culp and H. H. Young. Venereal lymphogranuloma; results of sulfanilamide therapy, by W. E. Graham and E. W. Norris. Treatment of venereal lymphogranuloma with sulfanilamide, by A. W. Grace and F. H. Suskind. Sulfanilamide treatment of chancroid, by O. S. Culp and C. E. Burkland.

Note: A series of articles by doctors of medicine on the treatment of venereal diseases with sulfa drugs.

WEISMAN, ABNER IRVING

Spermatozoa and sterility, a clinical manual; with a foreword by Robert L. Dickinson. With 77 illustrations. New York: P. B. Hoeber, Inc., 1941. 314 p. illus. 24 cm. \$5.50. 2477

Contents: Early history. Anatomy, embryology, physiology, and chemistry of spermatozoa. The seminal fluid. Metabolism and respiration of spermatozoa. Comparative spermatology: animal experimentation. Causes of sterility in the male. Method of obtaining specimens for semen examination. Transportation of the semen specimen. Tests for semen. Interpretation and evaluation of semen analysis. Spermigration in female secretions. Special techniques in spermatozoal study. Longevity of spermatozoa *in vivo*. Effect of temperature on the survival of spermatozoa *in vitro*. Abnormalities of the female which inhibit impregnation. Artificial insemination. Medicolegal aspects of artificial insemination. Proof of impregnation. Speed of travel of spermatozoa within the female. Resistance of spermatozoa to changes in chemical environment. Sterility produced by spermatoxins. Semen investigation in legal medicine. Spermatozoal output in undescended testicles. Treatment of azoospermia, oligozoospermia, and necrospermia in scrotal testes. Control of sex by influencing spermatozoa. Theoretical factors in fertility and sterility. Looking forward. Bibliography. Index.

Note: A reference manual and source book. The text is primarily addressed to the general practitioner who would like to diagnose and treat his own sterility cases. Seven hundred sixty-four articles and papers on the subject are listed in the bibliography.

YEAR BOOK OF UROLOGY

The 1944 Year book of urology. [Edited by] Oswald S. Lowsley. Chicago: The Year Book Publishers, Inc., 1944. 416 p. illus. 18 cm. \$3.00. 2478

Contents: Special article: Use of penicillin in the treatment of urogenital infections, by Lloyd R. Reynolds and Henry M. Weyrauch. General considerations: Anuria. Infections. Tuberculosis. Technic. Kidney and adrenals: Diagnosis. Renal function. Anomalies. Injuries. Hypertension. Hydronephrosis. Tuberculosis. Actinomycosis. Calculi. Cysts. Tumors. Technic. Adrenal. The ureter: Anomalies. Calculi. Tumors. Technic. The bladder: Bilharziasis. Anomalies. Calculi. Tumors. Technic. Transurethral operations. The prostate: Calculi. Tumors. Technic. The genitalia: Infertility. True hermaphroditism. Prepuce. Penis. Male urethra. Hypospadias. Female urethra. Spermatic cord. Epididymis. Testis. Anomalies. Tumors. Seminal vesicles. Mullerian ducts. Scrotum. Gonorrhea: Diagnosis. Sulfapyridine. Sulfathiazole. Sulfonamide-resistance. Penicillin. Prophylaxis. Indexes.

Note: An illustrated annual digest of the literature of urology appearing in clinical and scientific journals throughout the world, intended for both specialists and general practitioners. The present issue contains about 170 articles on diagnostic measures and therapeutic procedures, some of which are followed by editorial comments in smaller type. Emergencies, such as genito-urinary complications resulting from accidents, and simple measures, such as circumcision and catheterization, are covered, as well as major operations. The work is illustrated with photographs and drawings of clinical cases, and all records are documented in footnote references.

YOUNG, HUGH HAMPTON

Genital abnormalities, hermaphroditism & related adrenal diseases. With 379 plates containing 534 drawings by William P. Didusch. Baltimore: The Williams & Wilkins Company, 1937. 649 p. illus. 26 cm. \$10.00. 2479

Contents: Hermaphroditism in literature and art. Embryology of hermaphroditism. Pseudohermaphrodites. True hermaphrodites. The adreno-genital syndrome. Vaginal abnormalities in hermaphroditism. Masculinization due to ovarian tumor. Prostates in females. Hyper- and hypogonadism. Gynecomastia. Hypospadias. Epispadias. Exstrophy of the bladder. Cryptorchidism. Congenital valve obstruction of prostatic urethra. Abnormalities of epididymides, vasa and seminal vesicles. Atresia ani urethralis. Relation of genital tract to endocrine glands. Endocrine therapy. Index.

Note: The surprisingly extensive literature and art portraying hermaphroditism is the subject of the opening chapter of this book. It is followed by a study of the subject as viewed in the light of modern research on embryology, biology, and endocrinology. Fifty-five of the author's cases are presented briefly. Among them are some of the most extraordinary examples of embryologic dysfunction and congenital abnormality ever assembled. The unique surgical procedures devised for relief of these conditions are also described.

Allergy

BLANTON, WYNDHAM BOLLING

A handbook of allergy for students and practitioners. Springfield, Illinois: Charles C. Thomas, 1942. 190 p. illus. (part col.) 23 cm. \$3.00. 2480

Contents: Part I, Fundamentals of allergy: Anaphylaxis. Allergy. Part II, The causes of allergy: Inhalants. Ingestants. Absorbents, injectants and contactants. Part III, The results of allergy: Allergy of the nose and adjacent mucous membranes. Asthma. Dermatologic allergy. Gastrointestinal and other allergies. Appendix. Reference books on general allergy. Index.

Note: This is a simple and clear presentation of the common conditions now attributed to allergy. The diagnostic and therapeutic practices useful to practitioners are given in a condensed manner.

CLEVELAND CLINIC

Allergy in clinical practice. By staff-members of the Cleveland Clinic under the direction of Russell L. Haden. Edited by J. Warrick Thomas. 92 illustrations, including 14 subjects in color. Philadelphia: J. B. Lippincott Company, 1941. 354 p. illus. (part col.) 23 cm. \$5.00. 2481

Contents: Introduction: Allergy as a factor in general medicine. The approach to the problem of an allergic individual. Bronchial asthma. Hay fever. Perennial nasal allergy. Allergic bronchitis. Bronchiectasis. Contact dermatitis. Atopic dermatitis. Drug eruptions. Allergic manifestations to superficial fungous infections. Urticaria and angio-neurotic edema. Gastro-intestinal allergy. Ocular manifestations of allergy. Migraine and other allergic headaches. Endocrine considerations in the allergic patient. Uncommon manifestations of allergy. Allergy in clinical practice. References. Indexes.

Note: This study of the diseases of hypersensitivity is intended to illustrate the role of allergy in the production of disease in man. A number of specialists have contributed the results of their clinical experience together with those contained in pertinent literature. For each allergy described there is given the differential diagnosis, causes, symptoms, physical findings, allergies factors, case histories, treatment, and summary. Intended mainly to help the clinician in evaluating allergy as part of his patient's problem, and to demonstrate to the practitioner the possible role of allergy in clinical medicine. Over 150 case histories are presented.

COCA, ARTHUR FERNANDEZ

Familial nonreaginic food-allergy. Springfield, Illinois: Charles C. Thomas, 1943. 160 p. illus. 22 cm. \$3.00. 2482

Contents: Classification of allergic disease. Familial nonreaginic food allergy: its specific diagnosis and treatment. Additional clinical data of thirteen additional cases. Uncompleted and exceptional cases and failures. The practical management of non-reaginic food-allergy. The trial-diet. The symptoms of familial nonreaginic food-allergy. Miscellaneous notes. The mechanism of familial nonreaginic food-allergy. The histamine-theory. The prin-

ciple of major and minor allergens. Histamine-therapy. Concerning the discontinuity of attacks of nonreaginic food-allergy. The nonallergic pulse-rate. General remarks. The statistical method of investigating whether a certain pathological condition is a symptom of nonreaginic food-allergy. On the relation of familial non-reaginic food-allergy to hypertension. Inheritance of familial nonreaginic food-allergy. Familial nonreaginic food-allergy as a predisposing cause of common cold. Conclusions. Index.

Note: A new method of approach to the diagnosis and treatment of the relatively large group of allergic diseases (migraine, urticaria, gastrointestinal allergy, neuralgias, and a number of more or less serious conditions hitherto unrecognized as allergic) in which the usual cutaneous tests fail almost entirely. The new diagnostic method described provides a highly accurate, practical means of identifying the excitants of food-allergy and thus enables the determination of the symptoms and syndromes which are food-allergic.

COHEN, MILTON BRONNER

A manual of allergy for general practitioners. New York: P. B. Hoeber, Inc., 1941. 156 p. illus. 19 cm. \$2.00. 2483

Contents: Definition and general principles. Classification of allergy. Pathology of allergy. Mechanism of allergic symptom production. Life history of allergy. Diagnosis of allergy: History. Physical examination. Laboratory examinations. Treatment of allergy. Some important allergens. Allergic rhinitis. Asthma. Eczema. Urticaria, angioneurotic edema, gastro-intestinal allergy, and migraine. Serum reactions. Bibliography. Index.

Note: Presents in concise form a working knowledge of the causes and effects, symptoms and diagnosis, remedies and treatment of most of the common allergic manifestations. Intended as a didactic handbook for the use of the general practitioner, the work contains only the author's interpretations and avoids discussion of the literature and of points of disagreement between various experts. There are 12 references listed in the bibliography.

FEINBERG, SAMUEL MAURICE

Allergy in practice, with the collaboration of Oren C. Durham. Chicago: The Year Book Publishers, Inc., 1944. 798 p. illus. 23 cm. \$8.00. 2483a

Contents: Introduction and history. Hypersensitiveness in animals. Anaphylaxis. Hypersensitiveness in man. General causes of allergic diseases. Epidermal allergens. Pollens and pollen allergy, by Oren C. Durham. Allergy to fungi. Miscellaneous inhalants. Food allergy. Allergy to drugs. Allergy to injected substances. Internal allergens (intrinsic allergy). Allergy to physical agents. Asthma: Symptoms and pathology. Diagnosis: Asthma and allergy. Treatment of allergic diseases. Hay fever: Manifestations, causes, diagnosis. Hay fever treatment. Hyperesthetic rhinitis. Urticaria and angioneurotic edema. Atopic dermatitis and dermatophytosis. Contact exema. Allergy of the digestive tract. Migraine and allergic headaches. Allergy of the eye. Miscellaneous manifestations. Index.

Note: A comprehensive survey of the causes, diagnosis, and therapy of all types of allergies, including an extended account of allergy to fungi. The chapter on "Pollens and pollen allergy," by Oren C. Durham, is an exposition of the botanical aspects of allergy. Fully one-fifth of the book is devoted to a discussion of individual allergic manifestations other than asthma and hay fever. Diets and preparation of extracts have been presented briefly. Reference tables and check lists are included.

FEINBERG, SAMUEL MAURICE

Asthma, hay fever and related disorders; a guide for patients. Philadelphia: Lea & Febiger, 1933. 124 p. illus. 18 cm. \$1.50. 2484

Contents: Historical. Symptoms of asthma: attack, complications. Causes—general considerations: constitution and heredity, secondary and other factors. Primary causes: foods, epidermal substances, pollens, miscellaneous, drugs, bacteria. Investigation: history taking, examination, skin tests. Treatment: prophylactic, specific, non-specific. General care and advice: instructions for the use of adrenalin. Special data: wheat-containing foods, egg-containing foods, milk-containing foods, dust-free rooms. Hay fever: diagnosis, prophylactic treatment, specific treatment, other forms, hyperesthetic rhinitis. Other allergic disorders: eczema, other skin disturbances, abdominal allergy, migraine and headache, miscellaneous disorders.

Note: This book is written in the belief that a certain amount of knowledge of the steps taken by the physician in the diagnosis

and treatment of these conditions should be understood by the patient. It supplies the patient with an understanding of the nature of the disease and the objectives at which his physician is aiming. Incidentally, it contains much special data concerning food, environments, and other causes of allergy helpful to the physician.

RACKEMANN, FRANCIS MINOT

Clinical allergy, particularly asthma and hay fever; mechanism and treatment. New York: The Macmillan Company, 1931. 617 p. illus. 24 cm. (Macmillan medical monographs) \$7.50.

2485

Contents: Introduction and historical survey. Anaphylaxis in animals and in man. Chemistry of hypersensitiveness. Immunology of hypersensitiveness. Anti-anaphylaxis and desensitization. Bacterial allergy. Nature and original of allergy. Diagnosis of hypersensitiveness. Clinical manifestations of allergy: Introduction. Reactions of man to horse serum. Hay fever and the pollens responsible. Treatment of hay fever with special reference to specific desensitization. Vasomotor rhinitis. Asthma: Nature; pathology; etiological classification. Clinical types of asthmatic patients. Asthma: Symptoms and signs; diagnosis. Asthma and the nose and throat. Treatment of asthma with special reference to non-specific measures. Asthma: results of treatment; prognosis. Urticaria, erythema multiforme and angioneurotic edema. Eczema, migraine, and other manifestations of hypersensitiveness. Discussion and summary. Appendix: Alphabetical list of allergens except pollens. Patent medicines used in asthma and hay fever. Index.

Note: A treatise written from a primarily clinical point of view, defining the mechanism of asthma, hay fever, and allied disorders, and giving diagnosis and treatment with the results obtained. It digests a mass of previous writings on the subject, points out the sequence of observations which have led to recent knowledge, and correlates some of these observations with the author's own experience at the Massachusetts General Hospital. It coordinates immunology with clinical medicine, and is a valuable survey of the entire subject of allergy for both immunologist and clinician. References are arranged by chapters.

RATNER, BRET

Allergy, anaphylaxis and immunotherapy, basic principles and practice; a treatise presenting the fundamental principles and practice governing the use of antisera, vaccines, toxoids, blood transfusions, blood substitutes and sulfonamides, in the prevention and treatment of infectious diseases and of the allergic phenomena resulting from their use. Baltimore: The Williams & Wilkins Company, 1943. 834 p. illus. 23 cm. \$8.50.

2486

Contents (abridged): Book I, Principles and practice of immunotherapy: Materials used in diagnosis, prophylaxis and therapy of infectious diseases: Nature of materials. Description and methods of preparation. Principles governing sulfonamide therapy. Immunotherapy. Book II, Allergy to immunotherapeutic agents: Introduction to study of the allergic state. Serum sickness. Acquisition of serum allergy. Serum allergy. Serum sickness and serum allergy of central nervous system. Reactions and accidents due to blood transfusions. Drug allergy. Book III, The allergic state: Physiological pathology. Blood changes in allergy and anaphylaxis. Underlying mechanism of the allergic state. Bibliography. Index.

Note: In his studies on serum sickness and its relation to allergy, the author discovered that a knowledge of serum allergy in all its essentials and its many ramifications would provide in essence a knowledge of the genesis and fundamentals of allergy in general. Each case of the disease may be looked upon as an unplanned experiment in the human species, which can be followed from inception to terminus. The realization of this fact furnished impetus to the writing of this book, which is intended not only for specialists in the fields of immunotherapy and allergy, and for laboratory workers, but also for general practitioners. The sections on immunotherapy present the modern methods of treating infectious diseases, and also provide the criteria essential for exercise of sound judgment in their use. The principles underlying these methods are also presented in order

to help the practitioner understand the observations and reasoning upon which the procedures he employs are based.

ROWE, ALBERT HOLMES

Elimination diets and the patient's allergies; a handbook of allergy. Second edition, thoroughly revised. Philadelphia: Lea & Febiger, 1944. 256 p. illus. 24 cm. \$3.50.

2487

Contents: Elimination, test negative and other trial diets. Diagnosis of allergy. Causes of allergy and their control. Clinical allergy and its control. The elimination diets. Appendix.

Note: The new edition stresses the importance of food allergy in the production of allergic manifestations. Emphasis is placed upon menus and special recipes with supplemental diets for unusual problems. Other causes of clinical allergy and methods of diagnosis and control are also discussed.

SULZBERGER, MARION BALDUR

Dermatologic allergy; an introduction in the form of a series of lectures. Springfield, Ill.: Charles C. Thomas, 1940. 540 p. illus. (part col.) 23 cm. \$8.50.

2488

Contents (abridged): Definitions and classifications. The skin as a protective organ, the recorder, and possible originator of allergic changes. Some fundamental phenomena of allergy and their significance. Investigation of individual cases. Common allergic skin reactions and skin diseases. Eczematous contact-type dermatitis. Urticarial responses to skin tests. Urticarial skin diseases, including atopic dermatitis. Some manifestations of allergy in infectious diseases. Allergy to tuberculin. Allergy to fungi. Allergy as the basis of manifestations of cutaneous syphilis. Allergy and allergic skin reactions in miscellaneous infections. Drug allergy and drug eruptions. The future of allergy. Indexes.

Note: This book consists of a series of lectures which the author has used in instructing students beginning the study of dermatologic allergy in the Post-Graduate Medical School and Hospital of Columbia University. He stresses the fact that it is meant to be an introduction to the subject, and lays emphasis on definitions of terms and descriptions of techniques. The following features are of practical interest: a translation of von Pirquet's original article; a comprehensive list of substances and concentrations for patch testing; a table of criteria for determining the industrial character of a dermatitis; suggestions for managing eczematous and urticarial dermatoses; a glossary. Marginal notes are added as an aid in summarizing the material. The book is intended for students and practitioners of both general medicine and dermatology.

URBACH, ERICH

Allergy. With the collaboration of Philip M. Gottlieb. New York: Grune & Stratton, 1943. 1073 p. illus. 26 cm. \$12.00.

2489

Contents: Part I, Fundamentals of allergy: Historical survey. Basic principles. Incidence. Experimental basis. Pathology of tissues and blood. Chemistry of allergy. Antigens (allergens). Antibodies. Diagnosis. Principles of treatment. Part II, Etiologic agents of allergic diseases: Inhalants. Ingestants. Injectants. Contactants. Infectants. Parasitic agents. Part III, Symptomatology and therapy: Anaphylactic shock. Allergic diseases of the upper respiratory tract. The lower respiratory tract. The gastro-intestinal tract. The liver and gallbladder. Allergic skin diseases. Allergic diseases of the nervous system. Allergic diseases of the eyes and ear. The cardiovascular system. Hematopoietic system. Allergic diseases of the joints. The urinary tract. Allergic manifestations due to functional and pathologic changes of the female genital organs. Allergy in the neonatal period, infancy, childhood. Allergy in the aged. Appendix. Indexes.

Note: A critical presentation of the entire field of allergy, for the student of allergy, the practitioner, and the specialist in related fields in which allergy plays a role, together with representative illustrations to serve as a guide in the diagnosis and management of diseases of hypersensitiveness. Fundamental principles, methods of diagnosis and treatment, and the more common etiologic agents are discussed in detail, followed by a study of the various diseases from the clinical and therapeutic viewpoints. The writer holds that a given case may properly be called allergic only if the fact that it is mediated by an antigen-antibody reaction has been established in principle. There are over 2,000 references to the literature of the subject in footnotes.

Malignant Growth

AMERICAN SOCIETY FOR THE CONTROL OF CANCER, INC.

Cancer; a study for laymen. Prepared for the Women's Field Army of The American Society for the Control of Cancer, Inc., Clarence C. Little, managing director. New York: Farrar & Rinehart, Inc., 1944. 122 p. illus. 28 cm. \$1.50.

2489a

Contents: Preface. Section I, Research, by C. C. Little. Section II, Diagnosis and treatment: Introduction. The lymphatics, by Florence R. Sabin. Preparation of tissue for microscopic study, by C. C. Little. Why do we have cancer hospitals? by James Ewing. Some facts about X-rays and radium, by Edith Quimby. Diagnosis and treatment of cancer, by Lloyd E. Craver. Hormones and cancer, by Howard C. Taylor, Jr. Cancer of the skin, lip and tongue, by Hayes Martin. Cancer of the breast, by Frank E. Adair. Cancer of the uterus, by Howard C. Taylor, Jr. Cancer of the stomach, by George T. Jack. Cancer of the rectum, by George E. Binkley. Cancer of the bladder and prostate, by Benjamin Barringer. The thyroid gland: its function and diseases, by William L. Watson. Trauma and cancer, by James Ewing. Section III, Education, by C. C. Little. Index.

Note: This large illustrated pamphlet contains a brief review for the intelligent and interested layman of the more important knowledge of cancer. The work was edited by Dr. Clarence C. Little.

BAILEY, PERCIVAL, AND OTHERS

Intracranial tumors of infancy and childhood, by Percival Bailey, Douglas N. Buchanan and Paul C. Bucy. Chicago: The University of Chicago Press, 1939. 598 p. illus. 23 cm. (The University of Chicago monographs in medicine) \$5.00.

2490

Contents: Introduction. Ependymomas in the fourth ventricle. Malignant tumors of the cerebellum. Benign gliomas of the cerebellum. Gliomas of the brain stem. Gliomas of the optic chiasm and hypothalamus. Tumors involving the cerebral hemispheres. Craniopharyngiomas. Tumors of the pineal body. Miscellaneous tumors. General pathology. General symptomatology. Differential diagnosis. Technic and results of treatment. Conclusions. Bibliography. Author index. Subject index.

Note: Studies intracranial tumors as they occur in childhood so as to predict before operation those which may be successfully removed. Based on, and presents results of clinical and pathological study of 100 consecutive, unselected, verified cases. Of interest to neurologists, neurosurgeons, and neuropathologists.

BARZILAI, GEMMA

Atlas of ovarian tumors. Preface by Fred W. Stewart. New York: Grune & Stratton, 1943. 261 p. illus. (part col.) 30 cm. \$10.00.

2491

Contents: Preface. Introduction. Classification: Granulosa cell tumor. Theca cell tumor. Arrhenoblastoma. Virilizing lipoid cell tumor. Disgerminoma. Teratoma, adult and embryonal. Fibroma. Sarcoma and fibrosarcoma. Brenner tumor. Endosalpingioma. Seroanaplastic carcinoma. Pseudomucinous adenoma. Pseudomyxoma ovarii et peritonei. Pseudomucinous adenocarcinoma. Mesonephroma. Secondary tumors of the ovary.

Note: This book, written especially for pathologists and clinicians, is primarily a diagnostic atlas. The author's stated purpose is to present a systematic, clear, and complete survey of the complex field of ovarian oncology, in order to help in reducing the number of ovarian neoplasms that defy a correct diagnosis. The illustrations have detailed legends. Short chapters in which each tumor is systematically defined and its histopathologic characteristics are described accompany the illustrations. Also included are data on the terminology, frequency, and age incidence, outstanding gross pathologic feature, clinical signs and symptoms, and treatment.

BEHAN, RICHARD JOSEPH

Cancer, with special reference to cancer of

the breast. St. Louis: The C. V. Mosby Company, 1938. 844 p. illus. 26 cm. \$10.00.

2492

Contents: General consideration of cancer. Etiology, especially of cancer of the breast. Pathology. Biochemistry and biophysics of the cancer cell and cancerous tissue. Symptomatology. Multiple tumors. Noncarcinomatous tumors of the breast. Diagnosis and tests. Biopsy. Metastases. Association of cancer of the breast with cancer in other organs and with various diseases. Prognosis. Treatment, general considerations. Treatment, operative. Sequelae. Constitutional treatment. Organotherapy. Irradiation. X-ray and radium. Postoperative irradiation. Dosage of radioactive agents. Radium and radon. Local treatment. Index.

Note: According to the author's statement, this book was written primarily for the practitioner of medicine, whether surgeon, internist, or radiologist, who is seeking to enlarge his knowledge of the cancer problem. Its inception was due to the fact that the author was unable to find in a single monograph the description of the complex and varied changes which are associated with, and perhaps determine, the different phases of cancer. He began to collect, abstract, study, and compile the principal facts and theories concerned with the etiology, diagnosis, and treatment of cancer, and has here presented this assembled material. Tests and methods of treatment not generally accepted have been included both as a matter of historical interest and because they might possibly serve as a source of inspiration to some future experimenter. Because of the author's belief that new methods of treatment of cancer will eventually be developed from study of the alterations in the biological activity of the individual cancer cell, this aspect of the subject has been given special consideration.

BEHAN, RICHARD JOSEPH

Relation of trauma to new growths; medical-legal aspects. Baltimore: The Williams & Wilkins Company, 1939. 425 p. illus. 23 cm. \$5.00.

2492a

Contents (abridged): Historical and etiological. Classification of trauma. Inflammation. Irritation. Single trauma. Indirect injury. War wounds. Time factor, latent period. Influence of trauma in changing non-malignant into malignant tumor. Aggravation of growth already present. Biopsy. Trauma and metastases. Occupational cancer. Tumors of: mesoblastic tissue; sarcoma; skin, face, breast, brain and nervous system, respiratory system, abdomen, urinary tract, generative apparatus. Index.

Note: The significance of trauma as a causative factor in new growths assumed practical importance with the introduction of social legislation. The courts are becoming increasingly insistent in their demands that more definite answers be given to questions regarding such a causative relationship, and the role of the physician as medical expert in such cases is becoming increasingly important. This book is comprehensive and well documented, and should be of aid to physicians called upon to give expert testimony in cases of this type, and also to judges, lawyers, representatives of insurance companies, and others concerned in these matters.

BLAIR, VILRAY PAPIN, AND OTHERS

Cancer of the face and mouth; diagnosis, treatment, surgical repair, by Vilray P. Blair, Sherwood Moore, and Louis T. Byars. St. Louis: The C. V. Mosby Company, 1941. 599 p. illus. 26 cm. \$10.00.

2493

Contents: General considerations in treatment of cancer of the mouth and face. Underlying principles of surgical destruction or removal. Care of the patient. Cancer of the face. Carcinoma of the ear. Carcinoma of the external nose. Cancer of the orbital structures. Cancer of the lip. Carcinoma of tongue, floor of the mouth, and pharynx. Of the buccal mucosa (cheek), alveolar process, palate, and velum. Of the nasopharynx, nasal cavity, and sinuses. Of the maxillary antrum. Moles, nevi, and malignant melanomas. Epithelial tumors and cysts arising within the dentigerous bone—adamantinoma (ameloblastoma). Tumors of the salivary glands. Cervical node metastases and neck dissection. Anesthesia. Destruction by radiation: general considerations. Follow-up and statistics. Operative technique. Index.

Note: This book offers a concise résumé of observations made during many years of work in this field on approximately 1500 cases of epithelial cancer arising in or about the face and mouth. It is intended especially for the practicing physicians who first see such cases and have the great responsibility of deciding what shall be done at a time when it is most likely that something worth while can be done.

CUSHING, HARVEY WILLIAMS

Intracranial tumours; notes upon a series of two thousand verified cases with surgical-mortality percentages pertaining thereto. Springfield, Ill.: Charles C. Thomas, 1932. 150 p. illus. 26 cm. \$5.00. 2493a

Contents (abridged): Introduction: Historical and explanatory. Primary case subdivisions. The gliomas. The pituitary adenomas. The meningiomas. The acoustic tumours. Congenital tumours. Metastatic and invasive tumours. Granulomatous tumours. Blood-vessel tumours. Primary sarcomas. Papillomas of choroid plexus. Miscellaneous tumours. Operative statistics in general. Index.

Note: This monograph, according to the author's account, grew out of his efforts to prepare a report on surgical-mortality percentages which he made on September 1, 1931, before the International Neurological Congress in Berne, Switzerland. In compiling the statistics for this report he found that explanatory paragraphs were essential. The result is a complete exposition of his experience in the treatment of the principal varieties of intracranial tumors, profusely illustrated with photographs of patients, pathological specimens, roentgenograms, etc. The book is intended especially for neurologists and neurological surgeons.

CUSHING, HARVEY WILLIAMS, AND LOUISE EISENHARDT

Meningiomas, their classification, regional behavior, life history, and surgical end results. Springfield, Ill.: Charles C. Thomas, 1938. 785 p. illus. (part col.) 26 cm. \$15.00. 2493b

Contents (abridged): Historical and terminological. Pathology. Serial enumeration of 313 cases. Intraspinal meningiomas and neurinomas. Combined neurinomas and meningiomas. Multiple meningiomas. Meningiomas without dural attachment. Meningiomas of the cerebellar chamber: tumors of the basilar groove; subtentorial and recess tumors; those simulating acoustic tumors. Meningiomas of the cavum Meckelii. Suprasellar meningiomas. Olfactory groove meningiomas. Meningiomas of the sheath of Schwabe. Meningiomas of the sphenoidal ridge: those of the deep or clinoidal third; the middle-ridge tumors; the pterional tumors "en plaque"; pterional meningiomas "global." Basilar meningiomas: tumors from the floor of the middle fossa. Parasagittal meningiomas: the global, non-hyperostosing type; the hyperostosing tumors. Peritortular meningiomas. Primary meningiomas of the falx cerebri. Meningiomas of the convexity: tumors unattached to a major sinus; precoronal tumors; coronal tumors; postcoronal tumors; para-Rolandic tumors; parietal tumors—inaugural sensory fits; temporo-Sylvian tumors. Recurrent paracentral meningiomas. Diagnosis, operative technique and end results. Bibliography. Indexes.

Note: This volume presents the senior author's painstaking observations on 313 cases of meningiomas, the first one of which came under his examination in 1903 at the Johns Hopkins Hospital in Baltimore and the last one in 1932 at the Peter Bent Brigham Hospital in Boston. The symptoms, diagnosis, pathology, treatment, and ultimate results are given with each case, and the illustrations (686) are well chosen and excellent. There is an extensive bibliography. The book will serve as a practical guide book for those who undertake the diagnosis and treatment of intracranial tumors.

DANDY, WALTER EDWARD

Orbital tumors; results following the transcranial operative attack. New York: Oskar Piest, 1941. 168 p. illus. 24 cm. \$5.00. 2493c

Contents: Preface, by Alan C. Woods. List of illustrations. Introduction. Miscellaneous tumors of the orbit. Cases of Schüller-Christian's disease. Dural tumors of the orbit. Carcinoma of the orbit. Brief summary of seven additional nonoperative cases. Summary. Pathological study of all cases. The operative procedure. Conclusion. Bibliography. Index.

Note: A monograph for the surgeon-specialist. It presents the results of an operative method developed and used by the author in 24 cases since 1922. It treats also the diagnosis and pathology of this type of tumor.

DARGEON, HAROLD WILLIAM, EDITOR

Cancer in childhood and a discussion of certain benign tumors. St. Louis: The C. V. Mosby Company, 1940. 114 p. illus. 26 cm. \$3.00. 2494

Contents: A survey of cancer in childhood, by James Ewing. Malignant tumors in childhood, by Harold W. Dargeon. Malignant tumors of bone in children, by Bradley L. Coley and Richard L. Peterson. Lymphomas, leucemias, and allied disorders in children, by Lloyd F. Craver. Cancers of the genitourinary organs in children, by Archie L. Dean. Gynecologic cancer in children, by John A. Kelly. Cancer of the head and neck in children, by Hayes E. Martin. Tumors of the soft somatic tissues in infancy and childhood, by George T. Pack and Thomas J. Anglem. Blood and lymph vessel tumors in children, by William L. Watson.

Note: The editor states in the preface that it is the purpose of this volume to emphasize childhood cancer as one of the important children's diseases. The papers comprising this symposium represent the collective efforts and experience of members of the various departments of the Memorial Hospital for Cancer and Allied Diseases in New York. With one exception, these contributions originally appeared in the *Journal of pediatrics*. The book is intended for all those whose practice includes the care of the young.

DAVIS, LOYAL EDWARD

Intracranial tumors roentgenologically considered; with one hundred and twenty-one roentgenographic studies. New York: P. B. Hoeber, Inc., 1933. 277 p. illus. (part col.) 27 cm. (Annals of roentgenology, edited by J. T. Case. Vol. 14) \$10.00. 2495

Contents: Introduction. Direct roentgenological evidence of intracranial tumors. The meningiomas. The hypophyseal adenomas. The acoustical neurinomas. The craniopharyngiomas. The gliomas, osteomas, and angiomas. Ventriculography and encephalography. Radiation therapy of intracranial tumors. Bibliography. Index.

Note: The author has illustrated the basic changes demonstrable roentgenologically for which tumors of the brain are responsible. With the 206 illustrations have been included discussions of the more common types of intracranial tumors and the X-ray evidence they produce. Short reports with comments upon the Roentgen and clinical aspects of the cases have been used to emphasize the importance of the correlation of the clinical and Roentgen evidence.

ELLER, JOSEPH JORDAN

Tumors of the skin, benign and malignant. Illustrated with 403 engravings. Philadelphia: Lea & Febiger, 1939. 607 p. illus. 24 cm. \$10.00. 2496

Contents: General considerations. Benign tumors of the skin. Malignant tumors of the skin. Appendix: Practical data on radiation physics and biology with dosage tables and charts.

Note: Covers in detail the entire field, and reflects a most extensive study of the subject and a wide clinical experience covering a period of many years. Its objective is to give in a single volume all of the available information on diagnosis and treatment. It includes clinical descriptions and photographs of the various neoplasms with discussions of the best method of therapy.

EWING, JAMES

Neoplastic diseases; a treatise on tumors. Fourth edition, revised and enlarged. Philadelphia: W. B. Saunders Company, 1940. 1160 p. illus. 25 cm. \$14.00. 2497

Contents: Historical, definition, classification, general pathology. Malignancy of cancer, its effect on the organism. Metastasis. Chemistry of tumors, serology. Theories of nature of cancer. Special etiology, trauma. Parasitic theory. Experimental cancer research. Fibroma. Myxoma. Lipoma. Chondroma. Osteoma. Myoma. Angioma. Sarcoma; clinical types. Sarcomas of bone and bone-marrow. Endothelioma. Lymphoma and lymphosarcoma. Tumors of brain, nerve trunks, spinal cord and membranes. General pathology of epithelial tumors. Epithelial and other tumors of the breast. Cancer of uterus, vulva, vagina. Chorioma. Cysts and epithelial tumors of ovary. Ovarian teratoma. Carcinoma of stomach and intestine. Epithelial hyperplasia and tumors of liver. Tumors of pancreas. Maxillary tumors of dental origin. Epithelial tumors of salivary glands. Tumors of kidney. Tumors of adrenal. Tumors of prostate, testis. Tumors of lung. Epidermoid carcinoma. Melanoma. Tumors of thyroid. The thy-

mus and its tumors. Tumors of the hypophysis. The pineal gland and its tumors. Teratology. Bibliography. Index.

Note: Intended for pathologists, physicians, surgeons and medical students, the object of this work is to present the main features of the origin, structure, and natural history of tumors. Each tumor is considered and discussed as a clinical entity with these clinical aims in view: 1. To show how to recognize cancer in its incipency. 2. To distinguish between benign and malignant growths. 3. To determine the prognosis and course of treatment. For the fourth edition, the following and many other new or revised subjects have been included: Cysts and epithelial tumors of the ovary, tumors of the brain, treatment of mammary cancer of radiation, glycolysis in tumors, embryogenic organizers and inducers, cancer of the breast, vitamins, alkalosis, neurofibromatosis, hemangioma of muscle, spindle-cell sarcoma, synovial endothelioma, tumors of peripheral sympathetic nervous system, plasma-cell mastitis, and carcinoid tumors of gastrointestinal tract. Of the 581 illustrations, many are new for this edition.

FIESER, LOUIS FREDERICK, AND OTHERS

Cause and growth of cancer, by Louis F. Fieser, Stanley P. Reimann, Peyton Rous, Warren H. Lewis, Margaret R. Lewis and Balduin Lucké. Philadelphia: University of Pennsylvania Press, 1941. 64 p. 23 cm. \$0.75. 2498

Contents: Production of cancer by polynuclear hydrocarbons. Normal intracellular constituents in relation to growth. Virus relationships to tumors. Some characteristics of malignant cells. Growth of cancer.

Note: Lectures delivered at the University of Pennsylvania Bicentennial Conference.

GEIST, SAMUEL HERBERT

Ovarian tumors. With 312 illustrations. New York: P. B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 1942. 527 p. illus. 24 cm. \$10.50. 2499

Contents: Embryology of the ovary. Anatomy. Physiology. Ovarian tumors: general considerations. Benign epithelial neoplasms of surface origin: proliferating cysts. Carcinomas of the ovary. Primary parenchymatous epithelial neoplasms of sub-surface origin. Ovarian tumors: benign and malignant. Stromatogenous ovarian neoplasms. Non-neoplastic tumors of the ovary. Ovarian tumors in children. Tumors of the parovarium (epoophoron). Ovarian neoplasms in pregnancy. Diagnosis of ovarian tumors. Treatment. Index.

Note: The author has incorporated in a single volume recently accumulated information on this subject, in order to make it available to all who are interested in this phase of medicine, the gynecologist, surgeon, pathologist, and general practitioner. The arrangement of the book is such that it can be used by both teacher and student. The subject matter is based on the histories, clinical findings, and pathologic details of the author's own very extensive material. Not only are the anatomy and physiology of ovarian neoplasms discussed, but an attempt has been made to explain the basis of the symptoms. Association of ovarian neoplasms with other conditions such as pregnancy, and the procedure for care in such cases have been elaborated. New points of view dealing with the origin, classification, and symptomatology of ovarian tumors have been expressed. Although the bibliography is not all-inclusive, an attempt has been made to include the most important references.

JACKSON, CHEVALIER, AND CHEVALIER L. JACKSON

Cancer of the larynx. Philadelphia: W. B. Saunders Company, 1939. 309 p. illus. (part col.) 24 cm. \$8.00. 2500

Contents: Definitions. Early diagnosis. Treatment. Endoscopic removal of cancer of the epiglottis. Operative treatment of cancer of the larynx. Laryngofissure. Laryngectomy. Technic of wide-field laryngectomy. Condition of patient. Prognosis. Articulate speech after laryngectomy. Lateral pharyngectomy. Treatment by irradiation. Palliative treatment. Symptoms of malignant disease of larynx. Pathology of squamous-celled carcinoma of larynx. Malignant growth other than squamous-celled carcinoma. Borderline tumors. Precancerous conditions of the larynx. Biopsy. Human aspects and life expectancy. Clinical data and their bear-

ing on certain problems. Incidence. Etiology. Prophylaxis. History of cancer of larynx. Bibliography. Index.

Note: This book is for the surgeon, otolaryngologist, and the general physician interested in learning how to recognize and treat malignancy of the larynx. For facility in use according to the reader's desires and needs, the book is really made up of three books in one; namely: I, Procedures; II, General considerations; III, Historical notes. Illustrations have been made of special use. There are 239, including 50 color illustrations grouped on five color plates. These color pictures were drawn by Dr. Chevalier Jackson himself in order to show in as life-like manner as possible those things significant in diagnosis. Other pictures drawn in line show step-by-step operative technique.

MEIGS, JOE VINCENT

Tumors of the female pelvic organs, with a foreword by Robert B. Greenough. 261 illustrations. New York: The Macmillan Company, 1934. 533 p. illus. (part col.) 24 cm. (Macmillan surgical monographs) \$7.00. 2501

Contents: Carcinoma of the cervix: general—treatment—Massachusetts General Hospital cases. Carcinoma of the cervical stump. Carcinoma of the body of the uterus—adenocarcinoma of the cervix and body of the uterus. Sarcoma of the uterus. Miscellaneous tumors of the uterine body and cervix. Carcinoma of the vulva—leukoplakic vulvitis and kraurosis vulvae. Other tumors of the vulva—tumors of the urethra. Tumors of the vagina. Tumors of the ovary: general—Massachusetts General Hospital cases. Endometrioma. Tumors of the Fallopian tube. Parovarian cysts. Tumors of the broad, round, and utero-sacral ligaments. Chorioma. Polyps of the endometrium and cervix. Leiomyoma (fibroids) of the uterus. Metastases. Multiple tumors. Bibliography. Index.

Note: A survey of our present knowledge of the pathology, diagnosis, and treatment of all types of tumors, benign and malignant, common and rare, of the female pelvic organs. This is written not only for the surgeon and gynecologist, but will be of value to the pathologist and roentgenologist. The text is illustrated with 252 photographs and line drawings and 49 tables.

PACK, GEORGE THOMAS, EDITOR

Tumors of the hands and feet. St. Louis: The C. V. Mosby Company, 1939. 138 p. illus. 26 cm. \$3.00. 2502

Contents: Introduction, by George T. Pack. Carcinoma of the hands and feet, by Michael L. Mason. Subungual melanoma, by George T. Pack and Frank E. Adair. Angiomatous tumors of the hands and feet, by Ashley W. Oughterson and Robert Tennant. Tumors of the synovia, tendons, and joint capsules of the hands and feet, by Alexander Brunschwig. Tumors primary in the bones of the hands and feet, by Bradley L. Coley and Normal L. Higinbotham.

Note: Because of the encyclopedic scope of the subject of neoplastic disease when taken as a whole, it has seemed advisable to present monographic treatises dealing with cancers of a single region. This has been done successfully in the case of many regions of the body. In this volume cancers of the hands and feet are considered in respect to etiology, pathology, diagnosis, and treatment. The symposium was undertaken at the request of Dr. Alton Ochsner, editor of *Surgery*, and was first published in the January, 1939, issue of that journal. The book is intended for both students and practitioners of medicine and surgery.

PAPANICOLAOU, GEORGE NICHOLAS, AND HERBERT F. TRAUT

Diagnosis of uterine cancer by the vaginal smear. New York: The Commonwealth Fund, 1943. 46 p. illus. (part col.) 28 cm. \$5.00. 2503

Contents: Diagnosis of uterine cancer by means of vaginal smears. General classification of the epithelial cells of the vagina and cervix found in the vaginal fluid. The cellular contents of the vaginal fluid at different periods of the normal sex cycle. Effect of modified physiological and of pathological conditions on the cellular contents of the vaginal fluid. Clinical material and data: method of study. Characteristics of vaginal smears in cancer of the cervix. Characteristics of vaginal smears in cancer of the fundus of the uterus. Discussion of the use of the vaginal smear as a diagnostic procedure. Bibliography. Plates.

Note: Study of the vaginal smear has proved valuable in many ways, and as an aid in the diagnosis of cancer of the cervix and body of the uterus it has been particularly useful. Although the procedure involved is simple, exact techniques and special knowledge of the minutiae of cellular morphology are required. These matters are set forth in detail by Dr. Papanicolaou and Dr. Traut, who present descriptions and many illustrations in color of cells which were derived from various kinds of cancer of the uterus and, for comparison, descriptions and illustrations of the cells normally present in the vagina at various stages of the menstrual cycle and during and after menopause.

PODOLSKY, EDWARD

The war on cancer. New York: Reinhold Publishing Corporation, 1943. 179 p. illus. 19 cm. \$1.75. 2504

Contents: Introduction. The biography of cancer. How cancer is detected. Is there a drug for cancer? Radium bombs and cancer cells. The healing rays of Roentgen's tube. The magnetic ray gun. The healing knife against the killing growth. Refrigeration and hibernation. Food and cancer. How to recognize the danger signs in cancer. Cancer research goes on. Name index. Subject index.

Note: Following a brief history of the disease, the problem of cancer is discussed in the light of recent developments. Factors of possible prevention and cure are given. The book is in non-technical language, intended for the layman.

SIMONS, EDWIN J.

Primary carcinoma of the lung. Chicago: Year Book Publishers, Inc., 1937. 263 p. illus. (part col.) 23 cm. \$5.00. 2505

Contents: Incidence. Etiology (hereditary, trauma, causes of cancer among Schneeberg miners, pulmonary tuberculosis, influenza, pneumoconiosis and other chronic lung diseases, Roentgen rays, dust inhalation, inhalation of tar particles, motor exhaust fumes, war gasses, industrial and occupational hazards, tobacco smoke, general hygiene). Pathology (macroscopic features, microscopic considerations, histogenic concepts, anatomic location, metastasis). Clinical considerations (sex incidence, age incidence, general clinical features, symptomatology, physical findings, laboratory and accessory clinical data, roentgenologic considerations, other diagnostic methods, diagnosis, differential diagnosis, prognosis and course of the disease). Treatment (symptomatic treatment, radiotherapy, bronchoscopic treatment, surgical treatment). Summary and conclusions. Subject index. Bibliography.

Note: Analyzing more than 5,000 microscopically proved cases, this monograph describes every known symptom complex and all the most indicative physical signs of primary carcinoma of the lung. The author offers definite conclusions to moot questions and supports his reasoning with statistics. The fourteen known etiologic factors are reduced to a single formula. Clinical considerations receive extensive treatment, and those phases of the disease which most concern the internist and the general surgeon are emphasized. Diagnostic techniques are given in full. The presentation of therapy includes: simpler methods of palliative treatment; X-ray, radium, bronchoscopic, and surgical therapy; indications and contraindications for operative intervention; the question of multiple or single stage operations; pneumonectomy with or without thoracoplasty. A book for practicing physicians, pathologists, roentgenologists, and others interested in pulmonary cancer.

STANFORD UNIVERSITY. SCHOOL OF MEDICINE

Cancer handbook of the Tumor Clinic, Stanford University, School of Medicine, edited by Eric Liljencrantz. Stanford University, Calif.: Stanford University Press, 1939. 114 p. illus. (part col.) 26 cm. \$3.00. 2506

Contents: The cancer problem. Principles of radiation therapy. Cancer of skin, eye, and lip. Cancer of oropharynx and neck. Cancer of the gastrointestinal tract. Cancer of the lung. Cancer of the breast. Gynecological cancer. Genito-urinary cancer. Leukemias and lymphoblastomata. Tumors of the central nervous system. Bone tumors. Index.

Note: A brief handbook covering the largest portion of what is seen in an active cancer clinic but avoiding the bulk of encyclopedic treatment. Designed especially for a brief graduate course, it is elementary enough for any medical practitioner, but complete enough to prepare for adequate handling of cancer pa-

tients through the stages of suspicion, diagnosis, consultation, and treatment. Founded on the present practice at the Stanford University Tumor Clinic and the integrated experience of its members.

Pediatrics

BRENNER, EDWARD CHRISTOPHER

Pediatric surgery. Illustrated with 293 engravings. Philadelphia: Lea & Febiger, 1938. 843 p. illus. 24 cm. \$10.00. 2507

Contents: General considerations. Cysts and tumors. Diseases of the osseous system. Surgery of the head. The thorax. The abdomen. Urologic conditions. Neurologic surgery.

Note: The volume is largely based on the author's lectures at the New York Post-Graduate Medical School of Columbia University where the importance of pediatric surgery has been emphasized for many years through both didactic and clinical teaching. The author has restricted himself to material of practical value. He discusses the important common pathologies but omits orthopedic conditions, since they are well considered in many textbooks. In the preparation of this volume the author has had the cooperation of various specialists, each of whom covers a topic in the treatment of which he is a recognized authority.

CAMPBELL, MEREDITH FAIRFAX

Pediatric urology. With a section on Bright's disease in infancy and childhood, by John D. Lyttle. With over 1,350 illustrations on 610 figures and two colored plates. New York: The Macmillan Company, 1937. 2 v. illus. (part col.) 26 cm. \$15.00. 2508

Contents: Volume I. Methods of examination and diagnosis. Obstructive uropathy. Anatomy, physiology, embryology, and anomalies of the urogenital tract. Urinary infections. Index. Volume II. Bright's disease. Genital diseases. Urogenital injuries. Calculus disease. Tumors. Neuromuscular disease. Enuresis. Urosurgery. Author's bibliography. Index.

Note: This work is based on ten years of study and research, and is intended to indicate to medical practitioners in general, and to pediatricians and urologists in particular, the clinical aspects of urologic disease in infants and children. A comprehensive exposition of the technical phases of urologic diagnosis and treatment is given to enable the physician to know when a child merits urologic examination and when he is receiving adequate urologic attention. There are 1350 illustrations in half-tone and line.

CROTHERS, BRONSON

A pediatrician in search of mental hygiene. New York: The Commonwealth Fund, 1937. 271 p. 21 cm. \$2.00. 2509

Contents: The doctor in the community. The specialty of pediatrics. Mental hygiene as a pediatric investment. The responsibility of the psychiatrist for mental hygiene. The pediatrician in cooperation with others interested in children. The general medical training. The children's hospital. Potential contributions of the child guidance clinic. The case history method of teaching. The psychologist in a children's hospital. The social worker in a children's hospital. The pediatrician's definition of mental hygiene. A teaching experiment in action. A tentative survey of the situation.

Note: Pediatricians who have felt the need for a better understanding of mental hygiene will be interested in the author's "search" and what he finds. He speaks from his experience as a pediatrician and teacher of pediatrics, fully aware of the formidable scope of present training and practice, but also alive to some of the limitations and needs. His discussion is penetrating and brilliant, with frank criticism of both pediatricians and mental hygienists.

DAVISON, WILBURT CORNELL

The compleat pediatrician; practical, diagnostic, therapeutic and preventive pediatrics. Fourth edition. For the use of medical students,

internes, general practitioners, and pediatricians. Durham, N.C.: Printed by Seeman Printery for Duke University Press, 1943. 317 p. 24 cm. \$4.00. 2510

Contents (abridged): Preface. Instructions for the use of the book. Respiratory group. Gastro-intestinal group. Skin conditions and contagious diseases. Neuropsychiatric group. Circulatory, metabolic, and glandular group. Genito-urinary group. Bone, muscle, cartilage, spine, and joint (orthopaedic) group. Laboratory and other procedures frequently used in pediatrics. Nutritional requirements, feeding and diets. General, fluid, oxygen, and physical therapy and pediatric nursing. Growth, development and general care of children, prematurity, and the reduction of mortality. History taking and physical examination. Drugs and prescriptions frequently used in pediatrics. Index.

Note: This book, with its emphasis on symptoms and signs as clues, rather than on description, was compiled to be of practical value in diagnosis as well as in teaching and studying.

DE SANCTIS, ADOLPH GEORGE, EDITOR

Advances in pediatrics. Volume I. New York: Interscience Publishers, Inc., 1942. illus. 23 cm. \$4.50. 2511

Contents (abridged): Toxoplasmosis, by Albert B. Sabin. Review of virus diseases, by Horace L. Hodes. Chemotherapy in diseases of infancy and childhood, by Benjamin W. Carey. Electroencephalography, by Norman Q. Brill. Role of vitamin K in hemorrhage in newborn period, by H. G. Poncher. Persistent ductus arteriosus and its surgical treatment, by Robert E. Gross. Premature infant, by Abraham Tow. Tuberculosis, by Waldo E. Nerson. Endocrinology, by Murray B. Gordon. Short abstracts of some other advances in pediatrics, by Adolph G. De Sanctis and George E. Pittinos. Author index. Subject index.

Note: A collection of short monographs by specialists designed to supply summaries of recent information between the editions of larger textbooks, as well as to supplement the necessarily limited amount of periodical literature which the average practitioner has a chance to read.

GESELL, ARNOLD LUCIUS, AND CATHERINE (STRUNK) AMATRUDA

Developmental diagnosis; normal and abnormal child development, clinical methods and practical applications. New York: P. B. Hoeber, Inc., 1941. 447 p. illus. 24 cm. \$6.50. 2513

Contents: Part I, Principles and methods: Development of behavior. Developmental examination of behavior. Norms of development. Conduct of the examination. Part II, Defects and deviations of development: Problems of differential diagnosis. Amentia and retardation. Amentia of high grade. Of low grade. Endocrine disorders. Convulsive disorders. Neurological diagnosis of infant behavior. Cerebral injury. Special sensory handicaps. Prematurity. Precocity. Environmental retardation. Clinical aspects of child adoption. Part III, Protection of early child development: Diagnosis and guidance. Developmental supervision. Appendixes: Examination technique. Growth trend chart. Examination equipment. Cinematic case studies. Index.

Note: This book, the outgrowth of years of clinical experience in the developmental examination of infants and preschool children, was written especially for pediatricians and family physicians. Its purpose is to provide them with practical clinical guidance in diagnosing normal and abnormal behavior patterns in infants and children, in a form suitable for use in office, hospital, or institution. The volume is devoted primarily to methods of diagnosis and its applications, and the methods are outlined in such a manner that the clinician can take them over by partial stages and can suit them to his needs and to increasing clinical experience.

GESELL, ARNOLD LUCIUS, AND FRANCES L. ILC

Feeding behavior of infants; a pediatric approach to the mental hygiene of early life. Two hundred illustrations. Philadelphia: J. B. Lippincott Company, 1937. 201 p. illus. 26 cm. \$4.50. 2514

Contents: Part I, Behavior aspects of nutrition: Significance of feeding behavior. Underlying concepts and data. Foundational patterns of behavior. Motor mechanisms of feeding. Implements, techniques, and behavior. Part II, Growth of feeding behavior: Breast and bottle behavior. Cup. Spoon. A photographic delineation of the growth of feeding behavior patterns. Part III, Regulation: Schedules and individuals. Behavior hygiene. Adult-infant relationship. Protection of growth. Appendix: Illustrative biographies of feeding behavior. Bibliography. Index.

Note: In the introduction to this book the authors state that it is not their purpose to "psychologize" the problem nor to remove it in any sense from the domain of pediatrics or of clinical chemistry. It is their hope that an objective study of the behavior symptomatology of the human infant will lead to a more discriminating appreciation of his physical health and his growth needs. Much research is needed to obtain an insight into the meaning and determinants of feeding behavior. This book deals mainly with the normal and near-normal deviations. Its purpose is to focus attention on the medical importance of infant behavior and on new possibilities of diagnosis and of supervision, and it is thus intended principally for the pediatrician and the child hygiene nurse. The treatment is non-technical, however, and it should prove suggestive to students of child development and to mothers.

GRIFFITH, JOHN PRICE CROZER, AND A. GRAEME MITCHELL

Textbook of pediatrics. Third edition, revised and reset. Philadelphia: W. B. Saunders Company, 1941. 991 p. illus. (part col.) 24 cm. \$10.00. 2515

Contents (abridged): Physical growth and development. Physical hygiene of infants and children. Mental and emotional development and mental hygiene. Breast feeding. Artificial feeding in first year of life. Feeding of older infants and children. Characteristics of disease in infancy and childhood. Symptomatology and diagnosis. Mortality, morbidity, and prevention of disease. Therapeutics of infancy and childhood. Pediatric institutions and organizations. Diseases of newborn infant. Infectious or communicable diseases. General nutritional, metabolic, and miscellaneous diseases. Diseases of digestive system, of respiratory tract, of circulatory system, of genito-urinary system, of nervous system, of muscles, bones and joints, of blood, spleen and lymph nodes, of endocrine glands and allied subjects, of skin, eye, and ear. Index.

Note: Designed to serve as a textbook for the medical student and as a clinical reference for the practitioner and pediatrician, this book deals with the causes, pathology, symptoms, diagnosis and treatment of diseases of infancy and childhood. Marked emphasis will be found on the characteristics of good physical and mental health, the prevention of disease, and the modern knowledge of growth and development. A feature of interest to the physician are the chapters on feeding. The third edition reflects the advice and participation of 64 authorities in the clinical and research fields of pediatrics. It is the result of a rewriting of most of the contents and includes a new chapter on mental and emotional development and mental hygiene. A number of new illustrations, charts, tables, and figures have been added. Earlier editions were entitled: *Diseases of infants and children*.

HESS, JULIUS HAYS, AND OTHERS

The physical and mental growth of prematurely born children, by Julius H. Hess, George J. Mohr, and Phyllis F. Bartelme. Chicago: The University of Chicago Press, 1934. 449 p. illus. 23 cm. (Behavior Research Fund. Monographs) \$5.00. 2516

Contents: Part I, A clinical study, by Julius H. Hess: History of the organization and development of the Premature Infant Station. Description of the clinical material. Etiologic factors influencing termination of pregnancy. Morbidity and mortality of infants in Premature Infant Station during first admission. Morbidity and mortality after graduation from the Premature Infant Station. Clinic for graduates. Part II, Developmental studies of prematurely born children, by George J. Mohr and Phyllis F. Bartelme: Introduction. Analysis of the sample. Physical growth of prematurely born children. Mental development of prematurely born children. Clinical notes. Habit formation and social adaptation. Part III, Special studies carried out in the Premature Infant Station. Infants surviving a low weight of less than 1,000 grams, by Ralph H. Kunstadter and Phyllis F. Bartelme. Premature infants surviving intracranial hemorrhage at birth, by Ralph H. Kunstadter. A clinical and pathological study of pre-

mature infants, by Norman W. Clein. Studies of blood-pressure, electrocardiograms and pulse rate, and roentgenograms of the heart, by Sol Londe. Syphilis and prematurity, with special reference to the use of stovarsol in prophylactic and curative treatment of congenital syphilis, by Alwin C. Rambar. Prophylaxis of the anemia of premature infants—use of various agents in an attempt to prevent development of the so-called physiologic anemia of premature infants: preliminary study, by Arthur F. Abt and Beth Reynolds Nagel. Meninges in intracranial hemorrhage of the new-born, by A. Levinson and O. Saphir. The cerebrospinal fluid of premature infants, by Jerome Glaser. Oxygen therapy for premature and immature young infants, by Julius H. Hess. Inguinal hernias in premature infants, by Alwin C. Rambar and Samuel L. Goldberg.

Note: A comprehensive and scientifically documented study of the causes, results, care, subsequent development, habit formation, and social adaptation of prematurely born children, based on nearly 2,000 cases accumulated during twelve years at Michael Reese Hospital, Chicago. Part III contains papers on special aspects of the subject.

HESS, JULIUS HAYS, AND EVELYN C. LUNDEEN

The premature infant, its medical and nursing care. 74 illustrations. Philadelphia: J. B. Lippincott Company, 1941. 309 p. illus. 21 cm. \$3.50.

2517

Contents (abridged): What constitutes prematurity. Physiologic development. Growth. Minimum requirements for nurseries . . . and premature infant stations. Incubators. The nurse's technic. Routine procedures. Immediate care after birth. Transportation. Home care. Feeding. Breast milk. Artificial feeding. Vitamins. General therapeutic measures. Oxygen therapy. Asphyxia and cyanosis. Hemorrhage. Skin and eyes. Diseases of respiratory tract. Gastro-intestinal tract. Liver and bile passages. Hernia. Anemia. Rickets, tetany and scurvy. Syphilis. City- and state-wide plans for care of premature infant. Later physical and mental development. References. Supplementary materials. Index.

Note: This volume incorporates material from *Premature and congenitally diseased infants*, a book written in 1922 by Julius H. Hess which, it is stated, constitutes the first comprehensive survey of the problems of prematurity and methods of care. To this material the authors have added information gained from practical experience in their work in the Hortense Schoen Joseph Premature Station of Michael Reese Hospital, Chicago, together with recent data which medical science has to offer on this subject. These include descriptions of new techniques and methods, and the advances which have aided in bringing down the mortality and morbidity rates among premature infants. The book is intended primarily for nurses and physicians who have the care of premature infants, but it is a further purpose of the authors to stimulate interest in the development of public programs to meet this problem.

HOLT, LUTHER EMMETT, AND JOHN HOWLAND

Holt's Diseases of infancy and childhood; a textbook for the use of students and practitioners. Revised by L. Emmett Holt, Jr., and Rustin McIntosh. Eleventh edition. New York: D. Appleton-Century Company, Incorporated, 1940. 1421 p. illus. 25 cm. \$10.00.

2518

Contents: General considerations. Diseases of the newborn. Premature infants. Nutrition. Deficiency diseases. Diseases of the eyes. Diseases of the mouth, nose, throat and ears. Diseases of the alimentary tract. Diseases of the lungs. Diseases of the circulatory system and of the blood. Diseases of the spleen, lymph nodes and thymus. Diseases of the ductless glands. Diseases of the bones and joints. Diseases of the urogenital system. Diseases of the skin. Diseases of allergy. Psychopathological problems. Diseases of the nervous system. Diseases of the muscles. The specific infectious diseases. Miscellaneous diseases. Index.

Note: Originally written in 1897 by the late Dr. L. Emmett Holt, the present edition was completely rewritten and enlarged by the present authors, aided by 32 associates, specialists in their respective fields. Instead of writing separate contributions these associates collaborated with the authors, with a view to preserving uniformity of style and singleness of viewpoint. The original aim and purpose of the book has been kept constantly in mind—to furnish a guide to practical therapy based on a thorough understanding of the nature of disease. It is intended to cover the entire field of pediatrics as a textbook for students and practitioners of medicine. In this eleventh edition, large parts have been entirely rewritten. There is a new section on diseases of the eye.

JENSS, RACHEL M., AND SUSAN P. SOUTHER

Method of assessing the physical fitness of children. A study of certain methods based on anthropometric, clinical, and socioeconomic observations made of 713 7-year-old white boys and girls in New Haven, Conn., over a period of 19 or 20 months during 1934-36. Washington, D.C.: Government Printing Office, 1940. 121 p. illus. 22 cm. (United States. Children's Bureau. Bureau publication no. 263) Paper, \$0.15. 2519

Contents (abridged): Methods of assessing physical fitness. Indices of body build. Material and methods: A description of the boys and girls included in this study; observations made on these children. Results: Indices of body build; clinical judgment. Summary. Appendices.

Note: An evaluation of several methods of assessment based on field work and physical examinations. No new methods are presented.

KUGELMASS, ISAAC NEWTON

The newer nutrition in pediatric practice. 183 illustrations. Philadelphia: J. B. Lippincott Company, 1940. 1155 p. illus. 23 cm. \$10.00.

2520

Contents (abridged): Nutritional physiology: Maintenance and metabolism. Digestion and absorption. Nutrition in health: Nutrition of the newborn. Infant nutrition. Infant formulas. Child nutrition. Nutrition in disease: Symptom diagnosis of nutritional diseases. Digestive diseases. Deficiency diseases. Metabolic diseases. Allergic diseases. Regional diseases. Index.

Note: This book applies the newer knowledge of nutrition to the everyday practice of pediatrics. The section on nutritional physiology reveals the physical and chemical basis of the growing organism in terms of the materials of life derived from food, air, and water. Material on nutrition in health includes established principles and procedures for the advancement of positive health and the prevention of chronic disease. The concluding section on nutrition in disease considers most of the disorders of infancy and childhood in terms of nutrient causation or involvement as a basis for nutritional therapy. There are 422 tables of statistical data including analyses of diets indicated in various diseases. Clinical concept, etiologic factors, symptoms, metabolic mechanisms, differential diagnosis, and therapeutic procedures are given for each disease, together with special diets graded according to the child's age, from two to fifteen years. References at the end of each chapter.

KUGELMASS, ISAAC NEWTON

Superior children through modern nutrition; how to perfect the growth and development of your children from birth to maturity. New York: E. P. Dutton & Co., Inc., 1942. 332 p. 22 cm. \$3.50.

2521

Contents: Modern materials of life. Energy foods. Vitamin foods. Minerals as protective foods. Nutrition for superior growth. Individualized newborn feeding. Individualized breast-feeding. Individualized artificial feeding. Mixed feeding. Food allergy. Infant feeding behavior. Individualized child feeding. Dietary needs of every age. Feeding according to body build. Preventing constipation. Safeguards for economical living. Helping lean and fat children. Child feeding behavior. Vitamin values of common foods. Index.

Note: In this book for parents and others concerned with the growth and development of children, the author emphasizes that while all children require the same combination of nutrient, it must be individualized to yield good health, accelerated growth, optimal development, and efficient function. The treatment is intentionally simplified and non-technical for the use of parents who wish information on the preparation of proper diets for each year and stage of a child's development. Prenatal care of the mother and feeding of the newborn infant are also included, together with tables of vitamin and mineral content of foods, and question-and-answer summaries at the end of each chapter.

LITCHFIELD, HARRY ROBERT, AND LEON H. DEMBO, EDITORS

Therapeutics of infancy and childhood. Philadelphia: F. A. Davis Company, 1942-43. 5 v. illus. (part col.) 25 cm. \$36.00. 2522

Contents (abridged): Volume I. Psychological care of the sick child. The art of treatment. Drugs and patent medicines. Medical aid until the doctor comes. Sulfonamide drugs. Hormone therapy. Toxicology and emergencies. Paracentesis. Parenteral fluid administration. Physical therapy. Fever therapy. Blood and plasma. Vaccines and sera. Prenatal asphyxia. Congenital diseases of the newborn. Dietaries of the infant and older child. Acute infectious diseases. Influenza and tuberculosis. Volume II. Rheumatic fever. Syphilis. Diseases of the eye and ear, nose and throat, trachea, bronchi, and lungs. Diseases of the mouth, teeth, and salivary glands. Gastrointestinal diseases. Parasitic diseases. Diseases of the heart, liver, pancreas. Urogenital diseases. Diseases of the bones. Volume III. Allergy. Vitamin deficiencies. Diseases and disorders of metabolism. Meningitis. Organic diseases of the nervous system. Brain tumors. Behavior disorders. Diseases and disorders of the endocrine system. Volume IV. Diseases and disorders due to physical agents. Tropical diseases. Radiation therapy in pediatrics. Diseases of the skin. The treatment of harelip and cleft palate. Surgery of the chest and abdomen. Disabilities and deformities. Osteomyelitis. Tuberculosis of bones and joints. Scoliosis. Hypertension. Volume V. Desk index.

Note: A reference work intended for the use of pediatricians, general practitioners, and those intimately concerned with the health and welfare of the infant and child. The aim of the editors is to present a complete work on the principles and practices of pediatric therapeutics in which everything pertaining to diseases of infant and child is included. Each of these diseases is treated thoroughly, and etiology, pathology, symptoms, and diagnosis are discussed with a view to sound therapeutic approach. Bibliographies follow many of the chapters and the work is fully illustrated in black-and-white and in color. The separate index has approximately 20,000 entries.

LOWENBERG, MIRIAM E.

Food for young children in group care. Washington, D.C.: Government Printing Office, 1942. 34 p. 22 cm. (United States. Children's Bureau. Bureau publication no. 285) Paper, \$0.10. 2523

Contents: Good eating habits. Meeting the food needs of children. Buying food. Storing food. Preparing food. Suggested menus. Serving meals. Community resources—workers and food. References.

Note: Planned to meet the mealtime needs of children two to five years of age who come together in groups for part-day or all-day care.

LYON, ROBERT AARON, AND WINIFRED KALTENBACH

Mitchell's pediatrics and pediatric nursing. Second edition. Philadelphia: W. B. Saunders Company, 1944. 504 p. illus. (part col.) 20 cm. \$3.00. 2524

Contents (abridged): Historical background. Unit I. Normal growth and development: Physical growth and development. Mental, nervous and emotional development. Mental hygiene. Unit II. Nutrition: Principles. Breast feeding. Artificial feeding in the first year of life. Feeding of older infants and children. Unit III. Children in the home: Physical hygiene. Habit formation. Discipline. Play. Sick child in the home. Unit IV. Children in the hospital: The hospital routine. General nursing procedures. Therapeutic procedures. Diagnostic procedures. Convalescent child. Unit V. Abnormalities and diseases: Newborn premature infant. Abnormalities of nutrition. Endocrine system. Gastroenteric tract. Respiratory tract. Circulatory system. Blood. Spleen and lymphatic system. Genito-urinary tract. Bones and joints. Muscular system. Skin. Organic and functional diseases of the nervous system. Psychic disturbances in children. Diseases of the eye. Allergic conditions. Communicable diseases. Unit VI. Child care in the community: Prevention of disease. Institutions and organizations other than the hospital. Appendix. Index.

Note: This text provides a condensed review of children's diseases and their nursing care in the home and in the hospital. The authors indicate that the nurse has a greater responsibility in the care of the child than just the treatment of his specific

illness, for she temporarily replaces the parent in providing food, hygienic care, and comfort throughout convalescence in the hospital. In the discussion of nursing procedures stress is placed on the treatment of abnormal conditions common to many diseases. Projects for further study and references appear at the ends of units. There are 97 illustrations and 32 tables. For the second edition, with the exception of a few pages, the text was rewritten. New chapters were added on history, home care, and public health care. The point of view of considering pediatric nursing care as a modification of adult care was introduced.

MITCHELL, ALBERT GRAEME

Pediatric bibliography. Washington, D.C.: Society for Research in Child Development, National Research Council, 1941. 119 p. 23 cm. (Society for Research in Child Development. Monographs. Vol. VI, no. 1. Serial no. 27) Paper, \$1.00. 2524a

Note: This bibliography on children's diseases and child health is arranged by subject and includes references to periodical literature and books in English and foreign languages. It aims to be practical, but does not claim to be complete. Although designed to be used with *A textbook of pediatrics*, by J. P. Crozer Griffith and A. Graeme Mitchell, (see Index) and has its subjects arranged in the same order, its headings and subheadings are sufficiently detailed to permit independent use.

RAND, WINIFRED, AND OTHERS

Growth and development of the young child, by Winifred Rand, Mary E. Sweeny, and E. Lee Vincent. Third edition, revised and entirely reset. Philadelphia: W. B. Saunders Company, 1940. 462 p. illus. 20 cm. \$2.75. 2525

Contents (abridged): What the newborn baby is like. Growth during infancy. Care and feeding of the baby. Growth from infancy to early childhood. Growth during the first period of early childhood. Growth during the later period of early childhood. Biological development of the child. Prenatal care of the mother and preparation of the family for the baby. The home and family as a background for growth. Family relationships. Appendix. Bibliography. Index.

Note: Designed to give college students of child development an all-around introduction to the subject. Each period of the child's growth is considered in detail. Considerable discussion is devoted to the philosophy as well as to the practical aspects of family life. Great emphasis is placed on the mental and physical training of the child, the relationship between prenatal care and postnatal growth and development, the influence of heredity on child development, the effect of home conditions on the child, the relations between parent and child, and transition from infancy to childhood, and the first steps of education. For the third edition the authors made changes and additions in every chapter. Of special importance are the changes and additions on these subjects: growth during infancy; care and feeding; growth from infancy to early childhood; and growth during first period of early childhood.

ROBERTS, LYDIA JANE

Nutrition work with children. Revised and enlarged edition. Chicago: The University of Chicago Press, 1935. 639 p. illus. 21 cm. (The University of Chicago home economics series, Lydia J. Roberts, editor) \$4.00. 2526

Contents (abridged): Introduction. Definition of terms. Methods of judging nutrition. Studies in growth. Seasonal variations in growth. Causes of malnutrition. Physical effects of undernutrition. Mental effects of undernutrition. Prevention and treatment of malnutrition. The nutrition-health program in the school. Nutrition teaching at various grade levels. The responsibility of different workers for the nutrition-health program. The school. Health materials. Nutrition work with preschool children. Agencies working for the nutritional betterment of children. The parent education movement.

Note: A standard text on diet for children, enlarged and rewritten to include notable developments since the first edition. New material is provided throughout the book, especially in the chapters on judging nutrition, nutrition-health programs in the school, agencies working for the nutritional betterment of children, and the parent-education movement.

SAXL, NEWTON THOMAS

Pediatric dietetics. Foreword by Adolph G. DeSanctis, illustrated with 57 engravings and 2 colored plates. Philadelphia: Lea & Febiger, 1937. 565 p. illus. (part col.) 24 cm. \$7.00. 2527

Contents: Part I, General considerations: Digestion in infancy and childhood. Foods. Part II, Infant feeding: Infant feeding (nursing). Infant feeding (artificial). Part III, Dietetic management of pediatric diseases: Diets and menus for nearly fifty conditions and their variations. Appendix: Height and weight tables. Food tables. Recipes. Constituents. Bibliographies.

Note: A collection of data on diet therapy for the sick child. No attempt is made to prescribe exact dietary requirements to meet all conditions at all times, but allowance is made for such variable factors as age, personal idiosyncrasies, environment, and disease entities.

SCHAUFFLER, GOODRICH CAPEN

Pediatric gynecology. Chicago, Ill.: Year Book Publishers, Inc., 1942. 384 p. illus. 23 cm. \$5.00. 2528

Contents: General considerations. Special methods of investigation. The external genitalia. The vagina. Vaginitis management and the vaginal cervix. Disorders during adolescence; the onset of menstruation. The pelvic viscera. General surgical considerations. Special urologic considerations. Special proctologic considerations. Social service aspects. Medicolegal aspects. Subject index.

Note: Examination, treatment, and general management of a patient group that requires a special approach. The author attempts to clarify points on which there has been a general lack of information and to correct common misconceptions based on insufficient anatomical study. Differences between immature and adult organs are described and illustrated, and the rationale of clinical methods resulting from those differences are explained. Diagnostic procedures and specific therapy for disorders of the immature female genitalia are detailed, including endocrine therapy and sulfonamide therapy. Therapeutic techniques, prescriptions, and dosages are emphasized. The author discusses the medicolegal, social, and psychological problems encountered in this field. This is the first book on its subject published in the United States.

SMITH, ANNA KALET

A glossary of certain child-welfare terms in Spanish, Portuguese, French, and English. Washington, D.C.: Government Printing Office, 1942. 115 p. 22 cm. (United States. Children's Bureau. Bureau publication no. 271) Paper, \$0.15. 2529

Contents: Part I, Spanish-English. English-Spanish. Part II, Portuguese-English. English-Portuguese. Part III, French-English. English-French.

Note: The foreign-language terms in this glossary were obtained from child-welfare publications in each language and are given with the equivalent terms used in the United States. The purpose is to facilitate the international use of child-welfare literature published in this country and in other American republics.

UNITED STATES. CHILDREN'S BUREAU

The child from one to six. Washington, D. C.: Government Printing Office, 1937. 150 p. illus. 22 cm. (United States. Children's Bureau. Bureau publication no. 30) Paper, \$0.10. 2531

Contents (abridged): Out of babyhood into childhood. The child's physical surroundings. Preserving health and preventing disease. Teeth. Food and sleep. Clothing. Play. The sick child. Bibliography. Index.

Note: A general guide for parents on the care of the preschool child, intended to supplement the doctor's instructions.

UNITED STATES. CHILDREN'S BUREAU

Infant care. Revised edition. Washington, D.C.: Government Printing Office, 1942. 135 p.

illus. 22 cm. (United States. Children's Bureau. Bureau publication no. 8) Paper, \$0.10. 2532

Contents (abridged): The new baby. The doctor. The home. Clothes. Development of the baby. Baths. Play and exercise. Habits. Breast feeding. Cow's milk feeding. Foods in addition to milk. Prevention of disease. The premature baby. The sick baby.

Note: Based on the experience of many doctors, nurses, and other specialists, this bulletin is intended to help mothers and fathers in taking care of first babies and to understand and follow their doctor's instructions. New data on feeding and on care of the premature baby are included in the revised edition.

WILSON, MAY GEORGIANA

Rheumatic fever; studies of the epidemiology, manifestations, diagnosis, and treatment of the disease during the first three decades. New York: The Commonwealth Fund, 1940. 595 p. illus. (part col.) 26 cm. \$4.50. 2533

Contents (abridged): Historical summary. Epidemiology of rheumatic fever. Familial epidemiology of rheumatic fever. Consideration of etiological hypotheses. Bacteriological investigations relative to the etiology of rheumatic fever. Immunological response of rheumatic subjects to streptococcal infections; and relation of rheumatic fever to other infections. Summary. Symptoms and signs of infection in rheumatic fever. Involvement of the heart and great vessels in rheumatic fever. Involvement of organs and tissues—vascular lesions: small peripheral arteries of medium caliber, arterioles, capillaries, and veins. Bacterial endocarditis. Age and type of manifestation at onset. Recurrence of manifestations of rheumatic activity. Prognosis related to manifestations of rheumatic activity. Mortality and life expectancy. Graphic presentation of the course of rheumatic fever in 647 individual rheumatic patients. Criteria of diagnosis and differential diagnosis. Diagnostic significance of regression of physical signs. Diagnostic value of the radioscopic examination of the heart. Diagnostic value of exercise tests. Diagnostic value of the vital capacity measurement. Diagnostic significance of the electrocardiogram in rheumatic fever. General therapeutic measures. "Specific" therapy. Symptomatic treatment and medication. Bibliography. Appendices. Illustrations.

Note: Dr. Wilson presents in this volume the results of more than twenty years' study she has given to the etiology, epidemiology, manifestations, course, diagnosis, prognosis, and treatment of childhood rheumatism. She has followed many cases of rheumatic fever and rheumatic heart disease from onset of the illness in childhood through the years of adolescence and early adult life. In preparing this book she has drawn upon the important literature relating to the subject as a setting for the presentation of her own experience.

YEAR BOOK OF PEDIATRICS

The 1944 Year book of pediatrics. Edited by Isaac A. Abt with the collaboration of Arthur F. Abt. Chicago: The Year Book Publishers, Inc., 1944. 448 p. illus. 18 cm. \$3.00. 2534

Contents: The new-born. Infectious diseases. Feeding of infants. Nutrition: gastrointestinal diseases. Rheumatism. The heart. The Rh factor, recent advances, by I. Davidsohn. Diseases of the blood. Tuberculosis. Syphilis. Respiratory diseases. Glands of internal secretion. Nervous and mental conditions. Genito-urinary diseases. The skin. Rickets. Therapeutics and toxicology. Diseases of the bones and muscles. Surgery and anesthesia. Mouth and teeth. Eye, ear, nose and throat. Miscellaneous. Subject index. Index to authors.

Note: An illustrated annual digest of the international periodical literature of pediatrics, with critical annotations by the editors. The present issue contains a large number of articles in abstract form covering many diseases of infants and children, with details of the latest diagnostic and therapeutic measures. Medical journals of the United States and foreign countries are represented. The work covers aspects of home, office, and hospital practice of both pediatricians and general practitioners and is illustrated with photographs of numerous cases. References occur in footnotes but there is no bibliography.

ZAHORSKY, JOHN, AND T. S. ZAHORSKY

Synopsis of pediatrics. Fourth edition. St. Louis: The C. V. Mosby Company, 1943. 431 p. illus. (part col.) 20 cm. \$4.50. 2535

Contents (abridged): Growth and development. The hygiene of infancy. Incidence of diseases. Nutrition. Natural feeding. Cow's milk. Artificial feeding of infants. Feeding of children. Diagnosis. Therapeutics. Diseases and malformations of the newborn. Deficiency diseases. Disorders of growth and metabolism. Infectious diseases. The common cold. Lobar pneumonia. Diphtheria. Erysipelas. Measles. Rubella. Variola. Varicella and pertussis. Cerebrospinal fever. Infantile paralysis. Tuberculosis. Syphilis. Rheumatism. Infestations. Allergy. Diseases of the endocrine glands, blood, alimentary tract, respiratory organs, circulatory system, genitourinary organs, brain and meninges, nervous system, spinal cord, bones and joints. Diseases of the skin, the eyes and ears. Disorders of speech. Poisons and bites. Drugs and doses. Index.

Note: A condensation in handbook form of the most important facts of pediatrics, selected from the subject matter contained in standard textbooks on the subject. Description, symptoms, and treatment are given for each disease discussed, and there are photographs of typical cases. The work is intended for reference use by the student while he is pursuing the standard introductory course in pediatrics, and also for the general practitioner. The fourth edition contains new material on sulfonamide chemotherapy, the vitamins, and a new treatment of rheumatism advocated by the authors.

Geriatrics

BOAS, ERNST PHILIP

Treatment of the patient past fifty. Second edition. Chicago: Year Book Publishers, Inc., 1941. 324 p. illus. 21 cm. (The general practice manuals) \$4.00. 2536

Contents: Aging and disease. The aging process. General management of the aging and aged person. Principles of diagnosis and treatment. Diseases of the cardiovascular system. Diseases of the lungs. Diseases of the gastro-intestinal tract. Diseases of the bile passages, liver and pancreas. Diseases of the genito-urinary tract. Diseases of the bones and joints, and gout. Infectious diseases. Diabetes. Diseases of the thyroid gland. Disorders of the blood. Diseases of the eyes. Diseases of the skin. Diseases of the nervous system. Subject index. Footnote bibliography.

Note: The special approach required in treating aging and aged patients is explained in this guide to clinical geriatrics for general physicians, surgeons, industrial physicians and internists. The author makes clear the differences between bodily changes due to normal aging and those due to disease. Emphasis is laid on immediate and exact determination of the actual functioning status of the aging patient, and the correlation of this with disease processes—present or impending—is clearly defined. The text explains what studies should be made and how to make them, and it provides methods of eliciting points of history which are often overlooked. When actual disease has been demonstrated, the method of treatment, what medications to use and how to use them, what precautions must be routinely observed, etc., are provided. Specific therapy of upwards of 65 diseases is detailed.

MÜLLER-DEHAM, ALBERT, AND S. MILTON RABSON

Internal medicine in old age. Baltimore: The Williams & Wilkins Company, 1942. 396 p. illus. 23 cm. \$5.00. 2537

Contents (abridged): I, General considerations: Old age and death. Anatomy of old age. Physiology of senility. Life span and longevity. Hygiene of old age. Survey of geriatric diagnosis and treatment. Statistics in geriatric medicine. II, Respiratory system. III, Cardiovascular system. IV, Urogenital system. V, Digestive system. Blood dyscrasias. Endocrine disorders. VI, Metabolic disorders. VII, Musculo-skeletal system. Infectious diseases. Index.

Note: For the recent increased interest in geriatrics two explanations may be advanced: the realization that most of the still unsolved problems of medicine center in the latter half of life, and the increasing longevity of the population, which makes a knowledge of the special course of diseases in the aged an essential part of every practitioner's equipment. This book will be of interest, therefore, both to practicing physicians and to those interested in medical research. It is based on personal observation of patients and information obtained at necropsies. Throughout the book the outlook of the authors is sympathetic and hopeful. They endeavor to counteract the defeatism with which the subject of geriatrics is often regarded.

STIEGLITZ, EDWARD JULIUS, EDITOR

Geriatric medicine; diagnosis and management of disease in the aging and in the aged. Philadelphia: W. B. Saunders Company, 1943. 887 p. illus. 24 cm. \$10.00. 2538

Contents (abridged): Orientation. Principles of geriatrics. Anatomic, physiologic and mental changes with normal aging. Principles of pharmacology as applied to the aged. Principles of physical therapy, surgery, and anesthesia in the aged. Medico-legal aspects of senility. Syphilis. Parasitic diseases. Nutritional problems. Dysfunctions of thyroid, pituitary and adrenal glands. Diabetes mellitus. Gout. Mental diseases. Organic disease of brain, spinal cord and peripheral nerves. Disorders of vision and hearing. Diseases of the respiratory system. Diseases of the circulatory system. Disorders of the alimentary system. Disorders of the genito-urinary system. Diseases of the bones and joints. Diseases of the blood. Diseases of the skin. Index.

Note: This book is based on the premise that "an elderly person is no more just an old person than is a child a little man. Each requires special consideration, special methods of diagnosis, special treatment, special management." The object of the 54 contributing specialists has been to present this specialized knowledge in a manner useful to the general practitioner. Symptoms, signs, pathogenesis, course, prognosis, and therapy are all considered as they are altered by the basic biologic changes of aging. Greatest emphasis has been placed on the more frequent and important problems—cardiovascular-renal diseases, arthritis, anemia, gout, diabetes, cancer, etc. Advice is given on the evaluation of certain pathologic changes and deviations from the normal which in later years usually have well progressed before giving marked clinical manifestations, and which may be the warning signals of the beginnings of chronic disease.

GYNECOLOGY AND OBSTETRICS

ADAIR, FRED LYMAN, EDITOR

Maternal care; the principles of antepartum, intrapartum, and postpartum care for the practitioner of obstetrics; approved by the American Committee on Maternal Welfare, Inc. Prepared by W. C. Danforth, G. W. Kosmak, R. L. DeNormandie, and F. L. Adair. Chicago, Ill.: The University of Chicago Press, 1941. 91 p. illus. 19 cm. \$0.60. 2538a

Contents: Antepartum care. Intrapartum care. Postpartum care. *Note:* This booklet was prepared for the general practitioner. It discusses such topics as the initial prenatal visit, preservation of the mother's health, obstetric record, preparations for labor, preparation of the patient, care of the infant, care of the mother, postpartum hemorrhage, complications, and repair of birth injuries.

ADAIR, FRED LYMAN, EDITOR

Maternal care complications; the principles of management of some serious complications arising during the antepartum, intrapartum, and postpartum periods; approved by the American Committee on Maternal Welfare, Inc. Prepared by R. D. Mussey, P. F. Williams, and F. H. Falls. Chicago, Ill.: The University of Chicago Press, 1942. 92 p. 19 cm. \$0.60. 2538b

Contents: Toxemias of pregnancy, by R. D. Mussey. Obstetric hemorrhages, by P. F. Williams. Puerperal infection, by F. H. Falls.

Note: A supplementary booklet to the editor's *Maternal care* (described above). It was prepared under the same auspices and was designed for the general practitioner and the obstetrician. It presents briefly the essential facts relative to the three major causes of maternal mortality, and outlines their management.

ADAIR, FRED LYMAN, AND EDWARD J. STIEGLITZ, EDITORS

Obstetric medicine; the diagnosis and management of the commoner diseases in relation to pregnancy. Philadelphia: Lea & Febiger, 1934. 743 p. illus. (part col.) 24 cm. \$8.00. 2539

Contents: General considerations. Infectious diseases. Non-infectious diseases. Nervous system. Respiratory tract. Circulatory system. Alimentary tract. Urinary system. Endocrine balance. The blood. Body mechanics. Cutaneous system.

Note: This compilation coordinates and correlates the medical knowledge of a group of distinguished contributors concerning the problems of diagnosis, therapy, and prognosis of diseases occurring coincidentally with pregnancy. Its material is of common interest and importance to all who practice medicine, whether they are specialists or general practitioners.

ADAIR, FRED LYMAN, EDITOR

Obstetrics and gynecology, by the departmental staff of the University of Chicago and other contributors; edited by Fred L. Adair.

Philadelphia: Lea & Febiger, 1940. 2 v. illus. (part col.) 24 cm. \$20.00. 2540

Contents: Volume I: Introduction. Basic biologic relationships of human female. Approach to communal and individual problems. Life cycle of human female. Normal and abnormal conditions of non-pregnant and pregnant woman. Normal and abnormal conditions of parturient woman. Volume II: Normal and abnormal conditions of postpartum woman and of newborn infant. Diseases of female genitalia. Medical and surgical specialties in relation to obstetrics and gynecology. Obstetric and gynecologic operative procedures.

Note: This work is designed as a comprehensive guide for the general practitioner and for the medical student. Principles are stressed rather than non-essential details, and the fields of gynecology and obstetrics are related to biology and medicine. Over 60 physicians and biologists, most of them associated with the University of Chicago and its Department of Obstetrics and Gynecology, collaborated on the work. The two volumes contain 2031 pages and there are nearly 700 illustrations.

ANSPACH, BROOKE MELANCTHON

Gynecology. Fifth edition, reillustrated, reset, and completely revised by the author, with the assistance of Philip F. Williams and Lewis C. Scheffey. 679 illustrations of which 10 are in colors. Philadelphia: J. B. Lippincott Company, 1934. 832 p. illus. (part col.) 26 cm. \$9.00. 2541

Contents (abridged): Embryology. The developmental anomalies of the generative organs. Physiology. The etiology of pelvic disease. General physical examination. Examination of pelvis and abdomen, urinary organs, anus and rectum. Diseases of the external genitalia and vagina. Changes in position of the uterus. Endometriosis. Malignant tumors of the uterus. Ectopic pregnancy. Diseases of the ovaries, urethra, bladder, and uterine tubes. Diseases of the kidney and ureter. Abdominal viscera and associated pelvic disorders. Diseases of the anus and rectum. Backache. Gonorrhea. Tuberculosis of the generative organs. Syphilis. Constitutional types and endocrine disorders. Disorders of menstruation. Sterility. Hygiene and the relation between nervous and gynecological disorders. Sterilization and therapeutic abortion. Selection and preparation of the patient for operation. Operative technique. Postoperative treatment. Complications. Minor surgical, electrothermic, mechanical and local treatment. Radiation therapy. Vaccine and serum therapy. Index.

Note: The revisions in the fifth edition of this text and reference work for students and practitioners consist of new or rewritten sections on physiology, disturbances of function, and radiation treatment of gynecological disease, plus new data on diseases of the external genitalia, endometriosis, ovarian tumors, amenorrhea and dysmenorrhea, sterility, and endocrine disorders. Much of the material is based on a survey of the standard textbooks and literature of the field. There is considerable bibliographic material at the end of each chapter.

BECK, ALFRED CHARLES

Obstetrical practice. More than one thousand illustrations. Third edition. Baltimore: The Williams & Wilkins Company, 1942. 938 p. illus. (part col.) 26 cm. \$7.00. 2542

Contents (abridged): Ovarian and menstrual cycles. Chronological development of pregnancy. Physiology of fetus and maternal organism. Diagnosis and management of pregnancy and labor. The several positions and presentations. Multiple pregnancy. Diseases of fetal membranes. Abortion. Ectopic gestation. Toxemias. Medical and surgical complications. Pathology and anom-

alies of labor. Uterine complications. Adherent placenta. Artificial interruption of pregnancy. Obstetric operations. Resuscitation of newborn.

Note: This book is intended for use as a textbook and reference book on obstetric practice. Essential material is presented as concisely as possible. Prenatal care, the mechanism of labor, toxemias of pregnancy, medical and surgical complications are among the subjects given special emphasis. In this third edition the section on operative obstetrics has been completely revised and rewritten, with new illustrations provided with clear captions. The increased tendency to avoid abortion and to induce labor at term, resulting from perfection of medical methods of induction, is stressed. Requisites for successful forceps extraction are given in detail, with many illustrations in color. Various techniques for caesarian section are described, and details of administration of local anesthetics are discussed in this connection.

BLAND, PASCAL BROOKE, AND ARTHUR FIRST
Gynecology, medical and surgical. Third revised edition, with 445 illustrations, mostly original, including 31 full page plates in color. Philadelphia: F. A. Davis Company, 1939. 843 p. illus. (part col.) 25 cm. \$8.00. 2543

Contents: Anatomy and physiology. Endocrinology. Symptomatology and methods of diagnosis. Disorders of menstruation. Disorders of function. The vulva. The hymen and vagina. Fistulas. The uterus: anomalies, injuries, and inflammations. Displacements of the uterus. Inversion of the uterus. Benign tumors of the uterus. Malignant tumors of the uterus. Diseases of the Fallopian tubes. Tumors of the Fallopian tubes. Diseases of the ovary. Tumors of the ovary. Endometriosis. The pelvic peritoneum and cellular tissue. The urinary tract. Therapeutics. Gynecological radiology. Preoperative preparation. Anesthesia. Surgical technical methods. Postoperative treatment. Referred reading. Index.

Note: Intended as a guide to both the general practitioner and the specialist, the work incorporates in a detailed manner the medical or conservative phase of gynecology, at the same time not neglecting the importance of the surgical side of the work. Emphasis is chiefly laid on the medical treatment of genital disease, particularly in infected abortions, acute inflammatory tubal disease, and other lesions formerly regarded as surgical emergencies. Organotherapy and radiotherapy are also considered in detail. In the third edition a more detailed description of gynecological anatomy is given than in preceding editions, and genital pathology, endocrine therapy, and endometriomas are given new treatments. The bibliography contains about 550 entries.

BLAND, PASCAL BROOKE, AND THADDEUS L. MONTGOMERY

Practical obstetrics. Third revised edition, illustrated with 502 engravings including 27 colored plates. Philadelphia: F. A. Davis Company, 1939. 877 p. illus. (part col.) 25 cm. \$8.00. 2544

Contents: Anatomy. Physiology. Changes in the maternal organism during pregnancy. The symptoms and diagnosis of pregnancy. Plural pregnancy. The management of normal pregnancy. The pathology of pregnancy. The toxemias of pregnancy. Complications and abnormalities arising in the reproductive organs during pregnancy. Antepartum hemorrhage. Premature interruption of pregnancy. Diseases and abnormalities of the ovum. Ectopic gestation. Accommodation of the fetus to the birth canal. Normal labor. Labor in abnormal presentations. The pathology of labor. The puerperium. Anesthesia in obstetrics. Puerperal complications. Obstetric injuries. Operative obstetrics. The newborn child. Disorders and diseases of the newborn. Obstetric jurisprudence. Section on referred reading. Index.

Note: A concise textbook for the medical student and a guide for the general practitioner. Obstetric physiology and the various phases of pregnancy toxemia as well as the etiology, pathology, and therapy of puerperal infection are discussed in detail. Symptoms are classified according to their general and local manifestations. Special points in differential diagnosis are tabulated and discussion is devoted to all types of treatment of accepted worth. The third edition incorporates new material on endocrine physiology, obstetrical anesthesia, toxemias of pregnancy, and the treatment of the newborn. The bibliography lists approximately 550 books and articles.

COOKE, WILLARD RICHARDSON

Essentials of gynecology. 197 illustrations including 10 in color. Philadelphia: J. B. Lippincott Company, 1943. 474 p. illus. (part col.) 23 cm. \$6.50. 2545

Contents: Anatomy. Embryology. Physiology and endocrinology of the female reproductive system. The patient herself—mode of life and psychologic factors. History taking and examination. Functional disturbances. Anatomic anomalies. Malpositions. Circulatory disturbances and vascular lesions. Traumatic lesions. Trophic lesions. Inflammatory diseases of the female genital tract. Pseudoneoplasms. Benign neoplasms. Malignant neoplasms. Stromal neoplasms. General principles of operative treatment. The more commonly useful operations of gynecology. Index.

Note: The salient features of the anatomy, pathology, symptomatology, and therapy of gynecology are presented in concise form from the practical viewpoint in this text intended for the medical student and the general practitioner. Medical treatment is stressed throughout and an effort has been made to present a thorough basis for endocrine therapy. A chapter is devoted to the importance of proper psychologic management of the female patient. The section on surgical procedures is not intended for the specialist but rather to provide the practitioner with a working knowledge of pre- and postoperative care and procedures. Description, etiology, symptoms, treatment, and prognosis are given for each disease studied. There are no bibliographic references.

CRABTREE, ERNEST GRANVILLE, AND GEORGE C. PRATHER

Urological diseases of pregnancy, by E. Granville Crabtree, with a signed chapter by George C. Prather. Boston: Little, Brown and Company, 1942. 472 p. illus. (part col.) 25 cm. \$5.00. 2546

Contents (abridged): Part I. The pregnant state. Anatomy and physiology of urinary tract in relation to pregnancy, and changes. Effect of pregnancy on preexisting pathology. Effect of abdominal tumor. Symptoms of normal pregnancy alterations. Pregnancy in animals. The catamenia. Etiology of changes. Urine. Infections, and treatment. The bladder. Postpartum pyelonephritis. In animals. Cortical sepsis. Results of infections. II. Cystoscopy. Fluid balance. Risk of X-ray exposure. Toxemia of pregnancy, by George C. Prather. Hematuria. The lone kidney. Tuberculosis of urinary tract. Calculus. Tumor. Polycystic disease. Diabetes. Adrenal changes. Renal and ureteral injury. Aneurism of renal artery with rupture. Renal insufficiency following blood transfusion. Bilateral cortical necrosis. Renal contraindications to pregnancy. Bibliography. Index.

Note: In the authors' opinion the urology of pregnancy is a medical entity, although it may be considered a subdivision of either urology or obstetrics, and major contributions have been made to it by the study of endocrines and vitamins. In this book he has attempted to assemble the known facts in this field, a task not previously undertaken, and has interpreted these facts in the light of his own experience of practice and investigation. Some of the material has been published in recent texts on allied subjects, while other portions are presented here for the first time. The book is intended for urologists, obstetricians, and clinicians in general.

CROSSEN, HARRY STURGEON, AND ROBERT JAMES CROSSEN

Diseases of women. Ninth edition, entirely revised and reset, with eleven hundred twenty-seven engravings, including forty-five in color. St. Louis: The C. V. Mosby Company, 1941. 948 p. illus. (part col.) 26 cm. \$12.50. 2547

Contents (abridged): Anatomy and physiology. Examination and diagnosis. Treatment measures. Diseases of external genitals and vagina. Relaxation and fistulae. The uterus: displacements; inflammatory and metabolic disturbances; nonmalignant tumors; cancer. Pelvic inflammation. Other diseases. Diseases of ovary and parovarium. Malformations. Menstrual disturbances. Sterility and sexual disturbances. Miscellaneous disturbances. Lower intestinal tract in relation to gynecology. Invasion of peritoneal cavity. After-treatment in operative cases. Medicolegal points. Index.

Note: In this book the fundamentals of gynecology are presented without any details of major operative technique. This ninth edition emphasizes the recent advances made in diagnosis and treatment through intensive study of the physiology of this tract, and the practical applications of this new knowledge. Among the subjects given special consideration are hormone and endocrine activities, vitamins, the corpus luteum and its hormonal influences, and the minute structural details which control function in each organ, for example, the types of terminal apparatus in the myometrium and endometrium by which the normal menstrual disintegration and exfoliation of the endometrium are brought about. Many new illustrations have been added in this edition. The book is intended for use as a textbook and reference work.

CROSSEN, HARRY STURGEON, AND ROBERT JAMES CROSSEN

Operative gynecology. Fifth edition, entirely revised and reset. Twelve hundred sixty-four illustrations including three color plates. St. Louis: The C. V. Mosby Company, 1938. 1076 p. illus. (part col.) 26 cm. \$12.50. 2548

Contents: Ovarian and parovarian tumors. Pelvic inflammation. Other diseases of the ovaries, tubes, pelvic peritoneum, and pelvic connective tissue. Conservative surgery of the ovaries and tubes. Myoma and adenomyoma of uterus. Cancer of the uterus. Inflammation and disturbances of metabolism in the uterus. Retrodisplacement. Prolapse of uterus and bladder. Chronic inversion. Pelvic floor lesions. Genital fistulae. External genitals and vagina. Malformations. Disturbances of function. Urinary tract in relation to gynecologic surgery. Intestinal tract in relation to it, by H. S. Brookes, Jr. Nervous and mental symptoms in relation to it. Preparations for abdominal operation. Technique. After-treatment. Vaginal operations. Anesthesia in gynecologic surgery, by H. S. Brookes, Jr. Medicolegal points. Index.

Note: This work is devoted exclusively to operative treatment. The authors have endeavored to present this fully in all its bearings—the technique of the various operations, difficulties likely to be encountered, indications for operation in the various diseases, and selection of the exact form of operative procedure best suited to the particular case. Especial emphasis is placed on this feature, selective treatment with particular regard for modifying conditions, for it is felt that individual study and adaptation aid in securing effectiveness of relief and greater permanency of results. Much of the text has been rewritten in the present edition, and the material has been extensively rearranged in order of importance along the lines of modern thinking. For example, the ovary is now the organ first considered. The book is intended for students and practitioners of gynecological surgery.

CURTIS, ARTHUR HALE

A textbook of gynecology. Fourth edition, reset, with 401 illustrations chiefly by Tom Jones. Philadelphia: W. B. Saunders Company, 1942. 723 p. illus. (part col.) 25 cm. \$8.00. 2549

Contents (abridged): Anatomy. Physiology (exclusive of endocrine glands). The endocrines. History and examination. Infectious processes. Tumors of the uterus. Displacements and relaxations. Disturbances of function. Special chapters on early months of pregnancy from a gynecological aspect, the appendix and the large intestine in relation to gynecology, urinary tract problems in gynecology, radiotherapy, operative management and postoperative care. Index.

Note: This is a textbook for the medical student and a guide for the general practitioner and the gynecologist. Its function is to supply knowledge relative to gynecologic anatomy and physiology and to the etiology, pathology, and treatment of the diseases and conditions to which women are subject. Considerable stress has been placed on nonoperative treatment wherever experience has proved it acceptable. Operative technic is detailed and illustrated. For the fourth edition, the most important addition is the rewritten section on ovarian tumors. The chapters on gonorrhea have been modernized and include use of the sulfa drugs. Pathology of uterine myomata, carcinoma of the cervix, and management of uterine displacements are among other subjects revised. There are 574 illustrations on 401 figures, 35 of them in colors, chiefly by Tom Jones. Of special interest are the 63 pictures used in the chapters on anatomy of the female pelvis and perineum, and the embryology of the generative organs. References are included at the end of chapters.

DE LEE, JOSEPH BOLIVAR, AND J. P. GREENHILL

The principles and practice of obstetrics. With 1074 illustrations on 841 figures, 209 of them in color. Eighth edition, entirely reset. Philadelphia: W. B. Saunders Company, 1943. 1101 p. illus. (part col.) 26 cm. \$10.00. 2550

Contents (abridged): Introduction. Physiology of reproduction, pregnancy, labor and the puerperium. Physiology of reproduction and development of the ovum. Physiology of pregnancy. Conduct of pregnancy. Physiology of the puerperium. Conduct of the puerperium. Endocrinology. Pathology of pregnancy, labor and the puerperium. Index.

Note: Designed for the medical student, obstetrician, and general practitioner doing obstetrics, this book covers the care and management of the obstetrical patient from conception on through delivery and the puerperium. Approved antiseptic and aseptic methods are discussed and suggestions given on how to carry them out. Diagnostic procedure is described and tests given for determining pregnancy at its various stages. Stress is placed on relief of discomfort, prevention of accident and infection, and immediate treatment of complications. Of special interest is the extensive coverage of operative obstetrics in which are discussed preparatory obstetric operations, preparatory manipulations of the baby, operations of delivery, cesarean section, mutilating operations on the child, and induction of labor and therapeutic abortion. In the eighth edition, new and revised material is presented on obstetric and gynecologic endocrinology, use of vitamin K, vitamins and minerals in pregnancy, roentgenography in obstetrics, use of sulfa drugs, Waters' extraperitoneal cesarean section, toxemias, contracted pelvis, puerperal infection, pyelitis, and analgesia and anesthesia. References are placed at the ends of chapters.

DEXTER, LEWIS, AND OTHERS

Preeclamptic and eclamptic toxemia of pregnancy, by Lewis Dexter and Soma Weiss in collaboration with Florence W. Haynes, Herbert S. Sise and James V. Warren. Boston: Little, Brown and Company, 1941. 415 p. illus. 24 cm. \$4.00. 2551

Contents (abridged): Definition. Historical development of knowledge. Generalized edema in normal pregnancy and toxemia of pregnancy. Relation of pressor fraction of posterior pituitary to hypertension of toxemia. Toxic effects of pituitrin and pitressin; circulatory collapse and shock. Pressor substances in placentas of hypertensive pregnant patients. Arterial blood pressure of newborn babies of normal and hypertensive mothers. Effect of injection of various hormones, and of feeding of eclamptic and preeclamptic placentas on blood pressure of rats and rabbits. Effect of fetal death in utero on toxemia of pregnancy. Preeclamptic and eclamptic toxemia of pregnancy. Treatment. Index.

Note: This monograph, made possible by a grant from the John and Mary R. Markle Foundation, is based on an investigation of preeclamptic and eclamptic toxemia of pregnancy, and embraces both clinical and experimental studies. The results of the investigation, together with a critical review of recent data reported in the literature, are presented not only for obstetricians but for clinicians in general, for the clinical characteristics of toxemia of pregnancy are closely related to cardiovascular and renal problems, and the manifestations and consequences of the disease are of interest to all internists. A summary of the contents and a bibliography are given at the end of most of the chapters.

DIECKMANN, WILLIAM JOSEPH

The toxemias of pregnancy, with fifty text illustrations and three color plates. St. Louis: The C. V. Mosby Company, 1941. 521 p. illus. (part col.) 25 cm. \$7.50. 2552

Contents: Section I, Classification, incidence, and pathology: Classification, etc. Incidence of eclampsia and other toxemias of pregnancy. Pathology. II, Normal and abnormal physiology: Physicochemical determinations. Blood pressure. Renal physiology. Liver. Ocular system. Placenta. Endocrine glands. Estrogens and gonadotropins. Edema in pre-eclampsia and eclampsia. III, Etiology: Factors influencing "eclampsia" in pregnant animals. In pregnant women. Constitutional and environmental factors. IV, Clinical aspects: Signs and symptoms. Hypertensive disease. Diseases of the kidney, acute; chronic. Types of eclampsia. Pre-

eclampsia and eclampsia. Complications. v, Treatment; Historical résumé. Pharmacodynamics. Procedures and methods. Termination of pregnancy. Obstetric treatment of eclampsia. Of non-convulsive toxemia of pregnancy. vi, Maternal and fetal prognosis and prenatal care: Mortality: maternal; fetal. Maternal and fetal sequelae. Prenatal care. Monographs. Index.

Note: This book has two objectives: (1) to acquaint the obstetrician with some of the recent contributions on physiology pertaining to obstetrics; (2) to acquaint the investigator, untrained in obstetrics, with some of the physiology and pathology of obstetrics. Because the pathologic picture of toxemia is not clear-cut and the etiology is still obscure, the literature on this subject is voluminous, and in this book the author has condensed and discussed investigations, clinical observations, etc., which have appeared within the past twelve years. The material was thus limited in order to supplement previous monographs on this subject. The opinions, theories, and conclusions expressed by the author are based on his personal work.

FLUHMANN, CHARLES FREDERIC

Menstrual disorders; pathology, diagnosis and treatment. Philadelphia: W. B. Saunders Company, 1939. 329 p. illus. 24 cm. \$5.00. 2553

Contents: Historical review. The menarche. The menstrual cycle. Morphologic changes during the menstrual cycle. Comparative physiology of menstruation. Sex hormones. Endocrine control of menstruation. Modern methods of investigation. Sex hormones and irradiation of ovaries and hypophysis. Classification of menstrual disorders and abnormal uterine hemorrhage. Disorders of incidence of menstruation: amenorrhea, polymenorrhea, oligomenorrhea. Abnormalities of the menstrual flow: hypomenorrhea, hypermenorrhea. Periodic uterine hemorrhage. Arrhythmic uterine hemorrhage. Treatment of pathologic uterine hemorrhage. Pain and the menstrual cycle. Menstruation and systemic disease. The climacteric and menopause. Index.

Note: Written for the general practitioner and the gynecologist, this book sets forth the concepts of physiology of the menstrual cycle in woman, and the various disorders which may occur under the influence of local or systemic disease. Special emphasis has been placed on important endocrine factors, but the subject as a whole has been viewed as a general problem. Effort has been made to guide the physician in determining possible causative factors and in removing them through the institution of sound therapeutic measures and agents. References are placed at the ends of chapters and in addition to the illustrations, charts and tables are included.

GALDSTON, IAGO

Maternal deaths—the ways to prevention. New York: The Commonwealth Fund, 1937. 115 p. 21 cm. Paper, \$0.50; cloth, \$0.75. 2554

Contents: By way of introduction. The preventable deaths. Antepartum care. The attendant at delivery. Midwife practice. Place of delivery. Operative versus spontaneous delivery. Cesarean section. Anesthesia and analgesia. Abortion. What can be done. Appendix. Index.

Note: This concise booklet not only summarizes the essential facts of the maternal mortality problem, but offers suggestions of definite steps which laymen and health workers as well as physicians can undertake in their communities to avoid needless loss of mothers.

GESCHICKTER, CHARLES FREEMAN

Diseases of the breast; diagnosis, pathology, treatment, with a special section on treatment, in collaboration with Murray M. Copeland. 593 illustrations. Philadelphia: J. B. Lippincott Company, 1943. 829 p. illus. (part col.) 23 cm. \$11.00. 2555

Contents (abridged): Part I, Mammary development, physiology and hypertrophy; methods of examination and diagnosis: Endocrine physiology. Part II, The breast in pregnancy and lactation: Puerperal and nonpuerperal secretion. Mastitis. Influence of pregnancy and lactation on mammary lesions. Part III, Chronic cystic mastitis or mammary dysplasia: Endocrine aspects. Relation to cancer. Part IV, Benign mammary tumors. Part V, Malignant mammary tumors: Incidence and predisposing factors. Pathology. Recurrent and metastatic forms. Circumscribed forms. Stratified epithelial cancers. Microscopic diagnosis. Tumors of male breast. Part VI, Therapy: Surgery. Irradiation. Management of recurrent and metastatic cancer. Part VII, Experimental production of

benign and malignant mammary tumors: Production of cancer with estrogens. Mechanism of tumor formation. Index.

Note: Recent contributions to the etiology, diagnosis, and treatment of mammary diseases have been made chiefly by specialists in the fields of surgery, radiology, obstetrics and gynecology, pathology, endocrinology, and laboratory technology, and this book in which work done in these diverse fields has been assembled is designed for all of them as well as for the general practitioner. The original material analyzed consists of the case histories of patients seen in practice and on the surgical wards of Dean Lewis at the Johns Hopkins Hospital, and case histories, specimens, and follow-up studies recorded in the Surgical Pathological Laboratory of this institution. These data are presented in tabular form. The controversial points in the treatment of mammary disease, including bleeding from the nipple, the relation of chronic cystic mastitis and benign tumors to cancer, and the relative merits of radical surgery, irradiation, or a combination of both, have been dealt with on the basis of the end-results achieved in a large series of cases. Throughout the book emphasis has been placed on the subject of microscopic pathology. The studies on experimental production of all varieties of benign and malignant mammary tumors in the rat and rabbit, reported in the last section of the book, were conducted in the author's own laboratory.

GOODALL, JAMES ROBERT

A study of endometriosis, endosalpingiosis, endocervicosis, and peritoneo-ovarian sclerosis; a clinical and pathologic study, with 13 illustrations in black and white and 17 subjects in full color on 6 plates. Philadelphia: J. B. Lippincott Company, 1943. 140 p. illus. (part col.) 23 cm. \$5.50. 2556

Contents: History. Nomenclature. The invasive diseases of the urogenital type. Uterine endometriosis. Endometrial intra-uterine endometriosis and endometrioma. The vagaries in the response of the endometrium to the cyclical influences. Parietal endometriosis and endometrioma. Diseases caused by the invasion of the uterine parietes by the stroma cells of the endometrium. Stromatous endometriosis. Acute stromatous endometriosis with restricted malignant characters. Extra-uterine endometriosis. Endocervicosis. Conditions closely allied to endometriosis. Cause or causes of endometriosis. Major and minor forms of endometriosis. Symptoms and signs. Treatment. References. Index.

Note: This monograph attempts to bring the whole subject of endometriosis or morbid overgrowth of the uterine mucous membranes and its allied diseases under one cover, and to add several new contributions to this topic. The study presents the past history and present status of the disease, points out methods of tentative or probable diagnosis, summarizes the most recent research work, describes the spread of the disease and its possible causes, and outlines the involvement of other generative organs such as the ovaries, cervix, and vagina.

HAMILTON, BURTON E., AND K. JEFFERSON THOMSON

The heart in pregnancy and the childbearing age, with a section entitled Delivery and obstetrical after-care of cardiacs, by Frederick C. Irving. Boston: Little, Brown and Company, 1941. 402 p. illus. 24 cm. \$4.00. 2557

Contents: Part I, The cardiac in pregnancy: Definition, classification, prognosis and treatment. Treatment in pregnancy. Delivery and obstetrical after-care, by Frederick C. Irving. Postpartum complications. II, Physiology of the circulation in normal pregnancy and in pregnant women with heart disease. III, Heart diseases in pregnancy and the childbearing age: The heart in preeclampsia, eclampsia, and in hypertension and nephritis. Rheumatic heart disease. Cardiac neuroses, neurocirculatory asthenia, etc. Congenital defects of the heart and great vessels. Acute and subacute bacterial endocarditis. Thyroid heart. Rare cardiovascular diseases. Disorders of heart beat. Index.

Note: In this book the authors have recorded their own experience and have also reviewed the literature on the subject. To provide a historical background, they have first given a brief sketch of the general knowledge of this subject in their community in former times. This is followed by the portion of the book designed to record their knowledge and beliefs on the practical aspects of the care of cardiacs throughout pregnancy, delivery, and puerperium for the information of any physician, general practitioner, obstetrician, or internist who shares in their care.

JAMESON, EDWIN MILTON

Gynecological and obstetrical tuberculosis. Philadelphia: Lea & Febiger, 1936. 256 p. illus. 24 cm. \$3.50. 2558

Contents: Part I. The influence of distant foci of tuberculosis on genital physiology. Pathological changes in the internal genitalia of tuberculous women. The routes of infection of female genital tuberculosis. Part II. Tuberculosis of the vulva and vagina. Tuberculosis of the cervix. Tuberculosis of the uterus. Tuberculosis of the Fallopian tubes. Tuberculosis of the ovaries. The treatment of adnexal and uterine tuberculosis. The value of special diagnostic procedures in the recognition of pelvic tuberculosis. Part III. Pregnancy and tuberculosis. Pregnancy and collapse therapy. Maternal tuberculosis and the offspring.

Note: Based upon the author's investigations and clinical experience, supplemented by extensive laboratory research. The physiology, diagnosis, and treatment of tuberculous diseases of the pelvic organs are discussed in the light of information available at the time of publication.

JAMESON, EDWIN MILTON

Gynecology and obstetrics. With 5 illustrations. New York: P. B. Hoeber, Inc., 1936. 170 p. illus. 17 cm. (Clio medica; a series of primers on the history of medicine, Vol. XVII) \$2.00. 2559

Contents: Early period. Greek and Roman period. Renaissance. Modern period. History of the forceps. Story of puerperal fever. Development of gynecological surgery. Bibliography. Gynecological and obstetrical classics. Indexes.

Note: This volume offers a brief history of the development of obstetrics and gynecology from earliest beginnings. It is written in an entertaining style and is intended for the layman who is interested in these subjects, as well as for physicians in general and specialists in these fields in particular.

JARCHO, JULIUS

Gynecological roentgenology; a Roentgen atlas of the female generative organs with special reference to uterosalpingography and an outline of gynecology in its relations to roentgenology with case histories and a chapter on radium therapy. With 5 colored plates and 273 illustrations. New York: P. B. Hoeber, Inc., 1931. 571 p. illus. (part col.) 27 cm. (Annals of roentgenology, edited by J. T. Case. Vol. 13) \$20.00. 2560

Contents (abridged): Topographical anatomy of the female internal genitalia. General roentgenological methods in gynecology. Historical review of methods of producing roentgenological visualization by induced pneumoperitoneum and injection of iodized oil. Diagnostic inferences. Special indications and contraindications. Therapeutic application of induced pneumoperitoneum. Uterosalpingography. Combination of induced pneumoperitoneum and uterosalpingography. Roentgenological apparatus and technique after induced pneumoperitoneum or injection of iodized oil. General indications for and contra-indications to uterosalpingography. Therapeutic applications. Relative advantages and disadvantages. Vaginography. Physiological observations by means of uterosalpingography. Sterility: developmental anomalies and displacements of the uterus. Roentgenological diagnosis of pelvic tumors. Special roentgenological methods in diagnosis of pelvic inflammatory conditions. Radium therapy in gynecology. Bibliography. Indexes.

Note: The subject of this monograph embraces uterosalpingography and diagnostic measures involving pneumoperitoneum, a method of examining the organs of the pelvic region and other body cavities by inflating the cavity with gas or air. Other procedures, diagnostic as well as therapeutic, which necessitate the use of Roentgen rays or radium in obstetrics and gynecology are included. The work is based largely on a study of the literature of the field covering foreign as well as American articles. Various techniques of roentgenological study associated with methods of outlining the configuration of the uterus and adnexa are described and illustrated with reproductions of roentgenograms accompanied by case histories. The bibliography contains about 1,000 references.

JARCHO, JULIUS

Postures & practices during labor among primitive peoples; adaptations to modern obstetrics, with chapters on taboos & superstitions & postpartum gymnastics. With 130 illustrations. New York: P. B. Hoeber, Inc., 1934. 175 p. illus. 27 cm. \$3.50. 2561

Contents: Introduction. Customs and taboos of primitive peoples and their influence on modern times. Influence of daily habits of living and environment upon parturition. Primitive postures in labor with modern scientific adaptations. Practices and postures in labor among primates. Cruelties in labor. Urine and hormones. Comments on the theory of the separation of the pelvis in labor. Discussion of anthropology. Postpartum gymnastics. Bibliography. Index of personal names. Index of subjects.

Note: The purpose of this monograph is to transmit to modern obstetricians the application of those postures and practices utilized to advantage by primitive peoples in coping with their obstetric problems. The taboos, superstitions, and cruelties in labor are of interest also as anthropologic and ethnologic curiosities. The range of peoples covered is rather wide, from African tribes to Mexican Indians and European peasant stock. The illustrations are mainly from drawings gathered from many of the works listed in the bibliography.

JENSEN, JULIUS

The heart in pregnancy. St. Louis: The C. V. Mosby Company, 1938. 371 p. illus. 26 cm. \$5.50. 2562

Contents (abridged): Part I, Effect of pregnancy on the normal heart: The increase in cardiac work during pregnancy: effect of increase in weight and of mechanical pressure; demands of the ovum; functional and structural changes in peripheral blood vessels; increase of blood volume, etc. The mechanism whereby the heart meets the increased demands of pregnancy: blood pressure; pulse rate; cardiac output; oxygen utilization; circulation time. Effects of pregnancy upon the normal heart: cardiac hypertrophy and dilatation; Roentgen examination and electrocardiogram; functional murmurs; venous pulsation, etc. Effect of labor and puerperium on the normal cardiovascular system. Part II, Abnormal cardiac impulse formation during childbearing: Tachycardia. Bradycardia. Part III, Organic heart disease and pregnancy: Rheumatic heart disease: incidence; diagnosis; prognosis; death rate; effect of age; of various cardiac lesions; complications of valvular disease; indications for interruption of pregnancy; obstetrical delivery; anesthesia. The nonrheumatic heart diseases and pregnancy: bacterial endocarditis; cardiovascular syphilis; congenital heart disease; degenerative disease, etc. References. Index.

Note: In this book, which was written for obstetricians, internists, and cardiologists, the author has given a critical survey of the numerous physiological factors concerned with the increase in cardiac work during pregnancy, and has emphasized the necessity of considering the heart and circulation on a dynamic and functional as well as on an anatomic basis. The text is based on his own experience and a careful review of the literature on the subject which includes many isolated and relatively inaccessible reports.

JONES, ANITA M.

Manual for teaching midwives. Washington, D.C.: Government Printing Office, 1941. 139 p. illus. 24 cm. (United States. Children's Bureau. Bureau publication no. 260) Paper, \$0.30. 2563

Contents (abridged): Planning an institute: Teaching equipment. The midwife's standard equipment. Twenty lessons for midwives.

Note: A manual for the use of nurse-midwives and others responsible for the supervision and teaching of midwives. Intended for the instruction of the midwife who is without training and without formal education. It covers in simple terms the elementary principles of personal hygiene and asepsis as well as improved techniques.

KENNEDY, JAMES WILLIAM, AND ARCHIBALD DONALD CAMPBELL

Vaginal hysterectomy. Philadelphia: F. A.

Davis Company, 1942. 495 p. illus. (part col.)
25 cm. \$10.00. 2564

Contents (abridged): History of vaginal hysterectomy. General discussion: Vaginal versus abdominal hysterectomy. Vaginal hysterectomy of heavy patient. Fibroid tumor of uterus. Cervical polyp. Abused cervix. Prolapsed uterus. Hemorrhage from climacteric uterus. Fibrosis or subinvolution of uterus. Uterus with hyper-trophic endometrium. Chronic inversion of uterus. The infected puerperal uterus. Vaginal removal of the remaining cervix. Malignancy of uterus. Use of the cautery. Freedom of ovarian pathology. Real tragedies of malignant uterus. Postoperative complications. Illustrations of vaginal hysterectomy by clamp method. Anatomy. Symptoms, complications. Sequelae and treatment of prolapse. Vaginal hysterectomy by ligature method. Postoperative care and complications. Index.

Note: A description of the technique of removal of the uterus by the vaginal route, with a discussion of the advantages of this method over abdominal hysterectomy. Attention is called to the very low mortality and good postoperative history of vaginal hysterectomy which permits an adoption of the operation as a prophylactic step against malignancy of the uterus. All of the aspects of the procedure, which is also traced historically, are dealt with in considerable detail, and the applications of anatomy, physiology, and biochemistry to vaginal surgery are treated at length. Both clamp and ligature methods are described and illustrated.

LEONARDO, RICHARD ANTHONY

History of gynecology. Forewords by J. P. Greenhill and Victor Robinson. New York: Froben Press, 1944. 434 p. illus. 22 cm. \$3.00. 2565

Contents: Gynecology in ancient Egypt. Gynecology among the Hebrews. Gynecology among the Hindus. Gynecology in ancient Greece. Alexandrian gynecology. Gynecology in ancient Rome. The Byzantine period. Arabian gynecology. Salernitan gynecology. The Middle Ages. Gynecology in the Renaissance. The seventeenth century. The eighteenth century. The nineteenth century. Anatomy of the generative organs. The vaginal speculum. Evolution of operative gynecology. Recent advances. Bibliography. Indexes.

Note: Written for the general reader, this history is of interest also to medical men, nurses, social workers, and others interested in a brief survey of the subject. It presents a general account of the development of gynecology from Egyptian times down to the present, and covers social as well as medical aspects. The author has published numerous technical papers on various aspects of operative surgical technique. The bibliography contains 500 references to the world literature.

LITZENBERG, JENNINGS CRAWFORD

Contributions to the pathology of pregnancy. Lawrence: University Extension Division, University of Kansas, 1937. 72 p. illus. 22 cm. (Porter lectures series. VI) \$1.00. 2566

Contents: The pathology of ectopic pregnancy—tubal, interstitial, ovarian. Missed abortion—etiology, incidence, termination, pathology; symptoms, diagnosis, prognosis, treatment. The physician who became a god—a brief lecture on the greatest figure in Egyptian medicine, Imhotep, the first physician in recorded history. Bibliography.

Note: Lectures delivered at the University of Kansas School of Medicine in March, 1936. References to the literature accompany the first two lectures.

LULL, CLIFFORD BELL, AND ROBERT A. HINGSON

Control of pain in childbirth; anesthesia, analgesia, amnesia. With an introduction by Norris W. Vaux. 100 illustrations in black and white and 32 subjects in color. Philadelphia: J. B. Lippincott Company, 1944. 356 p. illus. (part col.) 23 cm. \$7.50. 2567

Contents: Anatomy of the organs of parturition. Physiopharmacology of the general anesthetic and amnesic agents. Physiopharmacology of paravertebral, peridural, regional, local, spinal,

caudal, and continuous caudal analgesia and anesthesia in obstetrics. Psychology of the management of pregnancy and labor. History of pain relief during childbirth. Technics for the relief of pain during labor and delivery. Management of the third stage of labor. Cesarean section. Management of the puerperium. Choice of the agent of pain relief in home obstetrics. Control of pain in maternal complications. Methods and drugs used in the resuscitation of the newborn. Appendix. Index.

Note: An important survey and interpretation of current knowledge and techniques. The authors have written with four main purposes in mind: correlation of the pharmacologic action of the various drugs on both maternal and fetal organ structures; the re-evaluation of indicated and contra-indicated drug combinations in cases with known maternal or fetal abnormality or disease; the selection of the type of pain relief best suited to the mother's physical and emotional status; and the perfection and simplification of technique through full utilization of the allied basic medical sciences. The two specialized fields of anesthesiology and obstetrics are constantly interrelated throughout the work, and the depressing and stimulating actions of different drugs upon maternal and fetal organs are illustrated by a series of remarkable charts in color prepared by D. Andrassy. Bibliographies are appended to the chapters.

MAZER, CHARLES, AND S. LEON ISRAEL

Diagnosis and treatment of menstrual disorders and sterility. With 108 illustrations. New York: P. B. Hoeber, Inc., 1941. 485 p. illus. (part col.) 24 cm. \$6.50. 2568

Contents: Pituitary gland. Ovary. Puberty in the female. Normal menstrual cycle; the hormone balance. Dysmenorrhea as an abnormal manifestation of the menstrual cycle. Additional abnormal manifestations of the menstrual cycle: premenstrual tension, migraine, breast hyperplasia, intermenstrual pain, vicarious menstruation. Amenorrhea caused by pituitary derangements, by primary ovarian derangements, of uterine origin, by malfunction of the thyroid gland, by functional and organic derangements of the adrenal glands, by functional and organic derangements of the nervous system. Hypomenorrhea. Uterine bleeding: of systemic origin; caused by organic lesions of the pelvic organs; of puberty and childbearing age; premenopausal dysfunctional bleeding. Sterility: General considerations; influence of gross pelvic lesions; cervical factor; tubal factor; endocrine factors in female; male factor in barren marriages; diagnosis and treatment of male sterility. Analysis of 438 cases of primary and secondary sterility. Relative sterility: Habitual abortion. Appendix: available standardized endocrine products. Index.

Note: Although this volume is intended for both student and practitioner of medicine, it is the hope of the authors that it will especially serve the family physician who is the first to see and treat women suffering from these conditions. With this in view they have described in detail the office procedures employed in the diagnosis and treatment of menstrual disorders and sterility, with but brief mention of the procedures requiring special technical skill and hospitalization. The therapeutic procedures advocated are the well-trying and safe measures which the authors have employed for many years. Whenever procedures not yet generally accepted are described, references to authoritative sources are included.

NEW YORK ACADEMY OF MEDICINE. COMMITTEE ON PUBLIC HEALTH RELATIONS

Maternal mortality in New York City; a study of all puerperal deaths, 1930-1932, Ransom S. Hooker, director of the study. New York: The Commonwealth Fund, 1933. 290 p. illus. 23 cm. \$2.00. 2569

Contents: Statement of the problem. Methods of the study. Preventability of death. Puerperal and extra-puerperal causes of death. Various factors affecting puerperal mortality. Hospital practice. Attendant at delivery. Midwife practice. Conclusions and recommendations. Appendix. Index. List of tables.

Note: A committee of the New York Academy of Medicine undertook the task of finding why women die in childbirth. Every maternity death that occurred in New York City in the course of three years (1930-1932) was thoroughly investigated within one week of its occurrence. This volume presents in full the results of the study, describes the methods, and sets forth the recommendations of the committee for reducing the exceedingly high maternity death rate in the United States.

NOVAK, EMIL

Gynecological and obstetrical pathology, with clinical and endocrine relations. Philadelphia: W. B. Saunders Company, 1940. 496 p. illus. 24 cm. \$7.50. 2570

Contents: Endocrinology of menstrual cycle and pregnancy. Diseases of the vulva, vagina, cervix. Cervicitis, cervical erosion and cervical polyp. Carcinoma of the cervix. Histology of the endometrium. Cyclical and pregnancy changes in endometrium. Hyperplasia. Endometritis, endometrial polyp, myometritis. Myoma of uterus. Adenomyosis uteri. Sarcoma of uterus. Adenocarcinoma of corpus uteri. Histology of Fallopian tubes. Salpingitis. Tumors of tube, parovarium and uterine ligaments. Embryology and histology of ovaries. Inflammatory diseases of the ovary. Classification of ovarian tumors. Non-neoplastic cysts of ovary. Cystadenoma of ovary. Primary carcinoma of the ovary. Metastatic ovarian carcinoma. Brenner tumors of the ovary. Dysgerminoma of the ovary. Granulosa cell carcinoma, thecoma and luteoma. Arrhenoblastoma and adrenal tumors of the ovary, luteoma. Other tumors of the ovary. Ectopic pregnancy. Pelvic endometriosis. Implantation and placentation. Hydatidiform mole and chorionepithelioma malignum. Abnormalities and diseases of the placenta and appendages. Index.

Note: This book represents the author's concept of the composite needs of the student, practitioner, specialist, and pathologist. All but a few very rare lesions have been discussed. Emphasis has been placed on those disorders most commonly met in practice. Special attention has been given to the correlation of pathology with clinical practice and of course the endocrinologic aspects have been emphasized. Most of the 427 illustrations have been taken from the laboratory of the Johns Hopkins Medical School and are largely microscopical. References to the literature appear at the ends of chapters.

NOVAK, EMIL

Textbook of gynecology. Second edition. Baltimore: The Williams & Wilkins Company, 1944. 708 p. illus. (part col.) 23 cm. \$8.00. 2571

Contents (abridged): Anatomy. Embryology. History and examination. Physiology, endocrinology, and mechanism of menstruation and pregnancy. An ovulatory cycle. Cyclical histology and changes. Clinical features of menstruation. Congenital anomalies. Diseases, including newgrowths of: vulva, vagina, cervix, endometrium, uterus, pelvis, ovary, tube, parovarium, and uterine ligaments. Ectopic pregnancy. Leukorrhea. Backache. Problems of sex life. Organotherapy. Biopsy and curettage. Menopause, disturbances of menstruation. Uterine bleeding. Sterility. Pregnancy conditions. Common disorders of female urinary organs, by Houston S. Everett.

Note: The first edition of this volume was called *Gynecology and female endocrinology*. Although the title has been shortened, the same emphasis is placed on the endocrinological aspects of the subject. The author's purpose also remains the same—to provide the undergraduate medical student and the practitioner with a text offering a comprehensive presentation of the biological aspects of gynecology, which have assumed great importance as the result of the developments in the field of reproductive physiology and endocrinology. Diagnosis and treatment are accented throughout, but operative technique is not discussed. There are two new chapters in this edition. In the one, data on embryology have been assembled from other chapters. The second, on female urology, has been contributed by Dr. Houston S. Everett. References, which are given at the end of most of the chapters, have been brought up to date in correspondence with changes in the text. Many new illustrations, including color photographs, have been added.

NOVAK, EMIL

The woman asks the doctor. Illustrated by Carl Clarke. Second edition. Baltimore: The Williams & Wilkins Company, 1944. 130 p. illus. 20 cm. \$1.50. 2572

Contents: What is femaleness? Superstition and folklore of menstruation. The reproductive apparatus of woman. The cause and significance of menstruation. The glands as related to female functions. The beginning of womanhood (puberty). Characteristics of normal menstruation. The "change of life" (menopause). Hygiene of menstruation. Woman as an egg-producer—with remarks on the so-called "safe" period. Some common disorders of menstruation. Sterility in women. Leucorrhea. Cancer, the arch-enemy of women. A little about the sex-life of woman.

Note: This book for the general reader is useful as a text for general practitioners to recommend to their patients. The second edition has been revised slightly to incorporate material discovered in the last nine years.

POTTER, EDITH LOUISE, AND FRED L. ADAM
Fetal and neonatal death; a survey of the incidence, etiology, and anatomic manifestations of the conditions producing death of the fetus in utero and the infant in the early days of life. Chicago: The University of Chicago Press, 1940. 207 p. illus. 20 cm. \$1.50. 2573

Contents (abridged): Introduction. Births, stillbirths, and infant mortality: statistics. The normal fetus and infant: measurements, organ structure and development. Postmortem examination. Survey of the principal causes of fetal and neonatal death: malformations, anoxemia, birth trauma, prematurity, toxemia, infections. Special pathology: study of individual organs. Index.

Note: Statistics have revealed that fetal and neonatal deaths in the United States account for approximately ten per cent of the total deaths for all ages and all causes. The data in this book, collected chiefly in the city of Chicago, show that about two-fifths of these deaths are from preventable causes. In presenting these data, it is the authors' aim to call attention to the major causes of these preventable deaths in the hope of improving conditions and of stimulating further investigation of these problems. The book is intended for all physicians and medical students, but especially for those practicing or studying gynecology, obstetrics, and pediatrics.

RICCI, JAMES VINCENT

The genealogy of gynaecology; history of the development of gynaecology throughout the ages, 2000 B.C.—1800 A.D., with excerpts from the many authors who have contributed to the various phases of the subject. Philadelphia: The Blakiston Company, 1943. 578 p. illus. 27 cm. \$8.50. 2574

Contents: Introduction. The prehistoric period. The ancient epoch. The classic age. The Byzantine period. The Arabic era. The mediaeval epoch. The transitional period.

Note: This book reveals in orderly fashion, following the accepted epochal divisions of the history of medicine, the slow advance of gynecology from its beginnings in the period preceding the advent of recorded history to its present high place in medicine. It is a repository of facts, dates, names, and places dealing with the development of the theories and therapies of female diseases throughout the ages.

RICCI, JAMES VINCENT, AND JAMES PRATT MARR

Principles of extraperitoneal Caesarean section. Philadelphia: The Blakiston Company, 1942. 224 p. illus. (part col.) 23 cm. \$4.50. 2575

Contents: The extraperitoneal principle of Caesarean section. Intra-abdominal lower segment, exclusion and extraperitoneal types of Caesarean. Anatomy and histology of the isthmus and lower segment. Anatomy and histology of the fascia and its relationship to the bladder, lower segment and peritoneum. Incisions, scars and ruptures of the lower segment. Methods of delivery in the extraperitoneal Caesarean. Wound infections and methods of drainage. Techniques of the extraperitoneal types of Caesarean. Essential factors in the execution of the Physick-Sellheim extraperitoneal Caesarean. Extraperitoneal Caesarean in patients previously Caesareanized or laparotomized. Complications. Appendix. Index.

Note: This book gives in full detail the technique of all types of extraperitoneal cesarean. The object is primarily to advance the extraperitoneal principle of cesarean section, particularly the Physick-Sellheim principle. This operation, which exposes the entire lower segment with no possible danger to the ureter nor to the bladder in its vaginal area, giving the maximum margin of safety to the mismanaged parturient, is proposed to supplant the outmoded Porro section and craniotomy. It argues that since it prevents a peritonitis it should displace all other types of cesarean in infected or mismanaged cases. The literature dealing with extraperitoneal, transperitoneal and exclusion procedures has

been reviewed with meticulous care in order to give the reader a broad historical perspective, an orderly sequence of events, and a balanced rationale.

ROBERTSON, HAROLD EUGENE

Hydronephrosis and pyelitis (pyelonephritis) of pregnancy: etiology and pathogenesis; an historical review. Philadelphia: W. B. Saunders Company, 1944. 332 p. illus. \$4.50. 2576

Contents: Early contributions on disturbances of urinary tract in pregnancy. Anatomic relations of the ureters. Eclampsia, ureteral compression and ureteral dilatation: 1877-1906. Bacteriology of pyelitis. Pyelitis, ureteral compression, ureteral dilatation and infection: 1907-1930. Influence of the nervous system. Intravenous urography. Ureteral reflux. Ureteral dilatation, pyelitis and infection: 1930-1943. Potassium-calcium ratios and vitamins. End results of hydronephrosis and pyelitis of pregnancy. Review of textbooks. Discussion. Conclusions. References. Index.

Note: This book is an historical review and as such is of interest to a wide field, including medical historians, obstetricians, gynecologists, pathologists, anatomists, and others. The accumulated data of past experiences are given in detailed, successive accounts of observations and accredited theories.

SCHUMANN, EDWARD ARMIN

A textbook of obstetrics. With 581 illustrations on 497 figures. Philadelphia: W. B. Saunders Company, 1936. 780 p. illus. (part col.) 24 cm. \$6.50. 2577

Contents (abridged): Introduction—general principles underlying reproduction. Pregnancy. Labor. Obstetrical pathology. Pathology of labor. Accidents of labor. Operative obstetrics. Bibliography. Index.

Note: The author's object in writing this book was to provide a concise, yet balanced, presentation of the art and science of obstetrics that would fit the needs of general practitioners and medical students. The mechanics of childbirth, and its more common complications, have been given great emphasis, while more rare conditions are but briefly sketched. Improved theories are simply mentioned, although no attempt has been made to avoid controversial topics. Among the features are the arrangement of signs and symptoms of pregnancy by weeks in order of appearance and the treatment table in the discussion of placenta praevia, giving time of pregnancy, condition of cervix, type of placenta praevia, and treatment indicated under existing factors for both primiparae and multiparae. Operative obstetrics is covered in some detail, especially cesarean section.

STANDER, HENRICUS JOHANNES

Williams Obstetrics; a textbook for the use of students and practitioners. Eighth edition. New York: D. Appleton-Century Company, Incorporated, 1941. 1401 p. illus. (part col.) 25 cm. \$10.00. 1946 2578

Contents (abridged): Anatomy. Physiology and development of the ovum. Physiology of pregnancy. Conduct of pregnancy. Physiology and conduct of labor and the puerperium. Pathology of pregnancy. Contracted pelvis. Pathology of labor. Obstetric surgery. Pathology of the puerperium. Index.

Note: This book is a revision and enlargement of the text originally written by Dr. Williams. It is intended for students and practitioners in this field. Three new chapters have been added in the present edition: "Diseases and abnormalities of the newly born child," "Classification of abnormal and contracted pelvis," and "Sudden death and maternal mortality." The section on embryology is shortened and brought into conformity with the newer ideas of Streeter and his school; the mechanism of labor embraces the recent roentgenological findings; toxemias of pregnancy are classified and discussed according to the new classification of the American Committee on Maternal Health; a new classification of contracted and abnormal pelvis is proposed and roentgenological pelvimetry is discussed in detail; the new techniques of cesarean section are considered; the causes of maternal and fetal mortality are evaluated in separate chapters; treatment of puerperal infection, etc., includes the newer concepts of chemotherapy; while the chapters on diseases of the urinary system and endocrine function have been rewritten.

TAUSSIG, FREDERICK JOSEPH

Abortion, spontaneous and induced; medical and social aspects. St. Louis: The C. V. Mosby Company, 1936. 536 p. illus. 25 cm. \$5.00. 2579

Contents: Definition and scope. Historical and racial aspects. Abortion in animals, by Walter Long Williams. Anatomy and physiology of early pregnancy. Pathology of abortion. Etiology of spontaneous abortion. Prevention. Mechanism. Symptoms and signs. Diagnosis and differential diagnosis. Treatment. Operative technique. Extra-uterine septic infection. Perforation. Other complications. Missed abortion. Molar pregnancy. Sequelae. Indications for therapeutic abortion, methods and technique. Preventive measures. Methods and accidents of illegal abortion. Statistics. Economic and domestic aspects of induced abortion. Theological and ethical aspects. Legalized abortion in the Soviet Union. Legal aspects. Control. Appendix: Statutes relating to abortion. Source tables. Glossary. Bibliography. Index.

Note: This volume is one of a series dealing with medical aspects of human fertility sponsored by The National Committee on Maternal Health, Inc. It is intended not only for the practitioner and specialist as an aid in the diagnosis and treatment of the various forms of abortion and its sequelae, but also for the sociologist and student of public health, furnishing them with the facts necessary to understand the way in which abortion undermines the physical well-being and moral integrity of the community.

TITUS, PAUL

Atlas of obstetric technic. Illustrations by E. M. Shackelford. St. Louis: The C. V. Mosby Company, 1943. 180 p. illus. 30 cm. \$7.00. 2579a

Contents: Introduction. General. Pelvimetry. Minor operations during pregnancy. Major operations during pregnancy. Abortions. Ectopic pregnancy. Induction of labor and enlargement of cervical orifice. Spontaneous deliveries. Forceps deliveries. Version and breech delivery or breech extraction. Management of birth canal injuries. Cesarean section. Mutilating operations. Third or placental stage operation. Postpartum procedures. Sterility.

Note: This atlas of modern clinical practice may be used to supplement the usual textbook of obstetrics as well as to guide the practitioners in standard procedure for normal and operative deliveries. The text is limited to brief descriptions of the details of techniques shown in the drawings which were prepared from life-sketches.

UNITED STATES. CHILDREN'S BUREAU

Maternal mortality in fifteen states. Washington, D.C.: Government Printing Office, 1934. 234 p. illus. 22 cm. (United States. Children's Bureau. Bureau publication no. 223) Paper, \$0.20. 2580

Contents (abridged): General considerations. Maternal care. Operations. Cesarean section. Abortions. Puerperal septicemia, Phlegmasia alba dolens, embolus, sudden death. Toxemias of pregnancy. Puerperal hemorrhage. Other accidents of labor, including rupture of the uterus. Ectopic gestation. Recommendations by advisory committee. Appendixes. Index.

Note: A study of the factors and accompanying case records in the deaths of 7,537 women attributable to puerperal causes, or approximately 26 per cent of all deaths from puerperal causes during 1927 and 1928. Recommendations towards the prevention of maternal deaths are addressed to the medical profession and to the general public.

UNITED STATES. CHILDREN'S BUREAU

Prenatal care. Revised edition. Washington, D.C.: Government Printing Office, 1942. 58 p. illus. 22 cm. (United States. Children's Bureau. Bureau publication no. 4) Paper, \$0.05. 2581

Contents (abridged): Signs of pregnancy. Engaging the doctor and nurse. The hygiene of pregnancy. Supplies and equipment. Birth of the baby. Hygiene of the nursing mother. The premature baby. Glossary.

Note: This bulletin is intended for parents and intended to supplement the doctor's instructions. The revised bulletin contains new material on nutrition and the care of the premature baby.

UNITED STATES. CHILDREN'S BUREAU

Standards of prenatal care. An outline for the use of physicians. Revised edition. Washington, D.C.: Government Printing Office, 1940. 5 p. 22 cm. (United States. Children's Bureau. Bureau publication no. 153) Paper, \$0.10. 2582

Contents: Past history. History of present pregnancy. Physical examination. Laboratory examination. Hygiene of pregnancy. Return visits.

Note: A list of examination data and a suggested record form (revised) for the guidance of the physician.

VAN BLARCOM, CAROLYN CONANT

Getting ready to be a mother. Revised by Hazel Corbin. Fourth edition. New York: The Macmillan Company, 1940. 190 p. illus. 19 cm. \$2.50. 2584

Contents: How one mother got ready. A baby is coming. Prenatal care. Nutrition of the mother and the baby. The baby's birthplace. The nursery. Baby's birthday. After the big event. Baby's first two weeks. Your baby's day and yours. Until the baby's first birthday. Some problems you may encounter, with some suggestions for handling them.

Note: A handbook for prospective mothers, describing the physiology of reproduction and the prenatal care of mother and child. It also tells what to buy for the baby, how to furnish and equip the nursery, and how to care for the baby after birth and adjust the household to its presence. A loose chart is given with the book on which baby's health record may be kept.

WHARTON, LAWRENCE RICHARDSON

Gynecology, with a section on female urology. Philadelphia: W. B. Saunders Company, 1943. 1006 p. illus. (part col.) 25 cm. \$10.00. 2585

Contents (abridged): Gynecology. Anatomy and supporting structures. Embryology and congenital malformations. Physiology and functional disturbances. Gynecologic examination. Childbirth injuries. Misplacements of uterus and fistulas. Pelvic infections. Diseases of the vulva, the vagina, the cervix, the uterus, the Fallopian tube and ovary. Endometriosis, sterility, extra-uterine pregnancy, and abortion. Diseases of the umbilical region and appendix. Postoperative care and normal hygiene. Female urology: Anatomy and methods of urologic diagnosis. Urinary obstruction. Urinary infections. Urinary stone. Tumors and injuries of urinary organs. Ureteral implantation and chemotherapy. Index.

Note: Written for the general practitioner, gynecologist, abdominal surgeon, obstetrician, and medical student, this book presents the principles and practice of gynecology—medical, surgical, and preventive. The approach is physiologic which concurs with modern teaching emphasis and a special feature is the extensive coverage of female urology. The book also re-

fects the modern stress on medical gynecology and as a result endocrinology and chemotherapy are both covered in considerable detail. Fundamentals are presented, but in the main major emphasis is on the clinical aspects—all methods of diagnosis and treatment, including surgical technique. Five hundred and forty-six illustrations on 444 figures are included, most of them of the large, Max Brodel school type. Each chapter is preceded by an outline of its contents and bibliographies are placed at the ends of chapters.

WITHERSPOON, JACKSON THORNWELL

Clinical pathological gynecology. Illustrated with 271 engravings. Philadelphia: Lea & Febiger, 1939. 400 p. illus. 24 cm. \$6.50. 2586

Contents: Introduction. Pathology of the vulva. Pathology of the vulvovaginal glands. Pathology of the vagina. Pathology of the cervix. Anterior pituitary gonadotropic hormone. The ovarian hormones. Menstruation and its disorders. Gynecological disorders of early pregnancy. Pathology of the endometrium. Pathology of the myometrium. Miscellaneous uterine disorders. Pathology of the Fallopian tubes. Pathology of the ovary.

Note: This book is based on the author's teaching experience. In it the more common clinical diseases are studied in detail. This study is followed by clinical interpretations of the etiology, symptoms, signs, treatment, and prognosis of each condition, presenting the pathological and clinical pictures of each disease. The text gives an understanding of gynecological pathology and a review of the clinical aspects of each pathological condition. It avoids the theoretical and to that end the discussion of embryology, congenital anomalies, and the anatomy of the female pelvic organs, except for a few illustrations, is purposely omitted.

YEAR BOOK OF OBSTETRICS AND GYNECOLOGY

The 1944 Year book of obstetrics and gynecology. Edited by J. P. Greenhill. Chicago: The Year Book Publishers, Inc., 1944. 576 p. illus. 18 cm. \$3.00. 2587

Contents: Obstetrics—Pregnancy: Physiology. Abortion. Complications. The toxemias. Labor: General. Analgesia and anesthesia. Complications. Operative obstetrics. Uterine hemorrhage. The puerperium: General. Sepsis. The new-born. Gynecology: General principles. Diagnosis. Sterility. Ectopic pregnancy. Operative technic. Benign tumors. Malignant tumors. Special tumors of the ovary. Menstruation and its disorders. Endocrinology. Infections. Subject index. Index to authors.

Note: An illustrated annual which covers twelve months' progress in management of diseases of women, with details of numerous diagnostic measures and therapeutic procedures applying to a variety of pathologic conditions. The present volume offers abstracts of about 500 articles selected from clinical-scientific periodicals of the United States and other countries, providing both specialists and general physicians with important developments on obstetric emergencies, office gynecology, home and hospital procedures, and operative obstetrics. Editorial comments are given in smaller type at the end of certain abstracts. Roentgenograms, drawings, and photographs show details of new diagnostic and therapeutic procedures.

SURGERY

General

AMERICAN MEDICAL ASSOCIATION. COUNCIL ON PHYSICAL THERAPY

Handbook on amputations. Reprinted from The Journal of the American Medical Association. Chicago: American Medical Association, 1942. 82 p. illus. 22 cm. \$0.75. 2588

Contents: Psychologic and physiologic principles in amputations. General principles governing all amputations. Sites of election. Amputations in diabetes mellitus and peripheral vascular disease. In congenital and chronic disabilities. Physical therapy. Interrelationships of the artificial limb manufacturer, the surgeon and the patient. Manufacture of artificial limbs. Rehabilitation. Index.

Note: This handbook is the work of a joint committee appointed by the Association of Limb Manufacturers of America and by the American Medical Association's Council on Physical Therapy with the object of securing an exchange of information and ideas, of setting up standards of ethical relationships between the two groups, and of complete cooperation in the settlement of their mutual problems. The book is intended for both orthopedic surgeons and manufacturers of artificial limbs.

BOYD, WILLIAM

617
Surgical pathology. Fifth edition, thoroughly revised. With 504 illustrations and 16 colored plates. Philadelphia: W. B. Saunders Company, 1942. 843 p. illus. (part col.) 25 cm. \$10.00. 2589

19.6
Contents: Surgery and pathology. Inflammation and repair. Gangrene. Infective granulomata. Special wound infections. Hemorrhage, thrombosis and embolism. Surgical shock. Tumors. Cysts. Neck, salivary glands and esophagus. Thyroid gland. Lips, mouth and tongue. Stomach and duodenum. Intestines. Vermiform appendix. Rectum. Gallbladder and liver. Pancreas. Peritoneum. Upper urinary tract. Lower urinary tract. Male reproductive system. Female reproductive system. Breast. Diseases of arteries and veins. Spleen. Lymphatic system. Cranium and its contents. Spine and spinal cord. Diseases of bones. Muscles, tendons and bursae. Surgical pathology of the thorax. Middle ear inflammation. Index.

Note: This book is of interest to practitioners and medical students, but has its chief appeal to the surgeon. It deals with surgical pathology with regard for the proportionate significance of the various aspects and with the aim of showing disease processes as the surgeon sees them in the operating room. Clinical features—onset of disease, method of spread, course of the disease, pathologic changes at various stages, morbid anatomy, microscopic findings, relation of symptoms to lesions, effects of radiation are discussed in order that the relation of the pathology to the symptomatology can be demonstrated. In the fifth edition new photomicrographs were added. A new chapter on the thorax is included and major additions made to 26 other subjects.

BREASTED, JAMES HENRY, EDITOR

The Edwin Smith surgical papyrus, published in facsimile and hieroglyphic transliteration with translation and commentary in two volumes. Chicago, Ill.: The University of Chicago Press, 1930. 2 v. 30 and 41 cm. (The University of Chicago. Oriental Institute publications. Vol. III-IV) \$20.00 set. 2590

Contents: Volume I. Foreword. General explanatory notes for physicians and other non-Egyptological readers. General introduction. Part I, The surgical treatise (the recto): Special introduction. Translation and commentary. Consecutive translation. Part II, The incantations and recipes: Special introduction. Translation and commentary. Consecutive translation. Part III, The indices: Egyptian glossary. General index. Addenda: The date of the Edwin Smith papyrus. Additional textual notes. Discovery of a single example of ancient Egyptian trepanning. Volume II. Introduction: The original text of the Edwin Smith papyrus. The hieroglyphic transliteration. Facsimile plates and hieroglyphic transliteration. Recto: The surgical treatise. Verso: Miscellaneous incantations and recipes appended on the back.

Note: In these two volumes the author presents the first translation of the papyrus which was named after Edwin Smith, one of the earliest students of Egyptian and student of hieroglyphic when the science was still young. Edwin Smith acquired the papyrus in Luxor in 1862, and after his death it was presented to the New York Historical Society. This study shows that it formed part of a treatise which was fundamentally different from any of the surviving medical documents of the ancient Orient thus far discovered. It constitutes the oldest known treatise on surgery; it consists of cases, not recipes; it is systematically organized in an arrangement of cases, beginning with injuries of the head and proceeding downward through the body, like a modern treatise on anatomy; treatment is rational and chiefly surgical, with resort to magic in only one case out of the 48 preserved; each case is classified as favorable, uncertain, or unfavorable (not to be treated). The mechanical appliances or processes employed appear here for the first time in the history of medicine.

BRUNSCHWIG, ALEXANDER

The surgery of pancreatic tumors, illustrated by Gladys McHugh. With 123 text illustrations and one color plate. St. Louis: The C. V. Mosby Company, 1942. 421 p. illus. (part col.) 25 cm. \$7.50. 2590a

Contents (abridged): Historical. Anatomy and embryology. Physiology. Experimental surgery. Diagnostic procedures. Pre-operative and postoperative care. Pancreatic cysts. Cystadenomas and cystadenocarcinomas. Ampulla of Vater: benign tumors; carcinoma and its operative treatment. Solid benign tumors excluding those arising from islets. Carcinoma of head of pancreas and its operative treatment. Cancer of, and excision of body or tail of pancreas. Hyperinsulinism and islet cell tumors; surgical treatment. Sarcoma. Secondary neoplasms. Complications of operations upon pancreas. Irradiation therapy. Carcinoma of pancreas in animals. Bibliography. Index.

Note: This book deals with a newly developing field, and its chief object is to stimulate interest and promote further work in this field, particularly in regard to malignant growths of the pancreas. In the past several years it has been demonstrated repeatedly that partial pancreatectomies are feasible. This is especially true in respect to the islet cell adenoma associated with hyperinsulinism, but in the author's opinion a completely defeatist attitude regarding the surgical treatment of malignant neoplasms is no longer admissible. Most of the recorded cases of operative removal of pancreatic tumors of all types are summarized in this volume, and related studies of the mechanism of insulin production, the hypoglycemic state, the operative technique, etc., are included. The book is intended for both surgeons and internists.

CALLANDER, CURLE LATIMER

Surgical anatomy. With a foreword by Dean Lewis. Second edition, entirely reset. Philadelphia: W. B. Saunders Company, 1939. 858 p. illus. (part col.) 27 cm. \$10.00. 2591

Contents: Head: Scalp, cranium, meninges, and brain. Special senses. Regions about the mouth. Regions within the buccal cavity. Tonsillar region and pharynx. Neck: General considera-

tions. Fascias of the neck. Anterior regions of the neck. Lateral regions of the neck. Thoracocervical region, "root of the neck". Thorax: Thorax in general. Thoracic walls. Thoracic cavity and its contents. Abdomen: Abdominal walls. Abdominal cavity and contents. Pelvis: Bony and ligamentous pelvis. Soft parts lining the pelvis. Pelvic viscera in the male. Pelvic viscera in the female. Male perineum and external genitalia: Male perineum. External genitalia. Female perineum and external genitalia: Female perineum. Vertebral column, vertebral canal, spinal cord. Upper extremity: Shoulder. Arm or brachial region. Elbow. Forearm. Wrist. Hand. Effects of injury of large nerves of upper limb. Lower extremity: Hip. Thigh. Knee. Leg. Ankle. Foot. Index.

Note: This book was planned for surgeons, anatomists, and medical students. By integrating the surgical anatomy of the entire body with surgical technique, the aim of the author is to indicate the paths of surgical approach to the pathologic process which is to be removed or corrected. Anatomy of the organ or region is first considered and then its surgical application discussed. The principles and anatomy of the commoner operations are described, and the steps in sequence illustrated. Special branches of surgery are covered, also other aspects such as methods of examination, diagnostic signs, surgical landmarks, instructions on selection of anesthesia, etc. There are 1371 illustrations on 819 figures—each with a descriptive legend. For the second edition, much of the text was rewritten and 100 new figure numbers were added. New facts were included on nerve surgery, surgery of the intervertebral disks and the ligamenta flava. There is a new discussion of spondylolisthesis.

CHRISTOPHER, FREDERICK

Minor surgery. Fifth edition, reset, with 575 illustrations. Philadelphia: W. B. Saunders Company, 1944. 1006 p. illus. 24 cm. \$10.00.

2592

Contents: Closed and open wounds. Infections of skin and subjacent tissues. Burns. Foreign bodies. Injuries by electricity. Circulatory disturbances and gangrene. Injuries of the head. Infections, tumors and deformities of the head. Injuries, infections, tumors and deformities of the neck. Injuries, infections, tumors and deformities of the trunk. Male and female genito-urinary organs. Anal canal and rectum. Injuries, infections, tumors and deformities of the upper and lower extremities. Minor surgical technic. Preoperative and postoperative care. The surgical intern. Index.

Note: This book includes the surgery of the general practitioner, of the physician who does not have ready access to a large hospital or contact with surgical specialists, of the physician who has been unable to serve the prolonged apprenticeship in surgery necessary to fit him to carry out formal and complicated operations, and the surgery of the resident surgeon and surgical intern. It is also of interest to advanced medical students. Included are the pathogenesis, diagnosis and treatment of those conditions which comprise the large majority of surgical affections, with stress on the fact that all minor surgery is potentially major surgery. Actual surgical technique is described and illustrated and nonoperative measures such as drug therapy and injection treatments are given where deemed the method of choice or acceptable as an alternative to surgery under specified circumstances. Outlines of signs, symptoms, and differential diagnostic data are included wherever they are prerequisites to the treatment. The fifth edition is the result of extensive revision. New material has been added on many subjects, the most important being that on wound treatment and healing, burns, and pre- and postoperative care. References are included as footnotes. There are 1000 illustrations on 575 figure numbers.

CHRISTOPHER, FREDERICK, EDITOR

A textbook of surgery by American authors. Third edition, completely revised and reset. Philadelphia: W. B. Saunders Company, 1942. 1765 p. illus. 25 cm. \$10.00.

1942 2593

Contents (abridged): Inflammation and repair of tissue. Bacteriology of surgery. Anthrax, fungus infections, tularemia. Thermal, chemical, electric and irradiation injuries. Skin and subjacent tissues. War injuries. Tendons, tendon sheaths, and fascial spaces. Muscles and ligaments. Bursae. Vascular, lymphatic, endocrine, and nervous systems. Orthopedic surgery. Amputations and prosthesis. Bones. Fractures. Dislocations. Head. Neck. Breast. Thoracic wall, pleura and lungs. Heart and pericardium. Mediastinum, including esophagus. Abdominal wall. Peritoneum. Stomach and duodenum. Small and large intestine. Anal canal and rectum. Liver and biliary system. Pancreas. Spleen. Hernia. Genito-urinary tract. Gynecology. Plastic surgery. Roentgenology.

Aseptic surgical technic. Minor surgical procedures. Anesthesia. Preoperative and postoperative care. Index.

Note: Designed as a text for the medical student and also as a reference for the surgeon and physician, this book deals with both general and special surgery. It was written by 195 American authorities. The subject matter contains the accepted principles of surgery. Debatable and incompletely tried methods have not been considered within the scope of this work. In presenting the material on each disease, the approach is through synonyms, definition, etiology, pathology, symptoms, prognosis, diagnosis, prophylaxis and treatment. Step-by-step operative technique is both described and illustrated, and wherever nonoperative measures are indicated, they are taken up. The third edition includes new or rewritten discussions of war injuries, gastric ulcer, anal pruritus and hemorrhoids, ear surgery, compound fractures, shock and collapse, uses of sulfonamides in surgery, and others. There are 1538 illustrations on 771 figures. Bibliographies are included.

COLE, WARREN HENRY, AND ROBERT ELMAN

Textbook of general surgery. Fourth edition. New York: D. Appleton-Century Company, Incorporated, 1944. 1118 (i.e. 1126) p. illus. 25 cm. \$10.00.

2594

Contents: Surgical history and examinations. Inflammation and repair. Bacterial inflammation. Acute surgical infections. Acute hand infections. Miscellaneous infections. Ulcer, gangrene, sinus, fistula. Surgical methods. Anesthesia. Wounds. Amputations. Surgery in diabetes. Shock and hemorrhage. Thermal, chemical and electrical trauma. The emergency prostrate patient: coma unconsciousness, delirium and convulsions. Neoplasms and cysts. Fractures, dislocations and sprains: specific types. The organs of movement: bone, joint, bursa, tendon and muscle. Blood vessels. The lymphatic system. The nervous system. Liver, gall-bladder, pancreas and spleen. The alimentary tract. The peritoneal cavity. Intestinal obstruction. Hernia. The breast. Surgical diseases of the chest. The endocrine glands. Gynecology. The genito-urinary system. War and catastrophe surgery. Author index. Subject index.

Note: Intended for practitioners and students of medicine, this book presents a systematic survey of the whole field of surgery. The subject matter is presented from a physiological viewpoint so that principles underlying both the clinical features and particularly treatment will be better understood. Pathogenesis has been emphasized in order to bring the rationale of treatment into bolder relief. The details of non-operative therapy have been fully covered. Numerous photomicrographs and illustrations of gross specimens along with the case histories of representative neoplastic and other lesions will be found throughout the text. Because of the influence of war on surgical thought, particular attention has been given in the fourth edition to open wounds and burns, and the treatment of fractures, particularly compound fractures. The material on amputations and on anesthesia has been expanded. The effectiveness of the sulfonamide compounds, especially in accidental wounds and abdominal operations, has required extensive additions. Water and electrolyte balance as well as transfusions and the use of plasma have been discussed at length. Numerous illustrations were changed or replaced by new ones. A new chapter on war and catastrophe surgery has been added. Eighteen consulting authors assisted in preparing the revision.

CUTLER, ELLIOTT CARR, AND ROBERT ZOLLINGER

Atlas of surgical operations. Illustrated by Mildred B. Coddington. New York: The Macmillan Company, 1939. 181 p. illus. 38 cm. \$9.00.

2595

Contents (abridged): General considerations: Surgical technique. Anesthesia. Preoperative and postoperative care. Surgical operations: Neck. Chest. Abdominal wall. Gastrointestinal system: Stomach. Gall-bladder and bile ducts. Small intestine. Appendix. Large intestine. Sigmoid. Rectum, anus. Spleen. Gynecological system: Abdominal procedures. Vaginal procedures. Extremities.

Note: A fully illustrated compendium of all the common surgical operations, including the gynecological. The book is 76 cm. x 38 cm. in size and opens flat to show on each left-hand page the description of a surgical procedure and on the facing right-hand page illustrations showing technique step by step. Halsted "school for safety" technique is employed, eliminating the hazards of tissue-damage from too-rapid operating methods. This is designed for surgeons, general practitioners doing occasional surgery, interns and medical students. Pen-and-ink drawings.

FERGUSON, LEWIS KRAEER, AND LOUIS KAPLAN

Surgery of the ambulatory patient, by L. Kraefer Ferguson with a section on fractures by Louis Kaplan. 645 illustrations. Philadelphia: J. B. Lippincott Company, 1942. 923 p. illus. 23 cm. \$10.00. 2596

Contents (abridged): Part I, Surgical principles and lesions: Survey of the field of ambulatory surgery. Equipment. Anesthesia. Preparation for and conduct of operation. Postoperative care. Dressings and bandages. Treatment of inflammation due to infection. Specific surgical lesions. Open wounds. Burns and frost-bite. Foreign bodies. Superficial cysts and tumors. II, Regional surgery: Scalp. Face, nose, ear, eye. Mouth and salivary glands. Neck. Chest and breast. Abdomen. Back. Perianal region, anus and anal canal. Genito-urinary tract. Arm and shoulder. Hand and fingers. Leg. Foot and ankle. III, Musculoskeletal system: General considerations. Thoracic region, clavicle, and scapula. Upper extremity. Lower extremity. Index.

Note: The lesions discussed in this volume are those encountered regularly in an office or out-patient clinic, and the author has described what he considers the best methods of treating them as proved by personal experience. He has made an effort to point out mistakes of treatment as well as successful procedures. The book is intended especially for the younger surgeons and general practitioners, who are most likely to perform surgical operations of this type.

GROSS, SIDNEY WILLIAM, AND WILLIAM EHRLICH

Diagnosis and treatment of head injuries. Introduction by Percival Bailey, with 94 illustrations. New York: P. B. Hoeber, Inc., 1940. 275 p. illus. 24 cm. \$5.00. 2597

Contents: Introduction, by Percival Bailey. Applied anatomy of the head. Intracranial physiology. Mechanics and pathology of head injuries. Methods of examination. Classification of head injuries. Principles guiding the treatment of head injuries. Injuries of scalp and skull. Extradural hemorrhage. Traumatic subdural hematoma. Fractures of the skull with involvement of the paranasal sinuses, mastoids and middle ear. Suppurative cranial and intracranial disease resulting from trauma. Gunshot and other penetrating wounds of the head. Cranial nerve injuries. Convulsive seizures following head injury. Surgical technique. Complications and sequelae of head injuries. Head injury and disease of the nervous system. Bibliography. Index.

Note: Intended as a reference manual for the physician or surgeon of average training, and useful also as a textbook for the advanced medical student, this work presents a practical and concise approach to the problem of head injuries and their treatment. The author emphasizes the methods of emergency treatment and after-care of victims of automobile accidents, falls, and other mishaps, from the standpoint of the general practitioner called upon to render immediate aid. Of particular value to army doctors and surgeons in treating battle casualties. The bibliography contains about 230 references and there are numerous roentgenograms.

HOMANS, JOHN, COMPILER

A textbook of surgery, compiled from lectures and other writings of members of the surgical department of the Harvard Medical School. With a special biographical index and with illustrations by Willard C. Shepard. Fifth edition. Springfield, Ill.: Charles C. Thomas, 1940. 1272 p. illus. 26 cm. \$8.00. 2598

Contents: Repair. Surgical bacteriology. Surgical technic. Suppurative inflammation. Ulcer, gangrene and their causes. Trauma. Miscellaneous infections. Tuberculosis. Syphilis. Tumors and cysts. Blood vessels. Lymphatics. Peripheral and cranial nerves. Sympathetic and parasympathetic nervous system. Joints. Bursae. Muscles and tendons. Diseases of bone—infections, nutritional, tumors. Fractures. Injuries of shoulder girdle, shoulder and arm; elbow and forearm; wrist and hand; pelvis, hip and femoral shaft; knee and leg; ankle and foot. Scalp. Cranium and meninges. Brain. Pituitary gland. Lips, palate and face. Mouth, tongue and jaws. Eye. Ear. Nose, accessory sinuses and pharynx. Neck. Thyroid and parathyroid glands. Spinal cord. Vertebral column. Larynx, trachea and bronchi. Thoracic wall, pleurae and lungs.

Breast. Heart, pericardium and mediastinum. Esophagus. Stomach and duodenum. Liver, gall bladder, biliary passages and pancreas. Spleen. Peritoneal cavity. Intestines. Appendix. Rectum and anus. Hernia and abdominal wall. Gynecology. Genito-urinary diseases. Diseases of extremities. Anesthesia. Amputations and plastics. Bibliographical index. Subject index.

Note: This work has won wide recognition as a textbook and work of reference. Its aim is to teach the fundamentals and also something of the practice of surgery. Each section includes the anatomy and physiology of the part in question, its diseases, their pathological features and clinical manifestations, diagnosis, preferred treatment, etc., and also full discussions of surgical technique. A valuable feature is the historical sketch at the beginning of each chapter, or in some instances, at the head of divisions. Besides introducing the subject, these historical notes outline the development of our present knowledge of the anatomy, physiology, etc., of the part, and of the methods employed in treating its diseases. These historical data are assembled in the bibliographic index at the end of the book. The present edition has been brought up to date by revision and inclusion of material on newly discovered diseases and recently developed procedures in diagnosis and treatment.

HORSLEY, JOHN SHELTON, AND ISAAC A. BIGGER

Operative surgery. With contributions by C. C. Coleman, Austin I. Dodson, John S. Horsley, Jr. [and] Donald M. Faulkner. Illustrated by Helen Lorraine. Fifth edition. St. Louis: The C. V. Mosby Company, 1940. 2 v. illus. 26 cm. \$18.00. 2598a

Contents (abridged): Volume I. Malignant tumors. Blood vessels. Nerves. Bones and tendons. Amputations. Plastic surgery. Neck and lungs. Mammary glands. Volume II. Heart. Esophagus. Hernia. Abdomen. Urology. Brain and spine. Sympathetic system.

Note: One of the chief aims of this book is to emphasize those physiologic and biologic principles which, to some extent, obtain in every surgical operation. Particular stress has been laid upon the preservation of physiologic function and the interpretation of the biologic processes that follow surgical operations. In this edition, most of the chapters have been revised to some extent, and some of them have been largely rewritten. Many new operations and 183 new drawings have been added. The description of the treatment of appendicitis has been considerably elaborated. The chapters on ligation of arteries and on aneurisms have been completely rewritten. Much new material has been introduced in the section on orthopedics.

ILGENFRITZ, HUGH CALVIN, AND RAWLEY M. PENICK

Synopsis of the preparation and aftercare of surgical patients. With foreword by Urban Maes. St. Louis: The C. V. Mosby Company, 1941. 532 p. illus. 20 cm. \$5.50. 2599

Contents: Fluid and electrolyte balance. Shock. Transfusion. General preoperative measures. General postoperative measures. Systemic complicating factors. Organic diseases. Minor postoperative complications. Major postoperative complications. Intestinal obstruction and peritonitis. Wounds and fistulas. Chest. Brain and spinal cord. Extremities. Stomach and duodenum. Small intestine and appendix. Large bowel. Biliary tract. Thyroid. Appendix. Index.

Note: A handbook intended as a practical guide to the care of surgical patients throughout their hospital stay, designed for surgical residents and surgical practitioners and useful to internes and nurses. The pathogenesis of each of the various complications considered is outlined and the physiologic basis for each therapeutic measure advocated is discussed. Details of various technical procedures have been intentionally omitted but certain tests such as the Quick liver-function test and various methods for prothrombin time determination have been described in full, since these procedures are relatively recent developments. Controversial material is avoided in the presentation of many recently advocated therapeutic procedures. References at the end of each chapter.

MARKOWITZ, JACOB

Textbook of experimental surgery. Baltimore: Williams and Wilkins Company, 1937. 527 p. illus. 23 cm. \$7.00. 2600

Contents: Introductory remarks. The antvivisection movement. Care and feeding of animals. Anesthesia. Equipment, technic, sutures and instruments. Technic of opening and closing a mid-line cutaneous incision: laparotomy. Technic for opening and closing the thorax of dogs. Elementary exercises suitable for undergraduate medical students. Standard technical procedures in the surgery of the alimentary canal. Gastric fistulae. Intestinal fistulae: jejunostomy. The experimental production of chronic peptic ulcer. Exteriorization of an intestinal loop. Surgical physiology of intestinal obstruction. Absorption, excretion and motility of the isolated colon. Experimental surgery of the esophagus. Some features of experimental peritonitis. Experimental surgery of the pancreas. Total biliary fistula. Experimental surgery of the gall-bladder. Transplantation of ducts. Fascial transplantation. The experimental surgery of bone. Several standard intracranial operations. The experimental surgery of the heart. Experimental surgery of the involuntary or autonomic nervous system. Blood vessel surgery. Transplantation of organs. The experimental surgery of the liver. Epilogue. Index.

Note: The operative technique described in these pages is suitable for use on animals, particularly dogs. The volume presents some of the major accomplishments of experimental surgery and demonstrates in some detail the technical procedures by which this knowledge was acquired. Intended as a textbook for medical students for use in introductory surgery courses. There is a large number of references at the end of each chapter.

MEYER, SEYMOUR WILLIAM

Kinetic bandaging, including splints and protective dressings; the kinetic method of visual teaching. 540 illustrations. Philadelphia: F. A. Davis Company, 1943. 310 p. illus. 22 cm. \$3.50.

2601

Contents (abridged): Unit I, Introduction: Simplicity in bandaging. "The kinetic method." Requirements of a good bandage. Definitions and terminology in bandaging: materials used in bandages, splints and protective dressings. Unit II, Elementary bandaging: The basic turns; bandaging of cylinders; cones, ovoids; figure-of-eight turns—bandaging of joints; starting and terminating bandages. Axioms of good kinetic bandaging. Unit III, Advanced regional bandaging: Bandages for the upper extremity. Lower extremity. Head, face and neck. Neck, breast and axilla. For chest and abdomen. For the breasts, arms, chest and shoulder. For the groin, perineum, and buttocks. Part IV, The triangular bandage: Preparation of the triangle. Basic principles and technics for use. Regional bandaging with the triangle. Unit V, Adhesive plaster dressings and tapings. Unit VI, Splints: Basic principles and standard splints. Emergency splinting of fractures. Unit VII, Plaster of Paris dressings. Unit VIII, Cosmic bandaging. Unit IX, A practical method of presenting bandaging. Unit X, Bibliography. Index.

Note: Teaches bandaging by the use of simple diagrams with each turn clearly numbered.

NASH, JOSEPH

Surgical physiology. Springfield, Ill.: Charles C. Thomas, 1942. 496 p. illus. 26 cm. \$6.00.

2601a

Contents (abridged): The circulatory system: The heart, the blood vessels, the blood. Summary outline of factors which determine blood pressure. Circulatory disturbances in surgery: Surgical shock, hemorrhage, burns. The reticulo-endothelial system and its cellular defense. The liver. The respiratory system: Mechanics of respiration. Pneumothorax. Control of respiration, nervous and chemical, apnea. Chemistry of respiration. Regulation of body temperature. Oxygen and carbon dioxide exchange. Anoxia, cyanosis, regulation of body temperature. The alimentary system: The upper digestive tract. Salivary glands. Swallowing. The esophagus, the cardiac sphincter. The stomach, gastric motility. The intestines. Secretion and absorption. Motility. Pancreas, liver, vitamins in surgery, metabolism: Pancreatic juice. Insulin. Gall-bladder and bile-ducts, gall-stones. Body fluids: Plasma, water balance, gastro-intestinal fluid, sweat, cerebrospinal fluid, acid base balance. Functions of the kidney; control of kidney function, renal insufficiency. Endocrine glands: The antituary, the postituary; the thyroid, parathyroids, thymus, adrenal medulla, testis, ovary. Menstruation; pregnancy tests. Cerebrospinal nervous system: Afferent functions, reflex arc. Efferent functions, skeletal muscle control. Classification of motility disorders. Nerve degeneration and regeneration. Cerebrospinal fluid. Autonomic nervous system: Sacral outflow, thoraco-lumbar outflow, cranial outflow. Chemical mediators of autonomic activities. Autonomic control of the circulatory system; respiratory, alimentary, and other systems. Afferent innervation of the viscera. Viscero-motor

reflexes. Visceral sensation. Referred pain. Visceral afferent innervation of various regions. Sensibility of peripheral blood vessels.

Note: A presentation of those aspects of physiology which are of importance especially in surgery. The subjects listed are discussed in detail.

THE NELSON SURGERY. Prepared under the direction of an advisory board comprising the world's leading surgeons, Allen O. Whipple, editor-in-chief; Fordyce B. St. John, associate editor. New York: Thomas Nelson and Sons, 1944. 9 v. illus. (part col.) 26 cm. \$110.00.

2601b

Contents (abridged): Volume I: Physiology. Bacteriology. Pathology. Infections. Anesthesia. Complications. Legal relations. Volume II: Tumors. Diabetes. Tuberculosis. Nervous system. Plastic surgery. Head and neck. Thyroid gland. Volume III: Orthopedics. Bones and joints. Amputations. The hand. Vascular system. Volume IV: Thoracic wall. Pleura and lungs. The lymphatics. Esophagus. Heart, pericardium. Breast. Hernia. Volume V: Peritoneum. Stomach. Intestines. Liver. Spleen. Biliary tract. Pancreas. Volume VI: Urology. Volume VII: Gynecology. Surgical obstetrics. Volume VIII: Surgery of the nose and throat. Volume IX: Index.

Note: Similar in format, plan and treatment to *Nelson medicine* (see Index), this loose-leaf encyclopedia presents a comprehensive, up-to-date treatise of the latest methods and techniques of modern surgery. Planned by an advisory board of 12 surgical specialists and written by 150 contributing surgeons and professors of surgery in America and Great Britain, the subject-matter is grouped by chapters according to anatomical classification. The volumes cover in detail surgical pathology, physiology, medical aspects of surgery, surgery in special conditions, surgery in the tropics, anesthesia, and legal relations of surgery, with emphasis throughout on operative indications and techniques. Extensive bibliographies are given at the end of most of the chapters, which number between 15 and 20 per volume, except the last which contains a detailed index. The most important feature is the loose-leaf format by means of which new and revised pages, issued semiannually, may be inserted. These revisions may be contracted for at the time of original purchase or subscribed to at extra cost of \$15.00 annually. Volume VIII, *Surgery of the nose and throat*, 688 p., \$15.00, may be purchased separately.

ORR, THOMAS GROVER

Operations of general surgery. With 1396 step-by-step illustrations on 570 figures. Philadelphia: W. B. Saunders Company, 1944. 723 p. illus. (part col.) 27 cm. \$10.00.

2602

Contents: Wound healing. Treatment of fresh wounds. Sutures and knots. Amputations. The skin and subcutaneous tissues. Muscle, fascia, and bursa. Tendons and tendon sheaths. Thorax and respiratory system. The breast. Circulatory system. Abdominal incisions. Digestive system. Hernia. Bones and joints. The nervous system. The sympathetic nervous system. Lymphatic system. Endocrine system. Congenital anomalies. Genito-urinary system. Female reproductive system. Index.

Note: This book was written for the use of the general and special surgeon, the military surgeon, the intern, and the general practitioner. Surgical technique is, of course, the major feature of the book. Surgical anatomy and dangers and safeguards as well as other practical information are included, however, in order to round out the presentation. The reader is told why each operation has been selected. To avoid indecision only one or two techniques for each operation are given unless circumstances dictate otherwise. In order to emphasize the general surgery features of the book, the chapters have been arranged, in so far as possible, by systems rather than by strictly anatomic divisions or under the specialties. Chapters of special significance are those on wound healing, treatment of fresh wounds, sutures and knots, and abdominal incisions. There are 1396 illustrations, mostly large pictures and devoted almost exclusively to picturization of operative technique. References are included at the ends of chapters.

RITCHIE, WALLACE PARKS

Essentials of general surgery. With 237 illustrations. St. Louis: The C. V. Mosby Company, 1941. 813 p. illus. 25 cm. \$8.50.

2603

Contents: A brief history of the development of surgery. Anesthesia, by Ralph T. Knight. Surgical technique. Asepsis. Wounds. Mechanical and thermal injuries. Hemorrhage and shock. Gangrene and peripheral vascular diseases. Inflammation and infection. Tumors, by C. B. Craft. Skin, by Francis W. Lynch. Lymphatic system. Blood vessels. Peripheral nerves. Orthopedic surgery, by Stewart W. Shimonek. Fractures and dislocations, by E. T. Evans. Amputations. Tissue transfer and transplantation. Head, brain, and meninges. Oral cavity. Neck. Endocrine glands. Breast. Chest wall, pleura, and lungs. Heart and pericardium, by John R. Paine. Esophagus, larynx, and trachea. Spinal cord, by Harold F. Buchstein. Autonomic nervous system, by Harold F. Buchstein. Abdominal wall and hernia. Peritoneum. Stomach and duodenum. Small and large bowel. Biliary system, by George S. Bergh. Pancreas. Surgery of the spleen. Outline of urology, by C. D. Creevy. Index.

Note: This book was written to give the beginning student a basic outline of the important points which he must master, and the advanced student a review by means of which he will be able to recall the more extensive works with which he should have had contact. Operative surgery has not been included. Instead, emphasis has been laid on the fundamental principles of surgery, the recognition of surgical disorders, and goals to be sought in the treatment of various diseases. In general, the book reflects the attitude and practices of the Surgical Department of the University of Minnesota Medical School.

SURGICAL CLINICS OF NORTH AMERICA

Symposium on recent advances in surgery. Philadelphia: W. B. Saunders Company, 1944. 272 p. illus. 24 cm. (Surgical clinics of North America, December, 1944) Cloth, \$16.00; paper, \$12.00 per year of six consecutive numbers.

2603a

Contents: From hospitals of Philadelphia: Introduction, by Jonathan E. Rhoads. Surgical aspects of peptic ulcer, by E. L. Eliason and L. W. Stevens. Penicillin in surgery, by William L. White. Use of specially prepared gelatin solution as plasma substitute, G. Everett Koop. Use of "sump" drain in peritoneal infection, by W. Emory Burnett, George P. Rosemond, and H. Taylor Caswell. Refrigeration anesthesia, by C. M. Shaar, D. T. Jones, and T. R. Lehan. Management of compound injuries of the skull, by Calvin M. Smyth, Jr., and T. A. Ranieri. Pre- and postoperative care of patients with lesions of stomach and duodenum, by Harold A. Zytel. Hypertension in a case of hyperthyroidism associated with acromegaly, by Frederick A. Bothe. Radical pancreatoduodenal resection for adenocarcinoma of head of pancreas, by William H. Erb. Pharmacological basis for preoperative medication, by Robert D. Dripps. From Walter Reed General Hospital, Washington, D.C.: Penicillin in treatment of surgical infections of central nervous system, by J. E. Hamilton, B. B. Whitcomb and Barnes Woodhall. Treatment of wounds of bladder and urethra, by Lloyd G. Lewis. Recent observations concerning treatment of chest wounds, by Brian Blades. Super-voltage (one million volt) Roentgen therapy at Walter Reed General Hospital, by Milton Friedman. Amputations: a comparison of end-bearing and ordinary stumps, by T. Campbell Thompson. From U. S. Naval Hospital, Bethesda, Maryland: Management of the head injury patient, by C. Hunter Shelden, Robert H. Pudenz and Winchell McK. Craig. Logical methods for anesthesia, by John W. Pender. Choice of pedicle flaps for plastic and reconstructive surgery, by George V. Webster. Problems presented by foreign bodies, by Howard R. Ives and W. Warren Sager. Current practice in treatment of thoracic empyema, by Edward M. Kent and W. Warren Sager. Index.

Note: *Surgical clinics of North America* is published six times a year. Each issue is devoted to a symposium on a topic of current interest. The present symposium was prepared by surgeons associated with leading hospitals and teaching institutions of Philadelphia and medical officers of the U. S. Army's Walter Reed General Hospital, Washington, D.C., and the U. S. Naval Hospital, Bethesda, Maryland. Its purpose is to bring to the surgeon and practicing physician a concise and practical coverage of latest developments in the diagnosis and treatment of surgical conditions frequently met in practice. The articles are concerned only with practical aspects. The symposium is well illustrated, many of the pictures showing actual techniques. References are given at the end of each clinic.

THOREK, MAX

Modern surgical technic. Three complete volumes printed as one, with 2174 illustrations, originals principally by W. C. Shepard; with a

foreword by Donald C. Balfour. Philadelphia: J. B. Lippincott Company, 1942. 511 p. illus. (part col.) 26 cm. \$12.00. 2604

Contents (abridged): Volume I, Part I, General operative considerations: The surgeon and his art. The surgeon and the patient. Postoperative considerations. Operating pavilions and the operation in general. Sterilization of surgical supplies. Anesthesia. Part II, Surgery of the head and neck and plastic surgery: Surgery of the scalp and pericranium. Surgery of the skull and brain. Surgery of the ears and adjacent structures. Surgery of the face. Surgery of the sinuses and tonsils. Surgery of the lips, tongue, and lymph nodes. Surgery of salivary glands, jaws, upper lip, cheek, orbit and eye, nose, neck, and cervical endocrine glands. Volume II, Part III, Surgery of the nerves, vessels, bones: Surgery of the peripheral nerves, sympathetic nervous system, vascular system. Orthopedic surgery. Amputations. Fractures. Part IV, Surgery of the breast and chest: Surgery of the breast, bronchi, thorax, pleurae, lungs, pulmonary artery, esophagus, heart and pericardium. Volume III, Part V, Surgery of the abdomen: Methods of opening and closing the abdomen. Surgery of the stomach, intestines, liver, gallbladder, biliary passages, pancreas, spleen. Hernia. Part VI, Surgery of the pelvic region: Gynecologic operations. Surgery of the genito-urinary organs. Indexes.

Note: This one-volume war edition was prepared to save space and weight for the medical officers of the armed forces. It contains the identical material of the original three-volume work. The 2045 pages have been reproduced by photolithography in a reduced size, with four pages of the original printed on one page of the war edition. The aim of the work is to supply succinct information on surgical operations and latest surgical technique including a sufficiently detailed description of each procedure in commonly performed operations. It was intended, in its original format, primarily for students, general surgeons, and general practitioners who are occasionally called upon to perform emergency operations. There is no bibliography.

THOREK, MAX

Surgical errors and safeguards, with a foreword by Sir Hugh Devine, and a chapter on legal responsibility in surgical practice, by Hubert Winston Smith. Fourth edition, completely revised. 794 illustrations, many colored. Philadelphia: J. B. Lippincott Company, 1943. 1085 p. illus. (part col.) 26 cm. \$15.00. 2605

Contents: Errors and safeguards in connection with surgical operations in general. Failures in surgery from general causes within the patient himself. Surgical failures due to defective instruments and foreign bodies left within the body. Errors and safeguards in: blood transfusions; plastic surgery; electrosurgery. Dangers and safeguards in operations on: the head, region of the neck, thorax and breast, abdomen in general, stomach, intestine, liver, biliary system, pancreas and spleen, hernia; urinary tract and male genitalia, in gynecologic operations, extremities and other orthopedic conditions, spine and spinal cord. Legal responsibility for surgical practice (based on legal doctrine in the United States and Great Britain). Index.

Note: In this volume the author discusses methods of foreseeing and avoiding errors in surgical practice, and he records his own errors and those of other surgeons. In this respect the book represents a compendium of the experiences of surgeons throughout the world. Warning is given of danger points in surgical procedures, weaknesses in diagnosis are exposed, and numerous other surgical experiences are described. This book is intended especially for the younger surgeons. Much revision of the present edition has been necessary, and the following new chapters have been added: Errors and safeguards in plastic operations, and Errors and safeguards in electro-surgical operations. The section on Medical-legal aspects of surgical practice, by Hubert Smith, is also new.

THORNDIKE, AUGUSTUS

A manual of bandaging, strapping and splinting. Illustrated with 117 engravings. Philadelphia: Lea & Febiger, 1941. 144 p. illus. 17 cm. \$1.50. 2606

Contents: Part I, The dry sterile dressing for clean wounds. Part II, Septic wound dressing. Part III, Sprains, strains and contusions. Part IV, Dislocations and emergency splinting. Part V, Transportation of fractures. Part VI, The use of plaster of paris and similar bandages in splinting.

Note: This manual demonstrates the proper technique of dressing, bandaging, and splinting. It emphasizes the principles of support, elevation, immobilization, and gentle compression. It is valuable to the young surgeon, the medical student, nurse, interne, and to laymen interested in first aid.

WARBASSE, JAMES PETER, AND CALVIN MASON SMYTH, JR.

Surgical treatment; a practical treatise on the therapy of surgical diseases. Second edition, thoroughly revised and reset. Philadelphia: W. B. Saunders Company, 1937. 3 v. and separate index v. totalling 2617 p. illus. (part col.) 25 cm. Per set, \$35.00. 2607

Contents (abridged): Volume I. General principles. Asepsis and antisepsis. Surgical materials, preparation and sterilization. Anesthesia and anesthetics. Wounds. Inflammations. Surgical fevers and infections. Fistulas and sinuses, ulceration and gangrene. Nutritive disturbances and endocrinopathies. Tumors. Blood and blood vessels. Lymphatic system. Diseases of bones. Fractures. Dislocations. Diseases of joints. Operations on bones and joints. Muscles, tendons, fasciae and bursae. Skin and its appendages. Nerves. Index. Volume II. Treatment of injuries and diseases of the head. Spine. Neck. Thorax. Breast. Abdomen. Index. Volume III. Treatment of hernia. Rectum and anus. Appendix. Liver and gallbladder. Genito-urinary organs. Female generative organs. Upper extremities. Pelvis. Lower extremities. Amputations. Plastic and cosmetic surgery. Injuries of newborn. Electricity and radiation in surgical treatment. Injuries from electric currents, radiation, and gas poisoning. First aid to the injured. Bandaging. Economics of surgical treatment. Index.

Note: This set of books was designed for the use of general surgeons and practitioners and also for those in special fields of practice who feel a need for a general work. It is devoted entirely to treatment, gives the detailed surgical technique and, in addition, covers the nonoperative treatment of diseases. Special emphasis has been placed on disorders of the most frequent occurrence. 2486 illustrations on 2284 figures—59 in colors—are distributed throughout the three volumes, most of them being of good size and concerned with step-by-step surgical procedure. Each volume contains its own table of contents and index. The separate desk index volume is a master reference to all three volumes.

YEAR BOOK OF GENERAL SURGERY

The 1944 Year book of general surgery. Edited by Evarts A. Graham. Chicago: The Year Book Publishers, Inc., 1944. 736 p. illus. 18 cm. \$3.00. 2608

Contents: Anesthesia and analgesia. Asepsis and antisepsis. Operative technic. Military surgery. Wound healing and pathologic complications. Tumors. Blood vessels. Bones. Fractures. Scalp and skull. Brain and meninges. Face and mouth. Neck. Thyroid. Mammary. Chest. Surgery of pulmonary tuberculosis. Heart and pericardium. Abdominal surgery. Peritoneum, mesentery and omentum. Esophagus. Stomach and duodenum. Small intestine. Vermiform appendix. Large intestine. Hernia. Liver. Gallbladder and bile ducts. Pancreas. Spleen. Spine and cord. Upper extremity. Lower extremity. Subject index. Index to authors.

Note: International advances in major and minor surgery are reported in this illustrated annual digest through abstracts of articles chosen each year by the editor from the clinical-scientific periodicals of 13-16 countries. Abstracts are made under the editor's direction, and emphasis is laid on clinical aspects—diagnosis, differential diagnosis, operative technique, post-operative management. A representative issue of this Year book presents 154 diagnostic measures and 295 operative and treatment procedures applying to 186 disease conditions. Surgical procedures are set off in identifiable type as are the editor's comments which follow many articles. A majority of the illustrations depict technique.

Anesthesia

ADAMS, RICHARD CHARLES

Intravenous anesthesia. New York: P. B. Hoeber, Inc., 1944. 663 p. illus. 24 cm. \$12.00. 2609

Contents: Historical considerations. General consideration. Technic. Comparison of various agents and their action. Chloral hydrate. Hedonal. Ether. Isopral. Paraldehyde. Magnesium sulfate. Morphine. Alcohol. Avertin. Intravenous local anesthesia. Intra-arterial local anesthesia. General consideration of the derivatives of barbituric. Somnifene. Allylisopropyl barbituric acid (alurate). Phenobarbital sodium. Dial. Pernostan. Sodium amytal. Pentobarbital sodium. Evipal soluble. Pentothal sodium. Miscellaneous derivatives of barbituric acid. Analeptics. Use of intravenous anesthesia and the barbiturates in military surgery. Index.

Note: A practical manual for the physician on how and when intravenous anesthesia should be used, and a complete review of the literature. Clinical interpretation is stressed throughout. Dosage and method of administration for each drug, phenomena of induction and maintenance, and systemic effects are presented. The views of many anesthetists and surgeons who have used this method extensively are objectively considered. Of great importance is the thorough evaluation of the barbiturates, particularly of pentothal sodium, the most satisfactory and most extensively used intravenous anesthetic known today—which has been employed by Dr. Adams and his Mayo Clinic associates in some 50,000 cases. Methods and agents for use of the specialties (orthopedics, gynecology, ophthalmology, obstetrics, psychiatry) as well as for general surgery and medical conditions have been weighed by the author.

ADRIANI, JOHN

The pharmacology of anesthetic drugs; a syllabus for students and clinicians. Second edition. Springfield, Ill.: Charles C. Thomas, 1942. 86 p. illus. 27 cm. \$3.50. 2610

Contents: Effects of physical and chemical properties on pharmacological activity. Absorption and elimination. General systemic effects. Disturbances of respiration. Gaseous agents. Volatile agents. Aliphatic non-volatile agents. Barbiturates. Local anesthetics. Opiates. Non-anesthetic drugs used in conjunction with anesthesia. Inorganic gases used in conjunction with anesthesia. Some clinical considerations. Glossary. Atomic weights and conversion factors. Usual doses. Qualitative tests. Bibliographic index. Subject index.

Note: An illustrated digest of fundamental facts about the properties, actions, and techniques of administration of drugs in current use. The data are compiled from periodicals, textbooks, and other sources in medical and scientific literature and represent the views of numerous observers.

CLEMENT, FREDERICK WALTER

Nitrous oxide-oxygen anesthesia; McKesson-Clement viewpoint and technique. Illustrated with 70 engravings. Philadelphia: Lea & Febiger, 1939. 274 p. illus. 24 cm. \$4.00. 2611

Contents: General considerations. The administration. Special technique. Special operations. Dental anesthesia and analgesia. Gas apparatus.

Note: This work presents the technique in the administration of nitrous oxide-oxygen anesthesia as developed by the late Dr. E. I. McKesson and by the author. They have brought this method of pain-relief to practically ultimate perfection and have extended the scope of nitrous oxide-oxygen anesthesia to include every operative procedure in the general surgical field. The book has been the result of years of painstaking study and clinical observations.

FLAGG, PALUEL JOSEPH

The art of anaesthesia. Seventh edition. 161 illustrations. Philadelphia: J. B. Lippincott Company, 1944. 491 p. illus. 23 cm. \$6.00. 2612

Contents (abridged): Part I, The classification of anesthesia: General anesthesia. Signs of anesthesia. Ether anesthesia. Ethyl chloride. Chloroform. Nitrous oxide. Nitrous oxide oxygen anesthesia. Nitrous oxide oxygen ether anesthesia. Ethylene. Unusual methods. Usual methods. Regional block. Method of administration. Part II, Factors incidental to the actual administration of the anesthetic. New agents and methods: Post-operative treatment. Duties of the nurse. Emergency anesthesia. Aspirators. Point of view of the patient. Improved technic for intratracheal anesthesia. Newer methods of artificial respiration. Basal anesthetics. Carbon dioxide absorption technic. Cyclopropane. Dental anesthesia and analgesia. Art of intubation. Causes of death in anesthesia. Pneumatology. The fire hazard in anesthesia. Con-

tinuous spinal anesthesia. Continuous caudal anesthesia in obstetrics. Bibliography. Index.

Note: A text and reference book intended as a basis upon which the student, interne, and general practitioner may acquire a more comprehensive knowledge of the proper administration of an anesthetic. Following a résumé and history of the entire field, general anesthesia is taken up in detail, classified as to stages, and outlined according to the various methods employed. Medication preliminary to anesthesia is emphasized, including the patient's physical ability to take anesthesia safely. The seventh edition incorporates new methods and substances developed in recent years and discusses the problems created by the war which involve the use of gas therapy and gas oxygen-ether.

GILLESPIE, NOEL ALEXANDER

Endotracheal anaesthesia. Madison: The University of Wisconsin Press, 1941. 187 p. illus. (part col.). 21 cm. \$4.00. 2613

Contents: The history of endotracheal anaesthesia. Advantages and disadvantages of the method. Insufflation endotracheal anaesthesia. Equipment and apparatus for intubation. Intubation. Miscellaneous technical considerations during maintenance. Sequelae of endotracheal anaesthesia and their influence on the choice of route. Practical applications of endotracheal anaesthesia. Uses of intubation for purposes other than anaesthesia. Bibliography. Index.

Note: For all medical men concerned with the administration of anesthetics. Deals with a method that is becoming ever more widely recognized, both in the United States and abroad, as the solution of many difficulties that have long faced the anesthetist. The author has assembled the main historical and practical facts pertaining to the endotracheal technique. He describes lucidly and explicitly the propriety of its use under different circumstances and the considerations that make for the safety and comfort of the patient. For the newcomer to anesthesia the book will serve as a foundation upon which to build a sound clinical judgment of the method and the necessary skill in its application.

GUDEL, ARTHUR ERNEST

Inhalation anesthesia; a fundamental guide. New York: The Macmillan Company, 1937. 172 p. illus. 22 cm. (Macmillan surgical monographs, E. C. Cutler, editor) \$3.00. 2614

Contents: The mechanism of inhalation anesthesia. Stages of anesthesia. Signs of anesthesia. Depth of anesthesia required for control of surgical reflexes, depth of anesthesia necessary for various surgical procedures, potency of the various anesthetic agents. The mechanism of various anesthetic requirements, the preparation of the patient, the selection of the anesthetic agent. Accidents due to changes in blood pressure during anesthesia. Ventricular fibrillation. Central respiratory failure. Accidents due to peripheral respiratory interference, nitrous oxide in obstetrics, breath-holding, pharyngeal spasm, laryngeal spasm, tongue swallowing. Aspiration of debris. Miscellaneous accidents. Cyanosis. Anesthetic explosions. Selected references. Index.

Note: A practical, concise guide to procedures and problems of anesthesia, for physicians and nurses, medical students and teachers, and dentists, this work includes such physics and physiology as are necessary to make the mechanisms, signs and reactions in anesthesia understandable. An original outline showing the ideal depths or planes of anesthesia for all common surgical operations is a notable feature.

JONES, GEORGE WILLIAM, AND OTHERS

Explosion hazards of combustible anesthetics, by G. W. Jones, R. E. Kennedy, and G. J. Thomas. Washington, D.C.: Government Printing Office, 1943. 47 p. illus. 23 cm. (United States. Bureau of Mines. Technical paper 653) Paper, \$0.15. 2614a

Contents: Introduction. Factors conducive to explosions. Limits of inflammability. Inflammability of anesthetic mixtures. Discussion of results. Clinical investigations. Sampling of anesthetic mixtures. Analyses of anesthetic mixtures. Explosibility of anesthetic mixtures. Summary.

Note: A brief analysis of the causes of explosions and fires in operating rooms in hospitals due to the use of combustible anes-

thetics. The report summarizes the laboratory and clinical investigations carried out by the Bureau of Mines, the St. Francis Hospital of Pittsburgh, and a committee from the University of Pittsburgh School of Medicine relative to the inflammability of various gaseous anesthetic mixtures.

LUNDY, JOHN SILAS

Clinical anesthesia: a manual of clinical anesthesiology. With 266 illustrations. Philadelphia: W. B. Saunders Company, 1942. 771 p. illus. (part col.) 24 cm. \$9.00. 2615

Contents (abridged): Choice of anesthetic agents and methods. Anesthesia by use of local anesthetic agents. Special methods of local and regional anesthesia. Technic of spinal puncture and of single dose spinal anesthesia. Instructions to physicians, dentists, nurses, and assistants; equipment and drugs used in anesthesiology. Stages and signs of general anesthesia. Care and medication preliminary and subsequent to operation under general anesthesia. Volatile agents used for general anesthesia. Gaseous anesthetic agents used for general anesthesia and for respiratory support. Intratracheal or endotracheal anesthesia. Intrapharyngeal anesthesia. General anesthesia in dentistry. Inhalation anesthesia in obstetrics. Intravenous anesthesia. Rectal or oral instillation. Balanced anesthesia. Anesthesia for nonsurgical conditions. Venipuncture. Intravenous therapy. Resuscitation. Records and statistics. Chemical basis of efficacy and toxicity of local anesthetics. Chemistry of analgesics and general anesthetics. Chronology of events relating to anesthesiology and allied subjects. Conversion tables of weights and measures. List of equivalent names, books, serials and theses. Appendix. Index.

Note: In preparing this book, the author took into account the needs of not only specialists in the use of anesthetic agents, but the practicing physician and dentist, the surgeon, and also the medical officer in the armed forces. In taking up all kinds of anesthetics and technique of application, the author has aimed at providing a guide which will not only tell and show how to use each one, but also where and when not to use it. Procedures and results are based on the author's experience at the Mayo Clinic and also on that of other authorities recognized for their work in this field. The chapter on choice of anesthetic and methods used is pointed out especially, since here the diseases of each region are given alphabetically with instructions on which anesthetic is indicated for each particular disease and how to use it under the conditions present. There are 266 illustrations, most of which show actual technique. In addition, there are 50 tables which highlight in quick reference style essential data such as choice, indications, contraindications, solutions and kind of needle, signs, safe dosage, physical and pharmacologic properties of inhalation anesthesia, transfusions, and untoward reactions according to blood groups, etc.

NATIONAL RESEARCH COUNCIL. SUBCOMMITTEE ON ANESTHESIA

Fundamentals of anesthesia, an outline. Chicago: American Medical Association Press, 1942. 217 p. illus. 23 cm. \$2.50. 2616

Contents (abridged): Records: Clinical, military practice. Physiological considerations: Transport system, want of oxygen and excess of carbon dioxide, treatment of respiratory obstruction, artificial airways. Pharmacologic considerations: Opium derivatives, barbituric acid derivatives, tables of anesthetic drugs, physical signs, stages of anesthesia. Relief of pain: General anesthesia, oral and subcutaneous, rectal, intravenous, inhalation. Local anesthesia: Procaine hydrochloride as model, symptoms and signs of toxicity, prophylaxis and treatment of reactions, technics. Special technics: Analgesia, anesthesia for operations within the respiratory tract, cranial cavity, peritoneal cavity, pleural cavity. Complications: Prophylaxis and treatment for: Operative complications—apprehension, coughing, vomiting, laryngeal spasm, cyanosis, shock, etc. Postoperative complications—failure to recover consciousness, atelectasis, shock, etc. Special considerations: Respiratory emergencies, inhalation therapy, circulatory emergencies, heat control, convulsions and excitement, coma, poisoning, hazards, comfort and transport of the wounded. Appendixes: Compressed gases. Tables of equivalents and constants. Index.

Note: This volume is intended primarily for use in the instruction of medical officers as anesthetists. Since its emphasis is on the principles governing safety in the administration of depressant drugs, and the care of patients in a state of respiratory or circulatory depression, it may prove useful to a wider range of readers: surgeons, medical officers, wardmasters, and others.

Fractures

AMERICAN MEDICAL ASSOCIATION

Illustrated primer on fractures, prepared by the Special Exhibit Committee on Fractures in cooperation with the Committee on Scientific Exhibit of the American Medical Association. Fifth edition. Chicago: American Medical Association, 1943. 119 p. illus. 23 cm. \$1.00. 2616a

Contents: Emergency first-aid splinting for arm and leg. How to make plaster of Paris bandages. How to apply plaster of Paris bandages. Fractures of the neck of the femur. Intertrochanteric fractures of the femur. Fracture of the shaft of the femur. Fracture of the tibia and the fibula. Fracture of the ankle. Fracture of the clavicle. Fracture about the upper end of the humerus. Supracondylar fracture of the humerus. Fracture of both bones of the forearm. Colles' fracture. Dislocation of the shoulder joint. Compression fracture of the spine. Compression fracture of the os calcis. Fracture of the carpus, metacarpus and phalanges. Craniocerebral injuries. Active movement in the treatment of fractures. Massage in the treatment of fractures. Splints and accessories for the doctor's automobile. Splints and accessories for the doctor's office. Index.

Note: The handling of each of the fractures listed is discussed according to formula: the directions the fracture may follow (transverse, oblique, etc.); reduction; immobilization; immobilization by internal fixation (when appropriate); after-care. For fracture of the femur neck, a page on non-operative treatment is given. While illustrations showing different types of fractures have been included to clarify the more complicated types and to guide the surgeon to whom X-rays might not be available, the necessity for Roentgen examination of all fractures is stressed throughout.

CALDWELL, GUY ALVIN

Treatment of fractures. With 92 illustrations. New York: P. B. Hoeber, Inc., 1943. 303 p. illus. 24 cm. \$5.00. 2617

Contents: General considerations. Treatment of simple fractures. Treatment of compound fractures. Fractures of the hand. Carpal fractures and dislocations. Fractures of the lower extremity of the radius and ulna. Fractures of the shaft of the radius and ulna. Fractures of the head of the radius. Fractures of the olecranon process and dislocations of the elbow. Fractures of the humerus. Fractures of the clavicle and scapula. Fractures of the sternum and ribs. Fractures of the spine. Fractures of the pelvis. Fractures of the femur. Fractures of the tibia and the fibula. Fractures of the bones of the foot. Index.

Note: This book covers only the simplest methods of treating fractures, including proved techniques as well as new developments in internal fixation, and use of sulfonamides in prevention and treatment of infections. The preferred methods of splinting, the necessary drugs, the measures for early treatment, and the methods of transportation described include the results of recent military experience. The difference in management of cases in civilian practice and under military conditions is discussed in each instance. Special emphasis is placed on the treatment of compound fractures. The book is a compact manual for surgeon, army medical officer, and public health and industrial health officers. There are 92 specially prepared drawings.

CALDWELL, JOHN ALEXANDER

A manual of the treatment of fractures, with 76 illustrations. Springfield, Ill.: Charles C. Thomas, 1941. 150 p. illus. 23 cm. \$3.50. 2618

Contents (abridged): Varieties; symptoms; repair; union; methods of treatment. Anesthesia; X-ray; splinting. Compound or open fractures; treatment of compound fracture wounds. Fractures of bones of face; ribs; sternum. Clavicle—shaft and acromial end; scapula; shoulder joint; upper end of humerus; head of humerus—varieties; shaft of humerus. Lower end of humerus; head of radius. Radius and ulna. Colles' fractures; carpal bones; metacarpal bones; phalanges. Pelvis; head of femur; neck of femur; intertrochanteric fracture; hip joint. Shaft of femur; separation of lower femoral epiphysis; condyles of femur; removal of patella. Tibia and fibula; Pott's fracture; astragalus; os calcis; tarsal bones; metatarsals and phalanges. Fractures and dislocations of spine; skeletal traction; plaster fixation. Head injuries; spinal puncture. Delay and failure of union. Requirements for good bone surgery; aseptic technique; material used for fixation.

Complications and sequelae of fractures. First aid and emergency treatment of fractures. Appendix. Index.

Note: This manual was prepared for the use of medical students, house officers, and general practitioners. The author states that it is not his purpose to offer a substitute for the complete treatises already available in this field; instead he desires to point out what is considered good practice, and what may be called the errors of poor management. Throughout the volume an effort is made to emphasize principles of procedure rather than to describe specific methods; in other words, to help the reader "use his eyes, hands, and reason instead of applying some specific gadget."

COMPERE, EDWARD LYON, AND SAMUEL WALLACE BANKS

Pictorial handbook of fracture treatment. Chicago: Year Book Publishers, Inc., 1943. 351 p. illus. 21 cm. (The General practice manuals) \$4.25. 2619

Contents: General considerations of treatment of fractures and dislocations. Fractures and dislocations of the upper extremity, scapula and clavicle. Fractures and dislocations of the lower limbs. Fractures and dislocations of the trunk. Fractures of the face and skull. Index. Footnote bibliography.

Note: Pictorial demonstrations, supplemented by terse directions, cover the treatment of 136 types of fractures, dislocations, epiphyseal separations, sprains and associated conditions. Injuries of every part of the skeletal system are included, with technique of managing each type of trauma pictured. The text presents, for each fracture, (1) symptoms, when they are likely to be confusing, (2) diagnosis, when it offers difficulties, (3) technique of reduction, usually in both text and pictures, (4) type of traction, splinting or dressing, (5) period of immobilization, (6) details of post-reduction care, (7) complications, when they are most likely to occur, (8) in many instances, methods of dealing with malunion or non-union, indications for open reduction and alternative methods of reduction when they may be called for. Emphasis is placed on skeletal traction and internal fixation in the types of fractures for which the general surgeon should use those methods.

GECKELER, EDWIN OSCAR

Fractures and dislocations for practitioners. Third edition. Baltimore: The Williams and Wilkins Company, 1943. 361 p. illus. 23 cm. \$4.50. 2620

Contents: Part I, Fractures: General considerations. Emergency treatment. Fracture wounds. Reduction. Immobilization. Traction. Follow-up treatment. Bones of skull and face. Vertebrae. Pelvic bones. Sternum and ribs. Clavicle and scapula. Humerus. Elbow. Forearm. Wrist and hands. Femur. Knee. Bones of the leg. Foot and ankle. Part II, Dislocations: General considerations. Temporomandibular joint. Spinal and sacroiliac joints. Clavicle joint. Shoulder joint. Elbow joint. Wrist and hand. Hip joint. Knee joint. Ankle and foot.

Note: A short but complete textbook for students and doctors, emphasizing the fundamentals of treatment and condensing the subject of fractures and dislocations without the omission of important details. Only the most practical method for a condition is advised, and plaster-of-Paris technique is explained in detail as a universally practicable form of immobilization. The third edition contains new sections on emergency treatment and fracture wounds prepared from current war literature, and recent applications of chemotherapy in the treatment of traumatic wounds. Illustrated with numerous X-ray photographs and schematic drawings.

KEY, JOHN ALBERT, AND H. EARLE CONWELL

The management of fractures, dislocations, and sprains. Third edition. St. Louis: The C. V. Mosby Company, 1942. 1303 p. illus. 26 cm. \$12.50. 4th, 1946 2621

Contents (abridged): Part I, Principles and general aspects: General considerations. Repair of fractures. Principles of treatment. First aid in fractures and automobile injuries. Complications. Pathologic fractures. Compound fractures and war wounds. Dislocations. Workmen's Compensation Law affecting fracture cases. Medicolegal aspects. Part II, Diagnosis and treatment of specific injuries: Fractures of skull and brain trauma, by Edgar F. Fincher. Jaws and related bones, by James Barrett Brown. Spine. Hyoid, larynx, and tracheal cartilages. Thorax. Shoulder

girdle and shoulder. Shaft of humerus. Elbow. Forearm. Wrist and hand. Pelvis. Hip. Shaft of femur. Knee joint. Shafts of tibia and fibula. Ankle. Foot. Index.

Note: The purpose of this book is to furnish the student, general practitioner, and surgeon with a practical working guide in the management of the conditions with which it deals. The forms of treatment described are those employed by the authors, whether originated by them or adopted from other surgeons. In cases in which these subjects are important, after-treatment and the treatment of complications have been discussed and the rapid restoration of function has been emphasized. In this third edition the most extensive changes have been made in the sections devoted to fractures of the spine, humerus, hip, and foot. The chapter on compound fractures has been rewritten, largely as a result of the introduction of the sulfonamides in the treatment of these injuries, and a new section on war injuries has been added. The contributed chapters on fractures of the jaws and face, and on skull fractures and brain trauma have also undergone revision.

MAGNUSON, PAUL BUDD

Fractures. 317 illustrations. Fourth edition revised. Philadelphia: J. B. Lippincott Company, 1942. 511 p. illus. 23 cm. \$5.50. 2622

Contents: Fundamentals. Pathology and repair of fractures. Anatomical mechanism and physical equipment in the reduction of fractures. Equipment. Fractures and dislocations of the clavicle and scapula. Fractures about the shoulder. Fractures and dislocations of the humerus. Fractures about the elbow. Fractures and dislocations of the forearm and wrist. Injuries of the wrist and hand. Fractures of the ribs and costal cartilages, and sternum. Fractures of the neck of the femur. Fractures of the femur below the neck. Fractures of the femur in children. Fractures of the tibia. Fractures of the ankle and foot. Fractures and dislocations of the spine. Applied anatomy of the spine and cord. Regional fractures of the spine. Fracture-dislocations of the spine. Compression fractures of the spine. Fractures of the spinous, articular and transverse processes of the vertebrae. Fractures of the skull. Physical therapy in treatment of fractures. Exercise in the treatment of fractures.

Note: This book is intended to meet the needs of the physician who first sees the fracture, and an effort has been made to simplify the methods of treatment by approaching the problem of fractures from the standpoint of anatomy and physiology. The operative treatment has not been included except to indicate certain operative procedures for the skilled surgeon. Only the principles of united and malunited fractures are considered, and all the methods described have been tried in practice. Illustrated with numerous roentgenograms. The additions in the fourth edition cover first aid, transportation, early treatment of compound fractures, uses of sulfotherapy, and treatment of shock.

MAJOR, GLENN

Fractures of the jaws and other facial bones. With chapters on radiographic technic, by Lester M. J. Freedman, and war aspects of jaw fractures, by Arthur Dick. With 225 illustrations. St. Louis: The C. V. Mosby Company, 1943. 446 p. illus. 25 cm. \$7.50. 2623

Contents: General discussion of fractures. Diagnosis of fractures of facial bones. Displacement of the fragments. Emergency treatment in fractures of the facial bones. Anesthesia. General principles in the treatment of fractures of the facial bones. General types of fixation in fractures of the mandible and maxilla. Special fractures of the mandible. Special fractures of the maxilla. Postoperative care of fractures of the jaws. Complications of fractures of the maxilla and mandible. Dietetic management in fractures of the jaws. Fractures of the molar bone and zygomatic arch. Fractures of the nasal bones and cartilages. Radiographic technic, by Lester M. J. Freedman. War aspects of jaw fractures, by Arthur Dick. Medicological complications in fractures of the facial bones. References. Index.

Note: An attempt has been made in this text for medical and dental students and practitioners to stress the basic principles in the treatment of various fractures of the jaws. The various types of fixation apparatus advocated by numerous authors are intentionally omitted, and eponymic nomenclature has been avoided in so far as possible. The general types of immobilization have been described and more than one method of immobilization is offered for the great majority of fractures of the mandible and maxilla. Illustrated with drawings by the author and with roentgenograms of actual cases. There are 165 references cited in the bibliography.

ORR, HIRAM WINNETT

Wounds and fractures; a clinical guide to civil and military practice. Springfield, Ill.: Charles C. Thomas, 1941. 227 p. illus. 25 cm. \$5.00. 2624

Contents: Fundamental principles of fracture treatment. The operative treatment of fractures. The treatment of nonunion and malunion. Compound fractures with infection. Fractures involving joints. Nerve injuries in fractures. Fractures of the pelvis, spine, and hip. Fractures of the foot and hand. First aid, medical care, and physiotherapy. Conclusions. Index.

Note: Written by the originator of the plaster-of-Paris cast and the infrequent dressing method for compound fractures, the "Orr method." It shows how reduction and control of any fracture can be accomplished anywhere by the author's technique of pin fixation and the application of plaster of Paris. The procedures described have been adopted throughout the world in recent years.

SHAAR, CAMILLE MELEEK, AND FRANK P. KREUZ, JR.

Manual of fractures; treatment by external skeletal fixation. Philadelphia: W. B. Saunders Company, 1943. 300 p. illus. 23 cm. \$3.00. 2625

Contents: Introduction and objectives of treatment. Historical approach. Shock in fractures. Principles of Stader reduction and fixation splint. Pin seepage. Mechanical principles and method of application of Stader splint. Errors in treatment by external fixation. Delayed union and nonunion. Fractures of mandible, clavicle, humerus, radius and ulna, femur and pelvis, tibia and fibula, of os calcis. Compound fractures. Compound fractures with osteomyelitis. Old ununited fractures. Old fractures with malunion. Arthrodesis of joints. Bone grafts. Incidence of fractures in the service. Anesthesia and X-ray study. Stader splint and accessories. Appendix: Treatment of fractures at sea by skeletal traction. Antipendulum extension apparatus and fracture frame. Adjustable hammock for treatment of fractures of pelvis. Bibliography. Index.

Note: This manual was designed for the use of physicians desirous of studying and applying external skeletal fixation in the treatment of fractures. Its special purpose is to give medical officers of the United States Navy an authoritative guide in the use of a method found adaptable to many of their problems in time of war. While the principles and objectives of all methods of external skeletal fixation are covered, the major emphasis is on use of the Stader splint as experienced by the authors. The material has been presented with realization that the treatment is comparatively new and, therefore, effort has been made to anticipate and answer the questions of the inexperienced. Explanations are detailed in both text and pictures, showing such important matters as the one right method of drilling pin holes, telling how to measure and place the splint, giving disadvantages as well as advantages over other methods, indications, contraindications, etc. Of special significance are the 479 illustrations on 148 figures which include technique, X-ray views, "before and after" views, etc.

SPEED, KELLOGG

A text-book of fractures and dislocations covering their pathology, diagnosis and treatment. Fourth edition, thoroughly revised. Illustrated with 1140 engravings. Philadelphia: Lea & Febiger, 1942. 1106 p. illus. 24 cm. \$12.50. 2626

Contents: Treatment of fractures. Operative treatment of fractures. Dislocations. Fractures of the skull. Fractures of the bones of the face. Fractures and dislocations of the vertebrae. Fractures and dislocations of the clavicle. Fractures of the scapula. Fractures and dislocations of the ribs and costal cartilages. Fractures and dislocations of the hyoid bone and sternum, the laryngeal and tracheal cartilages. Fracture of the humerus. Dislocations of the shoulder. Fractures of the forearm bones. Dislocations at the elbow. Fractures of the carpal and metacarpal bones and phalanges. Dislocations of wrist, hand and fingers. Fractures and dislocations of the pelvis. Fractures of the femur. Dislocations at the hip. Fractures and dislocations of the patella. Fractures of bones of the leg. Dislocations at the knee. Fractures of the bones of the foot. Ankle and foot dislocations.

Note: A comprehensive work for medical college and post-graduate use. The methods of reduction and kinds of anesthesia

for the principal types of fractures are presented. The care of open fractures is particularly emphasized. Gunshot wounds, chest injuries, and spinal injuries are discussed. The text has been partly rewritten and many new illustrations have been inserted in this edition.

STIMSON, BARBARA BARTLETT

A manual of fractures and dislocations. Illustrated with 95 engravings. Philadelphia: Lea & Febiger, 1939. 214 p. illus. 20 cm. \$2.75. 2627

Contents: Part I, General considerations: Definition, classification and diagnosis of fractures. Bone repair in fractures. Symptoms and signs of fractures. Principles of treatment of fractures. Details of technique in treatment of fractures. Part II, The upper extremity: Injuries to the shoulder girdle. Injuries at the shoulder-joint. Fractures of the shaft of the humerus. Injuries at the elbow-joint. Injuries to the forearm. Injuries at the wrist. Injuries to the hand. Part III, The trunk: Injuries to the chest. Injuries to the spine. Injuries to the pelvic girdle. Part IV, The lower extremity: Injuries at the hip-joint. Fractures of the shaft of the femur. Injuries at the knee-joint. Fractures of the shafts of the tibia and fibula. Injuries at the ankle-joint. Injuries to the foot.

Note: This manual is intended not as an exhaustive treatise of its subject but as a handbook of general principles and their application to specific fractures. Offers the fundamental knowledge required of every practitioner without burdening him with the detailed information demanded of the expert.

WILSON, PHILIP D., EDITOR

Experience in the management of fractures and dislocations (based on an analysis of 4390 cases), by the Staff of the Fracture Service, Massachusetts General Hospital, Boston, under the general editorship of Philip D. Wilson. Philadelphia: J. B. Lippincott Company, 1938. 1036 p. illus. 26 cm. \$15.00. 2628

Contents (abridged): Fractures and dislocations of the phalanges and metacarpals, by Henry C. Marble. Fractures and dislocations of the carpal bones, by Edwin F. Cave. Fractures of the lower end of the radius, by Grantley W. Taylor. Fractures of the bones of the forearm, by Horace K. Sowles. Fractures of the head and neck of the radius, by Stephen G. Jones. Fractures of the olecranon, by Ernest M. Daland. Fractures and dislocations at the elbow, by Torr Wagner Harmer. Fractures of the shaft of the humerus, by Horatio Rogers. Fractures of the upper end of the humerus, by Sumner M. Roberts. Dislocation of the shoulder, by Horatio Rogers. Fracture of the shoulder girdle, by A. William Reggio. Dislocations of the clavicle, by Joseph S. Barr. Vertebral body fracture, by William A. Rogers. Fractures and dislocations of the cervical spine, by Sumner M. Roberts. Diagnosis and treatment of cranio-cerebral injury, by John S. Hodgson. Fractures of the facial bones, by V. H. Kazanjian. Fractures of the ribs, by Franklin G. Balch, Jr. Fractures of the pelvis, by Edward L. Young, Jr. Fractures and dislocations of the tarsal bones, by Philip D. Wilson. Ankle fractures, by George Adams Leland. Fractures of the upper end of the tibia, by Joseph S. Barr. Fractures of the patella, by Arthur W. Allen. Fractures of the lower end of the femur, by George W. Van Gorder. Fractures of the acetabulum, by Edwin F. Cave. Compound fractures and dislocations, by Ernest M. Doland. Index.

Note: The cases used as basic material in this comprehensive study fall into two categories: the serious injuries which necessitated hospital admission, and the minor injuries which could be safely treated in the emergency ward and followed in the outpatient department. The number of operative reductions was 382 or 8.7 per cent of the whole, and there were 99 hospital deaths in the material studied, nearly half of which were from head injuries. Each paper covers anatomical considerations, types of injuries studied, mechanism of injury, treatment, operative technique where indicated, summary of each case history with drawings from X-rays, and conclusions.

Surgery of the Abdomen

BOYCE, FREDERICK FITZHERBERT

The role of the liver in surgery. Springfield, Illinois: Charles C. Thomas, 1941. 365 p. illus. 27 cm. \$5.00. 2629

Contents: "Liver deaths" and the "hepatorenal syndrome". Autolytic peritonitis; an experimental and clinical problem. Tests of hepatic function. Studies in biliary tract disease by the quick hippuric acid test of liver function. The hepatic factor in thyroid disease. Studies of hepatic function in non-biliary and non-hepatic disease. The concept of latent hepatic dysfunction and the "liver weakening". The hemorrhagic diathesis in jaundice. Special therapeutic considerations based on the liver factor in surgery. Occlusion of the portal vein; experimental observations and clinical possibilities. Appendix: Physiology of the liver. Subject index. Name index.

Note: This monograph, which was awarded the quinquennial Samuel D. Gross Prize in 1940 by the Philadelphia Academy of Surgery, is characterized by a thoughtful and critical attitude towards the role of the liver in surgical disease. It is useful to surgeons doing biliary surgery in particular, and thyroid, renal and gastric surgery in general; to internists and to technicians who wish a guide to recently developed tests to make the patient safer for surgery.

CROSSEN, HARRY STURGEON, AND DAVID FREDERIC CROSSEN

Foreign bodies left in the abdomen; the surgical problems: cases, treatment, prevention; the legal problems: cases, decisions, responsibilities. With 212 illustrations including 4 color plates. St. Louis: The C. V. Mosby Company, 1940. 762 p. illus. (part col.) 26 cm. \$10.00. 2630

Contents: Presenting the surgical problem. Sponges lost in the abdomen: Detailed case records. Diagnosis and treatment. Prevention of the accident. Instruments left at abdominal operations. Drains lost in peritoneal cavity. Foreign bodies left in other operations. Swallowed articles in the abdomen. Deception and malingerer. Presenting the legal problem. Theories of recovery in sponge cases. Theories of defense in sponge cases. Statute of limitations. Other foreign body cases. Damages. Bibliography. Index.

Note: This rather exhaustive study is intended to emphasize to surgeons the danger of occurrence of the serious accident of leaving a foreign body in the abdominal cavity. The most practicable plan of treatment is offered for the various types of cases, attention is called to the difficulties of avoiding such accident under the many stresses of abdominal surgical work, and an effort is made to arouse interest in the serious study of the problems of prevention. Numerous case histories are described in detail, with recommendations for the prevention of each occurrence as well as the best plan for treatment and removal of the foreign body. The legal aspects of the general problem are presented and illustrated with actual court decisions in specific cases. The bibliography contains about 1000 references to the world literature of the subject.

IASON, ALFRED HERBERT

Hernia. Illustrations by Alfred Feinberg. Philadelphia: The Blakiston Company, 1941. 1325 p. illus. (part col.) 27 cm. \$15.00. 2631

Contents (abridged): The evolution of hernial surgery. Incidence of hernia in man. Classifications. Eponymic hernia. Anatomy and architectonics of anterolateral abdominal fasciae and muscles. Congenital defects of the anterior abdominal wall. Superficial architectural boundaries of the abdominal cavity. Deep architectural boundaries. Dynamics, kinetics, gravimetrics. Structural form of the anterolateral abdominal wall. Structures of the posterior wall. Myodynamics, fascial dynamics. The blood-vessels of the anterior abdominal wall. Indirect inguinal hernia. The etiology of direct inguinal hernia. Symptoms and diagnosis. The treatment of inguinal hernia. Femoral hernia and treatment. Preoperative and postoperative complications. Umbilical hernia. Median ventral hernia. Diaphragmatic hernia, and other forms. Compensable hernia and life insurance. Compensation laws. Index.

Note: A comprehensive study of the subject designed as a reference book for medical students, general practitioners, and surgeons, and as source material for the adjudication of questions of compensability for hernia disabilities. Emphasis is placed on the history of the evolution of operations for herniae, on the great importance of preoperative care, the evaluation of good and bad surgical risks, the importance of surgical anatomy, and the differential diagnosis and the standard operations. Special attention is devoted to the litigious question of compensable herniae.

NATIONAL RESEARCH COUNCIL

Abdominal and genito-urinary injuries. Philadelphia: W. B. Saunders Company, 1942. 243 p. illus. 24 cm. (Military surgical manuals. Vol. III) \$3.00. 2632

Contents: Abdominal wounds and modern warfare. General considerations. Study and estimation of status of patients with known or suspected abdominal injuries. General care of patient, including preoperative preparation. Selection of patients for operation. Preanesthetic preparation and anesthesia. Operative procedure. Wounds of specific structures and organs. Postoperative treatment. Complications. Results, mortality, and statistics. Preliminary survey of diagnosis of war injuries of genito-urinary tract in general. Injuries of kidney and ureter. War injuries of the bladder. Care of neurogenic bladder. Injuries of penis and urethra, of scrotum and contents, and of prostate gland and seminal vesicles. Do's and don't's. Index.

Note: The part of this manual on abdominal injuries was prepared by Ambrose H. Storck; the part on genito-urinary injuries was prepared and edited by the Subcommittee on Urology; both under the auspices of the Committee on Surgery of the Division of Medical Sciences of the National Research Council, Washington, D.C., in cooperation with the Surgeons General of the United States Army and Navy. Designed primarily for the military physician and surgeon, this manual will also appeal to the civilian doctor. It takes up such matters as collection and transportation of casualties, treatment of shock, control of hemorrhage, prevention of infection, significance of pain, nausea, vomiting, and other symptoms important in differential diagnosis. Instrumental as well as laboratory methods of diagnosis are included. There are 274 illustrations on 79 figures. References follow each chapter.

NISSEN, RUDOLF

Duodenal and gastrojejunal peptic ulcers; technic of resection. New York: Grune and Stratton, 1944. 150 p. illus. 22 cm. \$4.75. 2632a

Contents: Foreword. Preface. Part I, Duodenal ulcer: General considerations. Anatomic features. Technics of resection. Evaluation of procedures. Part II, Jejunal peptic ulcer: General considerations. Anatomic features. Two stage resection. Radical operation for marginal ulcer secondary to anterior gastro-enterostomy. Radical operation for marginal ulcer secondary to posterior gastro-enterostomy. Radical operation for marginal ulcer following gastrectomy. Gastrojejunalocolic fistula. Bibliography. Index.

Note: Mainly a book of drawings that illustrates certain surgical maneuvers and techniques. The brief text is designed to supplement and amplify the legends that accompany the illustrations. The author claims that 50% of all peptic ulcer cases submitted to surgery can be handled by the procedures described.

WANGENSTEEN, OWEN HARDING

Intestinal obstructions; a physiological and clinical consideration with emphasis on therapy; including description of operative procedures. Second edition. Springfield, Ill.: Charles C. Thomas, 1942. 484 p. illus. 25 cm. \$7.00. 2633

Contents (abridged): The effects of distension. Diagnosis in acute abdominal disorders. The recognition of obstruction. Guiding principles in the treatment of acute abdominal lesions. Indirect measures in the treatment of bowel obstruction. Decompression by application of suction to duodenal tubes in obstruction. Operation in bowel obstructions. The closed aseptic resection. Postoperative treatment. The mortality of acute intestinal obstruction. Congenital atresia of the intestine. Imperforate anus. Intestinal obstruction due to tumors and strictures of the bowel wall. Obturation obstruction. Fecal obstruction of the bowel. Intestinal obstruction due to compression of the bowel. Intestinal obstruction due to adhesions and bands. Intestinal obstruction due to external hernia. Intestinal obstruction due to internal hernia. Volvulus. Intussusception. Errors in development of the intestine giving rise to intestinal obstruction. Inhibition ileus (paralytic). Spastic ileus (dynamic obstruction). Intestinal obstruction due to vascular causes. Mesenteric thrombosis and embolism. Indexes.

Note: This treatise for surgeons, clinicians, and medical students is a digest of the writer's investigations and experience in the field of intestinal obstruction and attempts to set forth in a concise manner the important aspects of the therapeutic problem. The author stresses that the sterility of the peritoneum

must be preserved in all methods of treatment aimed at relief of the obstructions, and that escape of the obstructed intestinal content is synonymous with failure and death. Attempt has been made to integrate clinical and Roentgen evidence in the diagnosis of obstruction. The second edition incorporates a rearrangement of material and new techniques such as intestinal intubation with the Miller-Abbot tube and the new surgical procedures.

WATSON, LEIGH FESTUS

Hernia; anatomy, etiology, symptoms, diagnosis, differential diagnosis, prognosis, and the operative and injection treatment. Second edition. St. Louis: The C. V. Mosby Company, 1938. 591 p. illus. 26 cm. \$7.50. 2634

Contents: Historical introduction. General considerations of hernia. Complications of strangulation. Partial enterocoele. Hernial tuberculosis. Hernia and volvulus of the omentum. Fatty hernia. Local anesthesia in hernia operations. Inguinal hernia. Anatomy and etiology of inguinal hernia. Symptoms, diagnosis, prognosis, and treatment. Inguinal hernia in infants and children. Injection treatment. Femoral hernia. Umbilical hernia. Ventral hernia. Diaphragmatic hernia. Internal hernia. Lumbar hernia. Obturator hernia. Sciatic hernia. Perineal hernia. Sliding hernia. Hernia of the vermiform appendix. Hernia of Meckel's diverticulum. Hernia of the bladder. Hernia of the ureter. Hernia of ovary, Fallopian tube and uterus. Medicolegal aspects of hernia. Index.

Note: The object of this book is to present within reasonable space the most important features of the anatomy, etiology, symptoms, diagnosis, differential diagnosis, and prognosis of hernia, together with the best operative technique of modern surgeons. A considerable amount of space has been devoted to the anatomy of hernia. The author gives in detail the technique of the operation he uses for each variety of hernia, and other methods less generally used are outlined briefly. The outstanding change in the second edition is the inclusion of an extended treatment of the injection method for certain types of reducible hernia. Emphasis is also placed on the original Halsted operation for inguinal hernia by the silk technique.

Genitourinary Surgery

BARNES, ROGER WILLIAM

Endoscopic prostatic surgery. With 104 illustrations. St. Louis: The C. V. Mosby Company, 1943. 232 p. illus. 25 cm. \$6.00. 2635

Contents: History. Anatomy of the prostate. Pathology of prostatism. Examination of the patient. Indications for endoscopic prostatic surgery. Preoperative care. Selection of the anesthetic. Electric current modifiers. The Stern-McCarthy electrotome and its modifications. Technic with the Stern-McCarthy electrotome. Funch prostatectomy. Operative procedures associated with endoscopic prostatic surgery. Immediate complications. Postoperative care. Results and sequelae. Index.

Note: A monograph on the methods of transurethral prostatic resection, a comparatively new surgical method employing a highly technical procedure and more preparation and practical application than any other form of genitourinary surgery. The work is intended for urologists who have a small degree of training in this work but who have not had a sufficient amount of actual experience, as well as for trained surgeons who require more information on postoperative complications and sequelae. The author stresses the need of constant personal supervision of an experienced operator. The book is intended only as a supplement to such supervision. Short bibliographies follow each chapter.

DODSON, AUSTIN INGRAM

Urological surgery. With contributions by R. A. Berger, Douglas G. Chapman, Everett Idris Evans [and others]. With 576 illustrations. St. Louis: The C. V. Mosby Company, 1944. 768 p. illus. 25 cm. \$10.00. 2636

Contents (abridged): Anatomy of the urogenital tract. Diagnosis. Pre- and post-operative care. Excretory urography and cystography, by Laurence O. Snead. Radiation therapy, by Fred M. Hodges and R. A. Berger. Acid-base balance and fluid ad-

ministration, by Douglas G. Chapman. Blood transfusion, by Guy Winston Horsley. Anesthesia in urological surgery, by Everett Idris Evans. Surgical approach to the kidney. Congenital anomalies and their treatment. Surgical treatment of renal infections. Tuberculosis of the kidney and its treatment. Nephrop-tosis and its treatment. Renal calculi, hydronephrosis, cysts, tumors and their treatment. Nephrectomy. Operations on the adrenal gland. Surgical approach to the ureters. Congenital anomalies. Pyoureter and its treatment. Ureteral calculi, injuries of the ureter, tumors and their treatment. Surgical approach to the bladder. Injuries of the bladder and their treatment. Neuro-genic disease, surgical treatment. Tumors of the bladder. Con-genital anomalies of the male urethra. Surgical treatment of male and female urethra. Surgical conditions of the penis and scrotum and their treatment. Other surgical conditions. Endo-crinology and therapy of the prostate, by Linwood D. Keyser. Index.

Note: This text for advanced medical students, clinicians, and practicing surgeons presents and discusses those surgical problems arising in everyday urological practice. It is not intended as a complete treatise on the diseases of the genito-urinary organs, but rather as an aid in clinical work and as a surgical supplement to the standard books on principles and practice of urology. The subject matter is arranged on an anatomical basis so that individual problems can be referred to more easily.

NESBIT, REED MILLER

Transurethral prostatectomy. With 94 drawings illustrating technique, by William P. Dindusch. A chapter on the vascular supply of the prostate gland, by Rubin H. Flocks. Springfield, Ill.: Charles C. Thomas, 1943. 192 p. illus. 25 cm. \$7.50. 2637

Contents: Arterial distribution within the prostate gland; its role in transurethral prostatic resection, by Rubin H. Flocks. Armamentarium. The use of the resectoscope. Diagnosis and selection of operation for the treatment of prostatism. Anesthesia. Preoperative management. A technique of transurethral prostatectomy. Postoperative management. Complications of transurethral prostatectomy. Cancer of the prostate. Transurethral prostatectomy: evaluation. A history of transurethral prostatic resection. Bibliography. Index.

Note: Presents a detailed description of the techniques and methods employed at the University of Michigan Hospital in the management of prostatism by transurethral resection. It is generally recognized that the techniques described represent a great advance in surgery. Reproductions of 94 original drawings illustrate the methods. The bibliography contains 1032 references to the literature.

Surgery of the Hand

BRICKEL, ARTHUR CASIMIR JOHN

Surgical treatment of hand and forearm infections, with 166 text illustrations and 35 plates, including 10 in color. St. Louis: The C. V. Mosby Company, 1939. 300 p. illus. (part col.) 25 cm. \$7.50. 2638

Contents (abridged): Anatomical plates of hand and forearm. Radiopaque injections of the hand spaces. General principles of hand and forearm infections. Regional surgery. Human bites. Influence of diabetes and peripheral vascular disease upon infection. Medicolegal aspects of hand injuries. Index.

Note: This book is designed to correlate recent advances in our interpretation of the structure of the hand and forearm with the particular patterns exhibited by surgical infections in these parts and with the rationale of the surgical means employed to cure these infections or to minimize their results. The scope of the work excludes fractures, dislocations, non-surgical infections, etc. The plates depicting dissections of the hand and forearm from various points of view, the roentgenograms made after injection of radiopaque material, and the photographs form an important feature of the book. It is intended for the student, the general practitioner, and the surgeon.

BUNNELL, STERLING

Surgery of the hand. 597 illustrations. Phila-

delphia: J. B. Lippincott Company, 1944. 734 p. illus. (part col.) 26 cm. \$12.00. 2639

Contents: Part I, The hand: Phylogeny and comparative anatomy. The normal hand. Part II, Reconstruction of the hand: Examination. Reconstruction. Skin and flexion contractures. Bones. Joints. Nerves. Tendons. Intrinsic muscles. Loss of the thumb: methods of repairing. The arm in its relation to the hand. Part III, Injuries and infections: Fractures and dislocations. The hand in industry. Part IV, Other conditions: Congenital deformities. Vasomotor and trophic conditions. Tumors. Index.

Note: In the preface of this book the author points out that surgical reconstruction of the hand is a composite problem requiring the correlation of the various specialties—orthopedics, plastic and neurologic surgery. Trauma involves all types of tissue. As the problem is composite, the surgeon must also be, and must equip himself to handle any and all of the tissues. Primarily this book was designed to treat reconstruction alone; it has been expanded, however, to include a little of other aspects that seemed necessary. Main principles have been stressed over details, as any able surgeon can improvise his own methods of operating. There are some purposeful repetitions for emphasis where the subject applies in different chapters, but an effort has been made to keep the book concise. Although reference is made to important sources of information, no review of the historical literature has been attempted. The book is intended for all surgeons, but especially for industrial surgeons and those in the armed forces.

CUTLER, CONDUCT WALKER

The hand, its disabilities and diseases, with 274 illustrations. Philadelphia: W. B. Saunders Company, 1942. 572 p. illus. 24 cm. \$7.50. 2640

Contents: Anatomy. Acute infections. Specific and chronic infections. Burns, abrasions, contusions. Puncture wounds, foreign bodies. Incised wounds, lacerated wounds. Fractures. Dislocations. Amputations, compound fractures. Restoration of function. Repair and reconstruction. Deformities. Tumors. Constitutional diseases. Index.

Note: Prepared for the doctor in private practice, in military service, in industrial plants, in emergency departments, and in clinics, this book covers the medical and surgical aspects of infections, injuries, and abnormalities. Emphasis has been placed on the restoration of normal function. Treatment is covered extensively and includes the use of the sulfonamides, use of zinc peroxide, debridement, rest therapy, newer treatments of burns, systemic treatment of the patient, prevention of infections, and step-by-step surgical technique. Of particular interest are the hand manifestations given of constitutional diseases. References follow each chapter, and there are 385 illustrations on 274 figures.

Neurosurgery

BROCK, SAMUEL, EDITOR

Injuries of the skull, brain and spinal cord; neuro-psychiatric, surgical, and medico-legal aspects; contributors: Bernard J. Alpers, Abram Blau, Karl M. Bowman [and others]. Second edition. Baltimore: The Williams & Wilkins Company, 1943. 616 p. illus. 23 cm. \$7.00. 2641

Contents: General considerations in injuries of the skull, brain and spinal cord, by Samuel Brock. General pathological considerations in brain injury, by George B. Hassin. Osteomyelitis of the cranial bones. Post-traumatic epidural abscess. Septic thrombophlebitis of the dural venous sinuses, by Jefferson Browder. Concussion and contusion of the brain and their sequelae, by C. P. Symonds. Injury to cranial nerves including the optic nerves and chiasma, by W. Ritchie Russell. Massive intracerebral hemorrhage of traumatic origin, by E. D. Friedman. Extradural hematoma, subdural hematoma, subdural hydroma, by Max Minor Peet. Post-traumatic brain abscess. Post-traumatic meningitis, by Francis C. Grant. Gun shot wounds of the brain. Foreign bodies. Cerebral pneumocele. Traumatic cerebrospinal fluid rhinorrhea, by Leo M. Davidoff. Cerebral birth injuries, by Bernard J. Alpers. The post-traumatic convulsive and allied states, by A. R. Elvidge. Neuroses following head and brain injuries, by Paul Schilder. Psychotic states following head and brain injury in adults and children, by Karl Murdock Bowman and Abram Blau. Simulation (malingering) in relation to injuries of the skull, brain and spinal cord, by Moses Keschner.

Relationship of brain injury to other organic diseases of the brain, by I. S. Wechsler. Roentgenological aspects of fracture of the skull and injuries of the brain, by Cornelius G. Dyke. General pathological considerations in injuries of the spinal cord, by Charles Davison. Birth injuries of the spinal cord, by Bronson Crothers. Injuries of the spinal cord and nerve roots, by Charles A. Elsberg. Relationship of spinal cord injuries to other diseases of the spinal cord, by Thomas K. Davis. Effects of electric shock on the central nervous system. Compressed air illness (caisson disease). Cerebral fat embolism. Cerebral air embolism, by Clarence C. Hare. Medico-legal aspects of injuries of the skull, brain and spinal cord, by Moses Keschner. The electroencephalogram in cases of head injury, by Paul F. A. Hoefer. Index.

Note: This series of monographs was planned originally because of the increasing frequency of accidental injuries to the skull, brain, and spinal cord. The second edition includes lessons learned in military surgery, advances in therapy made with the use of the sulfa drugs, and a chapter on electroencephalographic findings in cases of head injury, based on studies made at the Neurological Institute of New York. The book is intended for neurologists, psychiatrists, neurosurgeons, and also for industrial physicians, officials of insurance companies, lawyers and judges, and persons with similar interests. Bibliographies are included in all sections.

DANDY, WALTER EDWARD

Intracranial arterial aneurysms. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1944. 147 p. illus. 24 cm. \$3.00. 2642

Contents (abridged): Introduction: Surgery's recent aids to diagnosis, incidence (sex, age, and race), types (mycotic, arteriosclerotic, congenital), ruptured and unruptured aneurysms, repeated hemorrhages, symptoms and signs, roentgenography, ventriculography, angiography, electroencephalography. Locality of aneurysms. The Circle of Willis. Preoperative procedures. Surgical treatment: aneurysms in the carotid canal, treatment of aneurysms of the intracranial internal carotid, operations on aneurysms of the anterior cerebral and anterior communicating arteries, surgical treatment of aneurysms of the middle cerebral artery, treatment of aneurysms of the posterior communicating artery, treatment of aneurysms of the basilar and vertebral arteries and branches, operative results, literature on surgical treatment, summary on treatment of intracranial aneurysms. Bibliography. Tables.

Note: Intracranial arterial aneurysms, always considered rare and almost impossible both of diagnosis and of treatment, are now added to the lengthening line of lesions that are curable by surgery. The nature of the cerebral aneurysm, its clinical symptoms, distribution, embryologic origin, and surgical treatment are discussed here by an authority in the field. A complete analysis of all aneurysms from the literature has been included, among which 20 cured cases, the first cures in surgery, are reported.

DAVIS, LOYAL EDWARD

The principles of neurological surgery. Second edition, thoroughly revised. With 154 engravings, containing 298 illustrations and 5 colored plates. Philadelphia: Lea & Febiger, 1942. 503 p. illus. 24 cm. \$7.00. 2643

Contents: Neurological diagnosis. Cranio-cerebral injuries. Intracranial tumors. Intracranial abscesses. Osteomyelitis, cysts, primary and metastatic tumors of the skull. Surgical lesions of the cranial nerves. Spinal cord injuries. Tumors of the spinal cord. Injuries of the peripheral nerves. Pain. Surgery of the autonomic nervous system. The surgical treatment of epileptiform seizures. Cervical rib, syringomyelia and traumatic arteriovenous aneurysm. Hydrocephalus and spina bifida. The surgical treatment of essential hypertension.

Note: This work is intended for the general practitioner. Primarily it is designed to enable him to give correct advice to his patient and to determine whether surgical treatment is indicated.

FREEMAN, WALTER JACKSON, AND JAMES W. WATTS

Psychosurgery; intelligence, emotion and social behavior following prefrontal lobotomy for mental disorders. With special psychometric and personality profile studies by Thelma Hunt.

Springfield, Ill.: Charles C. Thomas, 1942. 337 p. illus. 26 cm. \$6.00. 2644

Contents: Primitive trephining; operations on the sex organs; endocrine glands; focal infection; surgical shock. Early psychosurgery; Burckhardt, Puusepp. Egas Moniz and prefrontal leucotomy. The frontal lobes; significance of the frontal lobes; autonomic functions of the frontal lobe; experiments on lower animals; tumors of the frontal lobes; frontal lobe atrophies; softening of the frontal lobes; injuries to the frontal lobes; frontal lobectomy in man. Clinical observations on prefrontal lobotomy: operative technic, preoperative and postoperative care; the critical plane of section; observations on the operating table; postoperative condition; social behavior following operation; intelligence; personality profile studies; electroencephalographic and anatomic studies; consciousness of the self; summary of the frontal lobe syndrome after lobotomy. Prefrontal lobotomy and mental disorders; affective reaction types; the schizophrenic reaction type; obsessive states; other neuroses; results of prefrontal lobotomy. Prefrontal lobotomy and psychopathology: functions of the frontal lobes; mental mechanisms and the frontal lobes; the frontal lobes and the psychoses. References. Index.

Note: A foundation is established for the surgical treatment of mental disorders. The authors describe thoroughly their investigations of the frontal lobes, and evaluate their operation of prefrontal lobotomy. Their good as well as unfavorable results are presented. The type of patient for whom the operation may be suitable is indicated. Technique and management are described clearly. Documented by 80 critical case reports.

NATIONAL RESEARCH COUNCIL

Neurosurgery and Thoracic surgery. Philadelphia: W. B. Saunders Company, 1943. 310 p. illus. 24 cm. (Military surgical manuals. Vol. VI) \$2.50. 2645

Contents: Neurosurgery: Gunshot and other injuries of scalp, skull and brain, and spinal cord. Injuries of intervertebral disks in military service. Injuries of peripheral nerves. Infections of nervous system and its coverings arising from injuries of war. Appendix: Examination forms for peripheral nerve injuries. Thoracic surgery: General principles. Synopsis of treatment and disposition of thoracic injuries. Complications and sequelae of thoracic injuries. Operative surgery. Index.

Note: The discussion of neurosurgery was prepared and edited by the Subcommittee on Neurosurgery; the discussion of thoracic surgery was prepared and edited by the Subcommittee on Thoracic Surgery; under the auspices of the Committee on Surgery of the Division of Medical Sciences of the National Research Council, Washington, D.C., in cooperation with the Surgeons General of the United States Army and Navy. Guidance is given on first aid, transportation, control of hemorrhage, and care of bladder. Pre- and postoperative care, surgical and non-surgical treatment, and results and general management are covered. Advice is given on examination and diagnosis, and also the general principles of nerve repair including end-to-end suture, nerve crossing, and nerve grafting. There are 163 illustrations on 100 figures.

RAND, CARL WHEELER

The neurosurgical patient: his problems of diagnosis and care. Springfield, Ill.: Charles C. Thomas, 1944. 574 p. illus. 23 cm. \$4.00. 2646

Contents (abridged): The spine: Bilateral naso-orbital encephalocele. Spine and spinal cord injuries. Fracture dislocation of the third and fourth cervical vertebrae. Fracture and dislocation of the odontoid. Hematomyelia and syringomyelia. Stab wounds of the spinal cord. Epidural abscess of the spinal cord. Spinal cord tumors. Hemangiomas of the spinal cord. Head injuries: Gunshot wounds of the head. Skull fractures. Concussion and contusion, post-traumatic neuroses. Hysterical or functional neuroses. Cerebral fat embolism. Alcoholism and syphilis. Post-traumatic epilepsy. Traumatic pneumocephalus. Alterations in visual fields following cranio-cerebral injuries. The brain: Brain tumors. Medulloblastomas. Meningiomas. Pituitary tumors. Acromegaly. Cushing's syndrome. Tumors of the Gasserian ganglion. Glioma of the optic nerve. Acoustic neuromas and Menière's disease. Gliomas of the brain stem. Porencephaly. Brain abscess. Miscellaneous: Trigeminal neuralgia. Nerve injuries. Late ulnar palsy. Amputation stump neuromas. Malignant exophthalmos. Von Recklinghausen's disease. Essential hypertension. Raynaud's disease. Buerger's disease. Coccidioid granuloma of the central nervous system. Index.

Note: A treatise on the clinical aspects of about 54 neurosurgical subjects which are most useful to practitioners and stu-

dents. The section on brain tumors and related disorders is particularly detailed and may serve as a text in that field. There are about 120 original illustrations consisting mainly of gross specimens and X-ray plates. References are appended to each chapter.

WHITE, JAMES CLARKE, AND REGINALD H. SMITHWICK

The autonomic nervous system; anatomy, physiology, and surgical application. Second edition. New York: The Macmillan Company, 1941. 469 p. 24 cm. (The Macmillan surgical monographs) \$7.50. 2647

Contents: Foreword by Walter B. Cannon. Introduction. History of the development of knowledge of the involuntary nervous system. Anatomy of the autonomic nervous system. General physiology. Physiological action of drugs and hormones. Physiology of visceral pain. Methods of study. Sympathetic nerves in peripheral vascular disease. Extremities: bones, joints, and pain. Head, brain, meninges, and spinal cord. Heart and aorta. Hypertension. The lung. Gastrointestinal tract. Innervation of the urogenital tract. Cervical sympathectomies. Thoracic sympathectomies. Abdominal sympathectomies. Periaxillary sympathectomy and denervation of carotid sinus. Paravertebral injections of sympathetic rami and ganglia. Peripheral sympathectomy by crushing the mixed nerves in the lower extremity. Index.

Note: To make this book of the greatest practical value to general practitioners, surgeons, and clinical investigators, the authors have incorporated the fundamental contributions of the anatomist, the physiologist, the pharmacologist, the internist, and the neurosurgeon. In this edition, the original text has been more than half rewritten to include the latest developments. Of especial interest are new chapters on Raynaud's disease and the surgical treatment of hypertension, in which the authors have themselves made important contributions. A bibliography is given at the end of each chapter.

Ophthalmic Surgery

HUGHES, WENDELL LOCHEAD

Reconstructive surgery of the eyelids. St. Louis: The C. V. Mosby Company, 1943. 160 p. illus. 25 cm. \$4.00. 2648

Contents: Early development of skin grafting. Development of grafting without a pedicle. Variations of pedicle grafts. Thin dermo-epidermic grafts. General considerations regarding grafting. Reconstruction of the conjunctival layer. Reconstruction of tarsus. Transplantation of cilia and other miscellaneous lid structures. Case reports illustrating blepharopoeisis by the author's method. Description of movie films depicting cases and procedures mentioned in text. References. Index.

Note: This monograph describes and illustrates the repair of various deformities resulting from accidental or surgical absence of all or portions of the lower and upper lids. The work represents the evolution of methods for the reconstruction of new lids along with an historical review of the previous methods and a comprehensive survey of the literature on the subject. Numerous case histories are described and illustrated and there are 451 references to the literature.

SPAETH, EDMUND BENJAMIN

The principles and practice of ophthalmic surgery. Third edition, thoroughly revised. Illustrated with 556 engravings, containing 798 figures and 6 colored plates. Philadelphia: Lea and Febiger, 1944. 934 p. illus. (part col.) 24 cm. \$11.00. 2649

Contents (abridged): Anesthesia. General pathology of the orbit. Surgery of the lacrimal apparatus. Enucleation and allied operations. Complete symblepharon. The physiology of strabismus. The essentials of reconstructive ophthalmological plastic surgery: free skin epidermal and dermal grafts. Fat, fascia and muscle grafts. Mucous membrane grafts. Pedicle flaps. Surgical conditions of the lids. Anatomical factors connected with surgical procedures on the eyeball. Surgical conditions of the conjunctiva. Surgery of the sclera and the cornea. Surgery of the

iris and the anterior chamber. Etiology and differential diagnosis of cataract. The technique of the cataract operations. Complications of cataract surgery. Surgical indications in the glaucomas. The surgery of glaucoma in specific instances. The etiology and diagnosis. The surgical treatment of retinal separation. Traumatism of the globe and lids. Roentgen-ray and radium therapy. Indexes.

Note: A textbook for students and a reference book for practicing surgeons covering all surgical operations of the eye which are a part of the author's own practice as well as certain other procedures which are in general use. The book covers the possibilities, probabilities, and potentialities of the different types of operations. Various diseases, injuries and malformations of the eye, eyelid, and related muscles are analyzed from the surgical viewpoint, followed by a description of the recommended surgical technique and the treatment of possible postoperative complications. The third edition contains new material on traumatic conditions such as those resulting from battle wounds, new data on the physiology of squint, and a rewritten section on ptosis and its etiological factors. There are numerous photographs and drawings.

Orthopedic Surgery

ALBEE, FRED HOUDLETT, AND ROBERT L. PRESTON

Injuries and diseases of the hip; surgery & conservative treatment. With 100 illustrations, including 3 in color. New York: P. B. Hoeber, Inc., 1937. 298 p. illus. (part col.) 24 cm. \$5.50. 2650

Contents: Armamentarium of the surgeon for hip work. Surgical landmarks, preoperative preparation and incisions. Fractures. Dislocations. Tuberculous disease of the hip joint. Synovitis, infectious and gonorrheal arthritis, suppurative arthritis, including osteomyelitis and acute epiphysitis. Arthroplasty to overcome limited motion and ankylosis. Coxa Vara. Paralytic deformities. Osteoarthritis. Miscellaneous conditions. Index of personal names. Index of subjects.

Note: The chief aim of this monograph is to bring to the attention of the medical profession those surgical procedures which have stood the test of time and which have contributed most to the reclamation of cripples suffering from hip conditions. All the procedures which the author has personally used are included, together with those others which are commonly employed by surgeons of experience and mature judgment. Covers methods of treatment as well as a detailed description of operative technique. References are given in footnotes. Illustrated with roentgenograms and drawings.

GECKELER, EDWIN OSCAR

Plaster of Paris technic. Baltimore: The Williams and Wilkins Company, 1944. 220 p. illus. 23 cm. \$3.00. 2651

Contents: Forms of plaster of Paris used in surgery. General technic (bandage method). Application of plaster of Paris (bandage method). Errors and difficulties. Technic of pattern plaster. Spine. Shoulder and upper limb. Pelvis and lower limb. Plaster of Paris in war surgery. Plaster in war surgery—compound fractures and osteomyelitis. Plaster for injury and inflammation of soft tissues. The use of plaster of Paris for burns. Follow-up care. References. Index.

Note: The present work provides a practical working knowledge which will be of value in every-day practice and especially useful in the treatment of war injuries and burns. Orthopedic technique and the reduction of fractures have been intentionally avoided, as the scope of the work includes only the application of plaster of Paris.

LEWIN, PHILIP

The foot and ankle; their injuries, diseases, deformities and disabilities, with special application to military practice. With 304 illustrations; line drawings by Harold Laufman, M.D. Second edition. Philadelphia: Lea & Febiger, 1941. 665 p. illus. 24 cm. \$9.00. 2652

Contents (abridged): Embryology and anatomy of the foot and ankle. Physiology and biomechanics of the foot and ankle. Basic principles of foot and ankle disturbances. Congenital defects and deformities. Static defects and deformities. Claw-foot. Affections of the toes. Disturbances in the region of the heel. Bones of the foot and ankle. Affections of muscles, tendons, fasciae and bursae of the foot and ankle. Fractures of the bones of the foot and ankle. Dislocations of the foot and ankle joints. Other traumatic lesions—industrial—occupational—athletic injuries. Military aspects of the foot and ankle. Neurological lesions affecting the function of the foot and ankle. Circulatory disturbances of the lower extremities. Deficiency, metabolic and glandular diseases. Gangrene of the foot and ankle. Dermatological affections of the foot and ankle. Abnormalities and affections of the toenails. Foot hygiene and sanitation. The relation of back, pelvis, hip and thigh to the foot and ankle. Surgical technic as applied to the foot and ankle. Appendix.

Note: A guide for the student, general practitioner, industrial surgeon, and orthopedic surgeon. This second edition gives special attention to the military aspects of the subject, with discussion of the importance of blood plasma and serum in the treatment of shock, hemorrhage, burns and crushing wounds. Compound fractures and osteomyelitis are covered in detail.

NATIONAL RESEARCH COUNCIL

Orthopedic subjects. Philadelphia: W. B. Saunders Company, 1942. 306 p. illus. 24 cm. (Military surgical manuals. Vol. iv) \$3.00.

2653

Contents: Highlights in treatment of ununited fractures. Fundamental principles and roentgenologic evidence. Causes and pre-operative care. Mechanics of operation. Treatment after operation. Local anatomic treatment. Generalities and classification of injuries of the spinal column. Compression fractures. Fractures of special groups. Dislocations. Fracture dislocations. Treatment of compound fractures. Gunshot fractures. Treatment of compound fractures and accompanying wounds as modified by war conditions. Acute and localized hematogenous osteomyelitis. Chronic diffuse hematogenous osteomyelitis. Subacute infections of bone. Typhoid osteomyelitis. Chronic osteomyelitis. Special operations. References to osteomyelitis. Index.

Note: This manual was prepared and edited by the Subcommittee on Orthopedic Surgery of the Committee on Surgery of the Division of Medical Sciences of the National Research Council, Washington, D.C., in cooperation with the Surgeons General of the United States Army and Navy. Although designed to assist and guide the medical officer, the civilian doctor also will be interested in this manual because management and treatment are based on experience gained in World War II. Emphasis has been placed on a sure knowledge of underlying principles, although it is not within the scope of this manual to go into these in detail. The importance of considered judgment on the part of the doctor is stressed because of its vital part in the ultimate success of treatment. One hundred forty-seven illustrations on 79 figures show technique and pathology.

NISSEN, RUDOLF, AND ERNST BERGMANN

Cineplastic operations on stumps of the upper extremity. New York: Grune & Stratton, 1942. 88 p. illus. (part col.) 22 cm. \$3.75. 2654

Contents: History. Physiological and anatomical aspects. Canalization operations: The selection of suitable cases. Preparation of the stump. The operative technique. Plastic operation on the bone to lengthen the stump. The mechanism and construction of prostheses. The methods of cinetization employed by Vanghetti, Ceci, Putti and Bosch Arana. Comments on the present-day evaluation. Phalangization-operations of the forearm stump: The Krukenberg operation. Other methods of phalangization. Bibliography.

Note: A detailed description of the operative technique of cinetization or practical utilization of the muscular potential remaining in an amputation stump of the upper extremities so that this residual power may be used to activate an artificial limb in a manner approaching the original efficiency of the natural limb. Description and illustrations of artificial hands and forearms are given, with method of preparation of stump and attachment. Much of the material is based on the authors' earlier experience in the Sauerbruch Clinic in Germany.

SEVER, JAMES WARREN

Principles of orthopedic surgery. Third edition. New York: The Macmillan Company, 1940. 418 p. illus. 21 cm. \$3.25. 2654a

Contents (abridged): Psychological and economic significance of orthopedic problems. Education of crippled children. Social service in relation to orthopedic patients. Congenital deformities. Osteomyelitis. Scoliosis. Tuberculosis. Infantile paralysis. Obstetric paralysis. Physiotherapy. Internal derangements of knee. Fractures and dislocations. Arthritis. Syphilis of bones and joints. Bone tumors. Flat foot. Bradford abduction splint; knock-knee irons; bow-leg irons; valgus shoe; club foot brace; fixation splint-ankle; plaster casts, bandages, spicas and jackets; leather jackets; celluloid jackets; Thomas splint; caliper splint; splints for tuberculosis of spine.

Note: Especially written for schools of nursing and for physiotherapists, this textbook is based largely on techniques developed at the Children's Hospital, Boston. The third edition contains more illustrations and considerably more textual material.

SHANDS, ALFRED RIVES, AND RICHARD BEVERLY RANEY

Handbook of orthopaedic surgery. Illustrated by Jack Bonacker Wilson. Second edition. St. Louis: The C. V. Mosby Company, 1940. 567 p. illus. 23 cm. \$4.25. 2655

Contents: Introduction. Congenital deformities. Affections of growing bone. Affections of adult bone. Infections of bone exclusive of tuberculosis. Infection of joints exclusive of tuberculosis. Tuberculosis of bones and joints: The spine and pelvis. The extremities. Chronic arthritis. Special joints. Neuromuscular disabilities: Infantile paralysis. Involvement of brain and spinal cord. Involvement of peripheral nerves and of muscles. Tumors. Fracture deformities. Body mechanics and physical therapy. Affections of the spine and thorax. The low back. The hip. The knee. The ankle and foot. Affections of the neck and shoulder. The elbow, wrist, hand, and jaw. Bibliography. Index.

Note: This text and reference book for the medical student and general practitioner presents the fundamental facts and principles of orthopedic surgery in concise form. The book represents a consensus of opinion as recorded in orthopedic textbooks and literature, critically evaluated by 24 teachers from 18 different medical schools. Pen-and-ink drawings are used in place of photographs to emphasize the characteristic feature described. The extensive bibliography contains approximately 820 references to American and English articles. New material on developments of therapy technique is included in the second edition and there are additions to the bibliography.

STEINDLER, ARTHUR

Orthopedic operations; indications, technique and end results. Springfield, Ill.: Charles C. Thomas, 1940. 766 p. illus. 26 cm. \$9.00. 2656

Contents: I. General biological, anatomical, pathological, and clinical topics pertaining to orthopedic operations: Biology of functional restoration. Special surgical risks in orthopedic operations. Choice of anaesthesia in orthopedic operations. Special orthopedic pre- and postoperative care. Operative approaches. II. Technique of orthopedic operations: Surgery of tendons—tenotomy, tendon lengthening, tendon and stripping. Tendon suture, tendon plasties and tendon repairs. Tendon transplantations. Fascial surgery and ligamentous reconstruction. Capsular surgery. Orthopedic operations on bone. Surgery of joints. Joint surgery—arthrodesis and arthrorhisis. Surgery of the spinal column. Surgery of the bursae and tendon sheaths. Peripheral nerve surgery. Skin plasty operations. III. Indications and end results in specific orthopedic conditions: Operative indication and end results in congenital deformities. Traumatic deformities and disabilities. Operative indications in certain static and constitutional deformities. Operative indications and end results in inflammatory conditions. In chronic arthritis. Operations for deformities and disabilities due to disturbances of the nervous system. Operative indications in degenerative bone diseases. In tumors. In circulatory diseases. Index.

Note: The author's purpose in this book is to record what he has learned of the several phases of operative orthopedic treatment. Because he feels that plan and principle of procedure, technique of execution, and the final judgment rendered by definite end results, are inseparable and of equal importance, they are presented as equivalent. Thus indications and statistics are given equal prominence with the operative technique. The arrangement of the material is such that the reader is first made acquainted with the patient as a whole; he then learns the operative procedures on the several structures of the locomotor system, and finally, the precise clinical situations in which these operations are to be applied. If the text is used as a reference book, the clinical portion will be consulted first, and then the technique of the particular operative procedure advised. The

operative procedures have been carefully evaluated before being included in the text. The book is intended for use by students as well as surgeons.

YEAR BOOK OF INDUSTRIAL AND ORTHOPEDIC SURGERY

The 1944 Year book of industrial and orthopedic surgery. Edited by Charles F. Painter. Chicago: The Year Book Publishers, Inc., 1944. 432 p. illus. 18 cm. \$3.00. 2657

Contents: Part I, Orthopedic surgery: General considerations. Fractures, dislocations and sprains. Arthritis. Osteomyelitis. Miscellaneous inflammatory conditions. Poliomyelitis. Tumors and cysts. Lesions of the shoulder and upper extremity. Lesions of the spine. Lesions of the legs. Lesions of the feet. Operative technique. Part II, Industrial medicine and surgery: General problems. Infections. Toxicology. Miscellaneous specific hazards. Subject index. Author index.

Note: Each year this annual presents a critical analysis of an average of 230 articles selected from medical publications and periodicals of allied sciences of about a dozen countries. The material is presented in monographic form with documentation in footnotes. Clinical aspects of the subject are stressed, and a large number of diagnostic measures and treatment methods applicable to a variety of bone diseases and related conditions are discussed, including details of surgical procedures. A large proportion of the illustrations depict operative technique, showing points of pre- and postoperative management and diagnostic criteria. There is no bibliographic material in the current volume.

Plastic Surgery

BROWN, GEORGE VAN INGEN

The surgery of oral and facial diseases and malformations, their diagnosis and treatment, including plastic surgical reconstruction. Fourth edition, thoroughly revised. With 589 engravings, containing 1019 illustrations and 12 colored plates. Philadelphia: Lea & Febiger, 1938. 778 p. illus. (part col.) 24 cm. \$10.00. 2658

Contents: Anesthesia, hemorrhage, shock. Pathological dentition. Infectious diseases. Diseases of the mucous membrane of the mouth. Diseases of the nervous system affecting the buccal region. Diseases of bone. Diseases of the glands. Tumors. Diseases of the maxillary sinus. Diseases, tumors, and malformations of the tongue. Nasal deformities and diseases in relation to the maxillae. Malformations, diseases, and injuries of the lips. Harelip (cleft lip), cleft palate, and defects of speech. Principles of plastic surgical restoration. Skin grafting. Surgery of burn deformities and scar defects. Surgery of the adnexa of the eyes. Surgery of the external nose. Surgery of the external ear. Stomatoplastic operations not included in the descriptions of lip and mouth operations in previous chapters. Meloplasty (surgery of the cheek). Surgery of the neck. Surgery of the cutaneous nevi. Rhytidectomy. Congenital deformities of the skull with associated facial malformations.

Note: In this edition there is new material on plastic surgical reconstruction, and the other material has been revised. The illustrations include drawings of the operative steps employed in each condition. Bibliographies are included.

BROWN, JAMES BARRETT, AND FRANK McDOWELL

Skin grafting of burns; primary care, treatment, repair. 131 illustrations. Philadelphia: J. B. Lippincott Company, 1943. 204 p. illus. 26 cm. \$5.00. 2659

Contents: Preliminary survey. Early general care. Early local care. Spontaneous healing of burns. Preparation of wounds for skin grafting. Varieties of skin grafts. Application of thick split-skin grafts. Of free full-thickness grafts. Pedicle flaps. Contractures. Regional repairs of trunk and extremities. Of head and neck. Homografts. Faults of skin grafts. Final results in burned patients. Treatment of burns in World War II. Bibliography. Index.

Note: This work is intended to be a concise, yet sufficiently complete, description of the skin grafting of burned patients as it has been done in the authors' part of the surgical service of Washington University Medical School, Children's Hospital, and Barnes Hospital. The procedures recommended are those with which the authors have had first-hand experience, and no attempt has been made to record those with which they were not familiar.

ERICH, JOHN BERNHARDT, AND LOUIE T. AUSTIN
Traumatic injuries of facial bones; an atlas of treatment. In collaboration with Bureau of Medicine and Surgery, U. S. Navy. Philadelphia: W. B. Saunders Company, 1944. 600 p. illus. (part col.) 20 cm. \$6.00. 2660

Contents: General considerations in care of injuries of facial bones. Fractures of the mandible, maxilla, malar bones, nasal bones and nasal septum, of both jaws. Multiple fractures of facial bones. Defects of mandible which require a bone graft. Defects of facial bones which require restoration of contour. Construction of plaster head casts and description of appliances. Intra-oral and extra-oral methods of wiring. Construction of dental splints used in traumatic facial bone work. Index.

Note: Every surgeon concerned with face and head surgery will find this book of interest. It was written, however, especially for dental and plastic surgeons and otolaryngologists. Prepared in collaboration with the Bureau of Medicine and Surgery, United States Navy, it is directed particularly at the problems resulting from modern methods of warfare. The objective of the authors has been to clarify the complexities brought about by the mounting number of contradictory procedures being advocated, and to present a simple but detailed discussion, in outline form, of at least one acceptable form of treatment for every type of fracture and defect involving the mandible, maxilla, malar and nasal bones, and to include an efficient method of treating every combination of fractures of facial bones which the authors have encountered. An unique feature is the arrangement of the 333 original illustrations on left-hand pages of the book, with brief descriptions of the clinical considerations and treatment given on the facing pages.

FOMON, SAMUEL

The surgery of injury and plastic repair. Baltimore: The Williams & Wilkins Company, 1939. 1409 p. illus. (part col.) 26 cm. \$10.00. 2661

Contents: The operation. Tissue transplantation. Wounds. Burns. Fluid, salt, and acid-base balance. Shock. Anesthesia. Preoperative and postoperative management of the surgical patient. The cranium. The nose. The eyelid. The auricle. Maxillo-facial region. Lip. Cleft lip and cleft palate. Mandible. Salivary glands. Surgical affections of skin. Casts and prostheses. Index.

Note: A work designed primarily for the general practitioner, the surgeon, and specialist who have not made a particular study of this branch of the science. It presents a comprehensive collection of the best material on the subject from a survey of the available literature. The subject matter is divided into two main parts; the first section is devoted wholly to general principles. The second deals with the regional surgery of the exterior head. Emphasis is placed on the plastic surgery necessary in accident cases resulting from automotive transportation, and there is a very detailed treatment of regional surgery of the eye, ear, nose, and mouth, which contains information useful also to the ophthalmologist, rhinologist, and otologist. A general treatment of tissue transplantation on the entire body is also given. Each chapter is followed by lengthy bibliographies, and there are numerous photographic illustrations and diagrammatic drawings which convey to the reader the step-by-step technique.

NATIONAL RESEARCH COUNCIL

Manual of standard practice of plastic and maxillofacial surgery. Philadelphia: W. B. Saunders Company, 1942. 432 p. illus. 20 cm. (Military surgical manuals. Vol. 1) \$5.00. 2662

Contents: General considerations. Condensed discussions. Cheiloplasty. Meloplasty. Rhinoplasty. Blepharoplasty. Otoplasty. Defects of scalp and cranium. Cervicoplasty. Loss of hard palate and premaxillary portion of alveolar process. Gunshot wounds involving jaws. Fractures of jaws. Maxillofacial prosthesis. Local anesthesia. General anesthesia.

Plastic Surgery

Note: This manual was prepared and edited by the Subcommittee on Plastic and Maxillofacial Surgery of the Committee on Surgery of the Division of Medical Sciences of the National Research Council, Washington, D.C., in cooperation with the Surgeons General of the United States Army and Navy. It was planned to answer the needs of medical officers of the armed forces of the United States and to give them the techniques and procedures approved for use by their respective medical departments. The subject is covered from immediate care and management on the field of battle, on through final surgery to be performed in the hospital. Particular attention has been paid the illustration of step-by-step technique, there being a total of 899 illustrations on 259 figures. The civilian surgeon will find close parallels to many of his problems, especially those resulting from automobile and industrial injuries.

PADGETT, EARL CALVIN

Skin grafting, from a personal and experimental viewpoint. Springfield, Ill.: Charles C. Thomas, 1942. 149 p. illus. 26 cm. \$4.50. 2663

Contents: Historical. Homo and hetero-transplantation and parabiosis. Preservation and histology. Properties and technique of removal of the usual types of skin grafts. Special types of skin grafts. Calibrated intermediate skin grafts and the new "three-quarter thickness" skin graft. The grafting of sulci and cavities. Skin flaps versus skin grafts. General considerations pertinent to successful skin grafting. Skin grafting for specific lesions. Transplantation of mucosa and derma. Summary. Index.

Note: The author explains and illustrates his revolutionary procedures (now widely advocated and in use in military and civilian hospital services) that make it comparatively easy to remove a skin graft of any thickness, even from areas not previously available. The monograph and the methods described are based on clinical experiences covering a decade and a half. One hundred and sixty illustrations on sixty-five figures are included.

SHEEHAN, JOSEPH EASTMAN

Plastic surgery of the nose. Second edition, entirely rewritten, with 131 text illustrations, including seven in color, and fourteen full page plates consisting of one hundred and four photographs. New York: P. B. Hoeber, Inc., Medical Book Department of Harper and Brothers, 1936. 186 p. illus. (part col.) 26 cm. (Hoeber's surgical monographs) \$9.00. 2664

Contents: Anatomy and function. Typical and distinctive operations. Classified corrections at the three nasal levels. Losses. Skin grafts. Precaution, preparation and postoperative care. Index.

Note: This textbook for students and surgeons treats of the properties, behavior, and utility of skin grafts in nasal surgery and of the possibilities in readjustment and reconstruction of the displaced elements in nasal framework. Stress is laid on the accurate diagnosis of the conditions based on a thorough knowledge of the anatomy and function of the nasal bones, the bony and cartilaginous septum, and the upper and lower lateral car-

tilages. Operative procedures are outlined, covering those in which all the elements are present and those in which the tissues or other parts are missing. Illustrated with before-and-after photographs of actual cases. The material in the second edition retains the classification systems of the 1925 edition but describes new methods of corrective operations developed in clinical practice during the intervening eleven years.

THOREK, MAX

Plastic surgery of the breast and abdominal wall. With an introduction by Rudolf Nissen. With a foreword by J. Eastman Sheehan. Springfield, Ill.: Charles C. Thomas, 1942. 446 p. illus. (part col.) 26 cm. \$16.50. 2665

Contents (abridged): Anatomy—histology. Embryology. Histophysiology. Historical, developmental and comparative considerations. Physiology of the breast. Folklore surrounding the female breast. Racial characteristics. Congenital anomalies of the breast. Hypertrophies of the female breasts. Etiology, symptoms, course and complications of breast hypertrophies. Gynecomastia. Indications and contraindications for reconstructive surgery of the female breast. The technic of plastic operations for hypertrophy and pendulosity of the female breast. Scars and keloids. Amastia, hypomastia and inequality. Diseases of the nipples. Reconstructive surgery of the abdominal wall. Index.

Note: This book is built upon the author's experience of over 25 years of active general surgical practice. It presents, evaluates, and illustrates the various standardized procedures on plastic surgery of the breast and abdominal wall as advocated by many surgeons. It is augmented by the author's researches and original technique. Correlated subjects are discussed. Operative technique and details are carefully shown. Four hundred fifty-eight illustrations, including a number of color plates, clarify the text.

VAUGHAN, HAROLD STEARNS

Congenital cleft lip, cleft palate and associated nasal deformities. Illustrated with 259 engravings. Philadelphia: Lea & Febiger, 1940. 210 p. illus. 24 cm. \$4.00. 2666

Contents: Introduction—historical data. Embryology. Anatomy and physiology of the structures related to cleft lip, cleft palate. Etiology and incidence of cleft lip, cleft palate. Congenital clefts involving the face, lips, palate and alveolar border. The physiology of speech and deglutition. History record, anesthesia, operating room arrangements, instruments and materials for lip and palate operations. The surgical management of cleft lip. Secondary operations for cleft lip and associated nasal deformities. The surgical management of cleft palate. Secondary cleft palate operations to correct complete or partial operative failures. Lengthening the soft palate. A general consideration of velopharyngeal closure. Continued supervision of the cleft lip and palate patient.

Note: This work presents an evaluation of the various methods for the surgical treatment of cleft lip and cleft palate. It reflects the teaching and clinical experience of the author at the New York Post-Graduate Medical School of Columbia University. The operative steps for these conditions are described in detail.

DENTISTRY

ACADEMY OF STOMATOLOGY, PHILADELPHIA

Control of pain in dental practice; a symposium conducted by the Academy of Stomatology, Philadelphia: O. V. Batson, C. F. Schmidt, H. R. Churchill, and others. Edited under the direction of J. L. T. Appleton. Sixteen illustrations. Philadelphia: J. B. Lippincott Company, 1940. 195 p. illus. 21 cm. \$3.00. 2667

Contents: The gross anatomy of the innervation of the teeth, jaws, face, and related parts, by O. V. Batson. Innervation of the dentin from a histologic viewpoint, by H. R. Churchill. The physiology of pain, by G. P. McCouch. Psychologic and psychiatric aspects of pain control, by F. J. Braceland. Pharmacology of drugs used in control of pain, by C. F. Schmidt. Early history of pain control in dentistry, by Hermann Prinz. Physical factors in the production and control of dental pain, by A. B. Gabel. Drugs used in pain control in dentistry, and their applications, by J. E. Aiguier. Index.

Note: These papers are written for the general practitioner of dentistry and stress his needs and interests in the general problem of pain control in dentistry. The causes of dental pain are described through a study of the anatomy of the teeth and the sensory nerves of the dental area. Pharmacological methods for the control of pain are outlined, together with technique of injection of local anesthesia. There is some duplication of material among the various papers. Bibliographies follow four of the chapters.

AMERICAN DENTAL ASSOCIATION

Atlas of dental and oral pathology. Prepared at the Army Institute of Pathology of the Army Medical Museum, Office of the Surgeon-General, Washington, D.C., from material in the registry of dental and oral pathology. By James B. Mann, J. E. Ash, and Joseph L. Bernier. Third edition. Revised by Henry M. Goldman. Chicago: The American Dental Association, 1944. 310 p. illus. 27 cm. \$5.00. 2668

Note: A collection of about 150 case histories in morphologic pathology, arranged according to the various regions which come under the observation of general practitioners in dentistry and of oral and maxillo-facial surgeons. Each case is illustrated with photomicrographs and accompanied by clinical notes, pathology, comment, and selected references, but no treatment is indicated. Intended for busy clinicians who desire to review the pathology of their specialty, and for students who may not have the opportunity to study histologic material. The third edition contains new case histories and new illustrations.

APPLETON, JOSEPH LUKE TEASDALE

Bacterial infection, with special reference to dental practice. Third edition, thoroughly revised. Illustrated with 86 engravings and 5 plates. Philadelphia: Lea & Febiger, 1944. 498 p. illus. (part col.) 24 cm. \$7.00. 2669

Contents: Part I, Bacteriology: Bacteria. Relation of bacterial growth to oxygen supply. Anaerobiosis. Antibacterial action of chemicals. Surgical antisepsis and asepsis. Pure culture study of bacteria. Filtrable viruses. Part II, Infection: Nature of infection and general concept. How bacteria produce disease. Natural defenses. Humoral defenses. Cellular defenses. Inflammation. Resistance or immunity. Artificial active immunization. Characteristics of infection. Factors affecting susceptibility to infection. Types of infection. Dissemination and transmission of infecti-

ous agents, and carriers. Minimizing of infectious disease. Part III, Special infections of the oral cavity: Ecology of microorganisms of oral cavity. Streptococcus-pneumococcus group. Spirochetes of the mouth. Dental caries. Bacteriology of the dental pulp. Bacteriology of the apical and periapical region. Bacteriologic control of management of the pulpless tooth. Periodontal disease and infection. Focal infection. Fusospirochetal (Vincent's) infection. Actinomycosis. Osteomyelitis. Oral manifestations of extra-oral infections. Gonococcal infection. Interrelation of syphilitic and oral infections. Interrelations of tuberculous and oral infections. Bacteriologic aspects of oral hygiene.

Note: This book was written for students, dentists, and physicians. Its primary purpose is to aid the reader in forming a comprehensive concept of infection; its secondary purpose, to show how a knowledge of infection may help the dentist understand and solve his problems. In this third edition an effort has been made to make the text clearer and shorter, yet more comprehensive. Among other changes, these may be noted: the discussion of surgical antisepsis and asepsis now forms a separate chapter. The earlier chapter on classification of bacteria has been expanded to cover the pure culture study of bacteria. Inflammation, as one of the most important defense mechanisms, has been accorded a separate chapter. The discussion of periapical infection has been materially condensed. New chapters have been added on ecology of microorganisms of the mouth, actinomycosis, and osteomyelitis, while the one dealing with oral hygiene has been placed at the end of the book, with the implication that it represents the goal of all that has gone before.

BERNIER, JOSEPH L.

A manual for the differential diagnosis of oral lesions. With 174 text illustrations and 1 color plate. St. Louis: The C. V. Mosby Company, 1942. 228 p. illus. (part col.) 25 cm. \$4.00. 2669a

Contents: Indications and technic for the biopsy. Histology of the skin and mucous membrane. Inflammation. Superficial lesions generally local in character. Superficial lesions generally specific in character. Benign tumors of the oral region. Malignant tumors of the oral region. Tumors of odontogenic origin. Cysts of the oral regions. Miscellaneous diseases of the oral region. Index.

Note: The primary aim of this manual is to provide a handy reference to the pathology and to the clinical features of certain oral diseases. The material is presented in semi-outline form. General statements as to treatment are included but no attempt has been made to cover treatment in detail, the histologic background being the chief consideration. Not all tumors and diseases of the oral regions have been included, and emphasis is placed mainly upon those affections which seem to occur more frequently in the material received at the United States Army Medical Museum, Washington, D.C., from which all of the cases reviewed as well as the photomicrographs used were obtained. There are approximately 30 to 35 bibliographic references after most of the chapters.

BRAUER, JOHN CHARLES

Dentistry for children. With special chapters by L. B. Higley and Julian D. Boyd. Philadelphia: The Blakiston Co., 1939. 373 p. illus. 23 cm. \$6.50. 2670

Contents (abridged): Charts and tables. Preventive dentistry. Growth and development of the teeth. The management of the child. Examination and diagnosis. Operative dentistry for children. Pulp management. Treatment and restoration of fractured permanent and deciduous anterior teeth. Space retention in the deciduous and permanent arches. Preventive orthodontics. Minor oral surgery procedures for children. The normal child. Principles of nutrition. Nature of disease during childhood. Index.

Note: The various problems of the child patient as they concern the dentist are presented in this work. The book brings together material from several specialized fields in a practical manner designed to be of value to the dental practitioner. There are several useful charts and tables and 335 illustrations.

Dentistry

BREMNER, M. DAVID K.

617.609
The story of dentistry from the dawn of civilization to the present. Brooklyn, N.Y.: Dental Items of Interest Publishing Co., Incorporated, 1939. 211 p. illus. 25 cm. \$4.50. 2671

Contents: Magic as a cure for toothache. Strange superstitions about the teeth. Egypt, the Near East, and China. The Greeks, Etruscans, Romans, Arabians. Fauchard and the beginning of modern dentistry. Porcelain mortars and molars. Pivot crowns and pivots. Hayden and Harris. Gas that laughs at pain. False teeth for the millions. Development of amalgam fillings. Bold, cement and porcelain fillings. Crown and bridgework. The X-ray comes to the rescue of the dental profession. The cast gold inlay. The defeat of the Taggart patents. The age of articulators. Dental economics. Women in dentistry.

Note: An informal outline of the history of dentistry.

CAHN, LESTER RICHARD

Pathology of the oral cavity. Baltimore: The Williams & Wilkins Company, 1941. 240 p. illus. (part col.) 23 cm. \$5.50. 2672

Contents (abridged): Principles of inflammation. Diseases of the hard structures of the teeth. Diseases of the pulp. Diseases of the periapical tissues. Osteomyelitis. Pyorrhea alveolaris. Cysts of the jaw bones. Affections of the jaw bones. Tumors of the jaw bones. General histology and pathology of the oral soft tissues. Promentation in the mouth. Ulcers of the mouth. Oral soft tissue lesions associated with blood dyscrasias, endocrine dysfunction, and avitaminosis. Leukoplakia. Affections of the tongue. Tumors of the oral soft tissues. Index.

Note: This book covers the pathology of the lesions of the oral cavity which are commonly seen in everyday practice. Unusual conditions have been omitted. There are numerous illustrations, some in color, and bibliographies at the end of each chapter. For dental students and the dental practitioner.

CIPES, LEO RICHARD

Prescription writing and formulary for dentists. Brooklyn, N.Y.: Dental Items of Interest Publishing Co., Incorporated, 1941. 233 p. illus. 25 cm. \$4.50. 2673

Contents: Why the dentist should prescribe. Historical development of dental prescriptions. Dental materia medica and therapeutics. Methods of prescription writing, including official U.S.P. and N.F. formulae, symbols, dosage variations. Oral diseases and prescriptions used in their treatment. Dental remedies and formulae. Suggested courses in "pragmatic dentistry," pharmacology and prescription writing. Appendix. Index.

Note: The purpose of this book is to aid the dental student and the practitioner in the writing of dental prescriptions. The section on dental materia medica gives the properties and uses of those drugs and chemicals which are of value in treating dental diseases, grouped according to antiseptics, astringents, caustics, and hemostatics, anesthetics, sedatives, hypnotics, and narcotics. Included also is a section on average doses of various drugs, typical prescriptions and their application, and a glossary of Latin abbreviations and symbols. The appendix deals with poisons and their antidotes and various physiological tables.

COHEN, MILTON

914
Ceramics in dentistry. With 696 illustrations, some in colors. Philadelphia: Lea & Febiger, 1940. 335 p. illus. (part col.) 26 cm. \$10.00. 2673a

Contents: Composition of porcelain. Furnaces. Porcelain inlays. The porcelain jacket crown preparation. Impressions, dies and matrices. The application of the porcelain to the matrix. The continuous gum case. The application of mineral pigments. Porcelain in fixed and removable bridgework.

Note: Presents tested and satisfactorily proved results of 25 years' experience in a highly specialized field of dentistry. Restorative work is clearly described, and operative and prosthetic procedures are well illustrated and arranged. Since the book is addressed to practicing dentists, it assumes a knowledge of elementary dentistry; but a recapitulation of general principles is inserted to orient the student or practitioner. There are no bibliographies.

COMROE, BERNARD ISAAC, AND OTHERS

616
Internal medicine in dental practice, by Bernard I. Comroe, Leon H. Collins, Jr., and Martin P. Crane. Illustrated with 76 engravings and 6 colored plates. Second edition, enlarged and thoroughly revised. Philadelphia: Lea & Febiger, 1942. 543 p. illus. (part col.) 24 cm. \$5.50. 2673b

Contents: Diseases of the heart and blood-vessels. Diseases of the respiratory tract. The gastro-intestinal tract. Diseases of the kidneys and urinary tract. Diseases of the nervous system. Endocrinology. Diseases of blood and blood-forming organs. Arthritis and allied conditions. The infections. The eye—nose—pharynx—mouth—salivary glands. Allergy—deficiency diseases—vitamins. Chemical poisoning—intoxications. Foci of infection. The sulfonamides, gramicidin and penicillin.

Note: The authors endeavor to promote closer cooperation between internist and dentist. Although the dentist should not infringe upon the duties of the physician, still he has many opportunities to observe manifestations of systemic diseases before patients seek medical aid and thus can prove extremely useful to the physician. Such symptoms as the smooth glossy tongue in pernicious anemia and sprue; the pigmentation in Addison's disease; the dryness in diabetes mellitus, fevers, etc.; ulcerations of acute leukemia; the scars of epilepsy; chancre, mucous patch or gumma of syphilis, and many other signs of pathologic disorders are described. This second edition includes numerous up-to-the-minute discussions of important medical problems, including chapters on recent developments concerning the sulfonamides and penicillin. Other chapters have been expanded with special reference to oral manifestations and dental indications. Extensive bibliographies follow most chapters, others are interspersed throughout the book.

COVINGTON, ETHEL

The efficient dental assistant. St. Louis: The C. V. Mosby Company, 1940. 265 p. 19 cm. \$2.50. 2674

Contents: Your speech personality. The dental secretary. Personal hygiene. The tooth-building process. The deterioration process. Use and processing technique for dental radiograms. Dentistry for children. The restoration process. The art of creating good will. Conclusion. Glossary. Index.

Note: A series of lessons for home study designed to teach dental assistants how to become gracious, poised, intelligent, and convincingly efficient office managers. The duties as outlined in the text include the making of appointments, maintaining the recall list of patients, management of all financial receipts and expenditures, the typing and mailing of monthly statements, maintenance of professional records, sterilizing instruments, and general secretarial work. The rudiments of the dental art are outlined and a glossary is provided to help familiarize the assistant with the professional terminology.

DEWEY, MARTIN

617.64
Practical orthodontics. Revised by George M. Anderson. Sixth revised edition. St. Louis: The C. V. Mosby Company, 1942. 559 p. illus. 26 cm. \$10.00. 2674a

Contents: Orthodontics—field, definitions, objectives, benefits. History of orthodontics, by B. W. Weinberger. Occlusion. Malocclusion. Etiology. Diagnosis, radiographic profiles, by Sidney Riesner. Differential diagnosis—gnathostatics and photostatics. Measurement of dentofacial changes in relation to the cranium, by B. H. Broadbent. Extraction in relation to orthodontic treatment, by Harry E. Kelsey. Tissue changes incident to orthodontic tooth movement, by Rudolf Kronfeld. The approach to treatment. Methods and aids to treatment. Myofunctional treatment of malocclusion, by Alfred Paul Rogers. Mechanistic treatment of malocclusion. Orthodontic bands, by Earl W. Swinehart. The labial arch. The edgewise arch mechanism, by Chester F. Wright. The lingual arch and the removable lingual arch. Treatment of malocclusion. Retention. Plastic surgery of the jaws, by Edward A. Kitlowski.

Note: Mainly this is a work for the practicing dentist, but it is also used as a textbook. The sixth edition has been extensively revised. Portions that have been completely rewritten include the chapters on occlusion and retention. About 75 illustrations have been added or changed.

DIAMOND, MOSES

611.314
D54/d2
Dental anatomy; a graphic presentation of tooth forms with an original technique for their reproduction. Second edition revised and enlarged. New York: The Macmillan Company, 1935. 309 p. illus. 24 cm. \$5.00. 2675

Contents: Introduction and nomenclature. Developments of the tooth. Tooth tissues. Anatomic landmarks. Upper incisors. Upper cuspids. Upper bicuspid. Upper molars. Lower incisors. Lower cuspids. Lower bicuspid. Lower molars. Technique for reproducing symmetrical tooth forms. Arrangement of teeth and occlusion. Supporting tissues. Pulp chamber and pulp canals. Deciduous teeth. Variations and anomalies. Muscles of mastication. Arterial blood supply. Nerve supply. The jaw bones and the temporomandibular articulation. The oral cavity and its soft tissues. Glossary. Bibliography. Index.

Note: The chief aim in this textbook is an attempt to make the description of tooth forms serve as a means of facilitating the art of dental reproduction. Variations and anomalies which individualize a particular crown form have been omitted, and instead a basic dental outline or symmetrical tooth form is described in detail, covering the segmental portions and their arrangement in the total structure. The technique of reproduction of symmetrical forms is carefully outlined and illustrated at each step with mechanical drawings, while gross and detailed variations in natural teeth are shown in photographs. The second edition contains new material on deciduous dentition, a revised dental nomenclature, and new morphological data.

DOXTATER, LEE WALTER

260
Procedures in modern crown and bridge-work; the principles and technique of stationary and removable bridges. Brooklyn, N.Y.: Dental Items of Interest Publishing Co., Incorporated, 1931. 473 p. illus. 25 cm. \$8.00. 2676

Contents (abridged): Part I, The basic principles of crown bridgework: Occlusion. Methods of securing occlusion. Conservation of tooth structure and the dental pulp. The pulpless tooth. The influence of bridgework on the periodontal tissue. Stationary and removable bridges. Abutments for bridge cases. Part II, The technics of stationary bridgework: Conduction and infiltration anesthesia. Pulp canal. Pulp canal therapy. The cast gold crown. The Richmond crown. The porcelain jacket crown. The three quarter crown with accessory anchorage. The gold inlay. The Pinledge attachment. Coordination of the occlusion. The stationary bridge pontic. Construction of a cleansable stationary bridge. Construction of a movable joint. Atypical stationary bridge cases. Esthetic requirements in bridgework. Opening the bite. Part III, The technics of removable bridgework: Construction of a removable bridge. Repair and rebasing. Wrought gold clasp. Various cases. Index.

Note: This comprehensive text and reference book for dental students and practitioners presents practicable techniques for the construction of bridges and crowns which are intended to enable the dentist to construct satisfactory restorations for his patients wherever bridgework is indicated. Numerous photographs amplify the textual descriptions of both the mechanical and prosthetic techniques, including methods of accurate measurement, use of casts and patterns, and occlusion articulator devices.

DUNNING, WILLIAM BAILEY, AND S. ELLSWORTH DAVENPORT, JR.

617.633
D922d
19X5
A dictionary of dental science and art, comprising the words and phrases proper to dental literature, with their pronunciation and derivation. With seventy-nine illustrations, twelve of which are in color. Philadelphia: The Blakiston Co., 1936. 635 p. illus. (part col.) 25 cm. \$6.50. 2677

Note: A comprehensive dictionary of dental and oral terminology, and of the collateral but strictly related sciences. Terminology includes the names of the parts and tissues of the head and neck, also of certain facts or conditions which affect all regions of the body, and the names of the numerous technical procedures particular to the art of dentistry. Standard orthography is used and the pronunciation of each word is indicated

by a simple method of phonetic spelling, accompanied by its derivation. The author's choice of words is based on current usage, which includes the recommendations of the Committee on Nomenclature of the American Dental Association. Illustrative material is limited to plates, occasional diagrams, and portraits of persons conspicuous in the history of dentistry. The book is intended as a practical reference guide for the student and practitioner.

ESSIG, NORMAN STURGES

617.63
Es 77f
Prosthetic dentistry. Brooklyn, N.Y.: Dental Items of Interest Publishing Co., Incorporated, 1937. 181 p. illus. 25 cm. \$4.00. 2678

Contents: Treatment of impressions in preparation for models for vegetable or metal bases. Planning the denture and preparing the model. The swaged bite plate. Swaged metal dentures and clasps. Selection of teeth. Rebasing. Relining and veneering. Finishing and polishing. Tactful selection of artificial teeth. The articulator. Non-metallic bases. Porcelain, mouth hygiene and care in planning the denture. Taking the bite. Impression trays and impression taking. The record model and its use in cosmetic effect. Grinding of porcelain teeth to adapt them to special cases. Analysis of tooth form. Laboratory facilities and equipment.

Note: A textbook designed especially for beginners, but which can also be used profitably for postgraduate work.

FISCHER, MARTIN HENRY

Death and dentistry. Springfield, Ill.: Charles C. Thomas, 1940. 242 p. illus. 27 cm. \$5.00. 2679

Contents: The medical problem. Some peripheral diseases of proved etiology. First foci of infection. Anatomy and physiology of the tooth. Dental and periodontal infection. What the dental surgeon does and may not do. When teeth call for extraction. On extraction and post-extraction care. Clinical essays. Purely literary. From pediatrics to geriatrics. Bibliography. Indexes.

Note: A study of the infectious processes in and about the tooth and the recommended principles of dental surgery by which the author believes these processes can be eradicated. Intended for the general practitioner rather than the specialist, the work attempts to treat of these infections in terms of the "total life tale" of the patient, and is based upon the belief, derived from the author's practical experience, that the teeth are primary seeding foci for a large variety of diseases. Dental practice is here defined as bone surgery done in the face of infection, and proposals are made for a drastic revision of all dental procedure in the light of that definition.

FONES, ALFRED CIVILION, EDITOR

272
Mouth hygiene; a text-book for dental hygienists. With 219 illustrations and 9 plates. Fourth edition, thoroughly revised. Philadelphia: Lea & Febiger, 1934. 372 p. illus. (part col.) 24 cm. \$5.00. 2679a

Contents: Anatomy of the head. Histology of the tooth and associated structures. The teeth as a masticating machine. Malocclusion of the teeth. Inflammation. Deposits and accretions upon the teeth. Periodontoclasia (Pyorrhea alveolaris). Dental caries. Odontalgia and neuralgia. The relation of oral infections to general health. Mouth hygiene. Dietetics. Appendix: The broad field of service of the dental hygienist. The origin and history of the dental hygienist movement. Schedule of lessons on mannikins.

Note: This edition expands the subject but retains the original aims of the book which were to present clearly and briefly information valuable and relevant to the dental hygienist, keeping in mind the limited scope of that profession's duties. Awareness of restrictions imposed by law in states of the United States prohibits the description in detail of operative procedures other than removal of deposits, stains, and accretions from exposed surfaces and results in close adherence to external causes of dental pathology. This is a valuable text, well illustrated; but the bibliography relates solely to the dental hygiene movement.

GOLDMAN, HENRY MAURICE

Periodontia, a study of the histology, physiology, and pathology of the periodontium, and the treatment of its diseases. With 310 illustrations including 18 in color. St. Louis: The C. V.

Mosby Company, 1942. 407 p. illus. (part col.)
25 cm. \$7.50. 2680

Contents (abridged): Examination: Methods. Charting of cases. Radiographic examination. Laboratory tests. Basal metabolism. Urinalysis. Biopsy. Diagnosis: Classification of diseases. Gingival abrasion. Gingivitis. Periodontosis. Periodontal abscess. Etiology: Local causes. Faulty dentistry. Oral sepsis. Occlusal trauma. Systemic causes. Diet. Uric acid metabolism. Rate of putrefaction of saliva. Endocrine dysfunction. Pregnancy. Allergy. Periodontal histology, physiology, and pathology: Alveolar process. Eruption of teeth. Gingival crevice. Changes from youth to old age. Abrasion of crown. Recession of the gingiva. Physiology of mastication. Ankylosis of bone and cementum. Senile and presenile atrophy. Periodontal abscess. The periodontal pocket. Treatment: Objectives. Correction of mechanical irritants. Control of infection. Special methods of treating pockets. Equilibration of occlusion. Vincent's infection. Periodontal abscess. Index.

Note: Periodontia, the study of the supporting structures of the teeth, their physiology and pathology, is a relatively new branch of dental medicine, but one in which many advances have been made in recent years, and maintenance of the health of the periodontium is now accepted as a part of the task of every dentist. With this in view, the author has written this book in order to present the fundamentals of periodontia in such a way that they may be grasped easily by both the student and the general practitioner.

GORDON, SAMUEL MORRIS, EDITOR

Dental science and dental art. Illustrated with 224 engravings. Philadelphia: Lea and Febiger, 1938. 731 p. illus. 24 cm. \$9.50. 2680a

Contents: Tooth development, by Isaac Schour. Experimental dental histophysiology, by Isaac Schour. The composition and calcium-phosphorus metabolism of teeth, by B. Gottlieb and B. Orban. The biologic aspects of orthodontia, by Allan G. Brodie. The physiology of the salivary glands, by B. P. Babkin. Salivary calculus, by Theodore Rosebury and Maxwell Karshan. The problem of dental caries, by Theodore Rosebury. Biochemical aspects of dental caries, by Maxwell Karshan. Bacteriologic and immunologic changes in dental caries, by Philip Jay. Calcium and phosphorus compounds in relation to dental nutrition, by Samuel M. Gordon. Chronic endemic dental fluorosis (mottled enamel), by H. Trendley Dean. The etiology of Vincent's infection, by Theodore Rosebury. The clinical aspects and therapy of Vincent's infection, by Harry Lyons. Selected diseases of the mouth, by Theodore Cornbleet. The present status of the pulpless tooth and factors concerning therapy, by Harry Lyons. Restorative materials, by Floyd A. Peyton. Principles of inhalation anesthesia, by Maurice H. SeEVERS. The clinical aspects of general anesthesia, by Edward B. Tuohy. Local anesthesia—theoretical and applied, by Maurice L. Tainter and Sanford M. Moose. Antiseptics and disinfectants, by Thomas G. Hull. Statistical methods in dentistry, by William M. Gafarier.

Note: A group of writers both in and out of dentistry have united to present a review of the fundamental disciplines which make dentistry an entity separate from the rest of science. The aim has been to raise dentistry from a mechanical skill to an art and a science. The individual authors are workers who have made contributions in their own fields. The material is divided into three large groups: physiologic, pathologic, and therapeutic, and the articles follow one another in logical order. Extensive bibliographies occur after each chapter except chapters four and fifteen. The index of authors includes the individual bibliographies as well as the text material. An unusual feature is the article on statistical methods in dentistry.

GREENFIELD, ABRAHAM LINCOLN

X-ray technic and interpretation of dental roentgenograms. Brooklyn, N.Y.: Dental Items of Interest Publishing Company, Incorporated, 1936. 254 p. illus. 25 cm. \$6.00. 2681

Contents: X-ray tubes. Protection of patient and operator. Shadow formation. Target film distance. Intra-oral technic. Biting film technic. Extra-oral technic. Placing films in the mouth. Film processing. Mounting and viewing films. Electric tests for pulp vitality. Applying the test. Precautions. Limitations of pulp testing. Radiographic appearance of the normal dental tissues. Anatomic landmarks. Radiographic appearance of pathological conditions. Pericementitis. Granuloma. Cysts. Caries. Resorption of roots. Hypercementosis. Condensed bone. Fractures. Impacted and unerupted teeth. Deposits of calculus. Sinus diseases. Ce-

mentoma. Odontoma. Adamantinoma. Cell tumors. Sarcoma. Carcinoma.

Note: A brief text designed for the use of the practicing dentist. It contains over 450 illustrations including reproductions of roentgenograms. There is a short bibliography.

HAYES, LOUIS VINCENT

Clinical diagnosis of diseases of the mouth; a guide for students and practitioners of dentistry and medicine. With an introduction by Leo Winter. With 12 colored plates and 353 black and white illustrations. Brooklyn, N.Y.: Dental Items of Interest Publishing Co., Incorporated, 1935. 461 p. illus. (part col.) 25 cm. \$7.50. 2681a

Contents: Oral diagnosis in modern dentistry. Diagnosis as a guide to therapy. The scope of oral diagnosis. The elements of oral diagnosis. The more common mouth lesions. The lesions of the gums. Lip lesions. Cheek lesions. Tongue lesions. Lesions of the palate. Oral manifestations of syphilis. Glandular disturbances. Correlation of lesions of the face. Facial swellings. Neuralgias. Growths in the oral cavity. Diagnosis of oral fractures. Cysts of the jaws. Selecting subject matter for instructional purposes. Bibliography. Index.

Note: This book aims to serve students and practitioners of dentistry and of medicine as a practical aid in the prevention and curing of diseases of the mouth through the development of skill in oral diagnosis. The author has selected for illustrative purposes only the original photographs of cases actually diagnosed and treated at the Oral Surgery Clinic of New York University at Bellevue Hospital, New York, and in his private practice. Definition, etiology, symptoms, and treatment are given for each disease treated. There is an extensive bibliography of over 1,700 entries listed by author under the general subject matter of each chapter.

HEMLEY, SAMUEL

Fundamentals of occlusion. With 504 illustrations on 286 figures. Philadelphia: W. B. Saunders Company, 1944. 377 p. illus. 24 cm. \$6.50. 2682

Contents: Normal occlusion. Bone. Development of maxillary bones: related structures. Forces of occlusion. Etiology of malocclusion. Classification of malocclusions. Discussion of classifications. Tissue changes associated with tooth movement. Short notes on biomechanics and artificial mechanics. Index.

Note: Although prepared primarily as a text for dental students, the author has also been mindful of the practitioner and therefore includes data of interest to him. The fundamental biological factors governing normal occlusion are given. Stress is placed on the biochemical and physical factors involved in bone growth with features of this physicochemical theory analyzed in their relations to the study of occlusion. The subject is kept basic to practically all of the work of the clinical years. All like cases of malocclusions are grouped together and criteria are established for differentiating between groups of unlike cases. Five hundred and four illustrations on 286 figures are included, among them being front and side views of casts showing virtually every type of malocclusion taken up in the book.

HIRSCHFELD, ISADOR

The toothbrush: its use and abuse; a treatise on preventive dentistry and periodontia as related to dental hygiene. With 174 case histories and 415 illustrations. Brooklyn, N.Y.: Dental Items of Interest Publishing Co., Incorporated, 1939. 591 p. illus. 25 cm. \$7.50. 2683

Contents: The history of oral hygiene and the toothbrush. Oral hygiene and the toothbrush in the prevention of dental caries. The toothbrush in the prevention of periodontal disease. The toothbrush in the treatment of suppurative periodontoclasia (pyorrhea). The toothbrush in the treatment of chronic marginal gingivitis. The toothbrush in the treatment of chronic hypertrophic gingivitis. Hypertrophies in which the toothbrush has no curative value. Traumatization of the soft tissues by the toothbrush. Abnormalities of the tooth surface induced by the toothbrush and various other agencies. Toothbrush methods in common use. Toothbrushing instruction. Qualifications of a satisfactory

toothbrush. Cleansing of dentures. Dentifrices and mouthwashes. Food impaction. Enamel fissures and pits and their correction. Etiology of dental caries.

Note: This book is intended for dentists rather than laymen. It describes hundreds of cases of various types of periodontal lesions and gives their etiology, diagnosis, and treatment. Bibliographical lists are included.

HOGEBROOM, FLOYDE EDDY

617-6602
4677p
1946
Practical pedodontia, or juvenile operative dentistry and public health dentistry; an introductory text for students and practitioners of dentistry. Special chapters by Forrest Anderson, Harold Hawkins, Thaddeus P. Hyatt, and Harry E. Straub. Fourth edition. St. Louis: The C. V. Mosby Company, 1938. 371 p. illus. 25 cm. \$6.50. 2683a

Contents: Introduction. Management of the child in the dental office. Mental hygiene viewpoints on the child. Development of the child—embryology. Growth and development of the child's head. The deciduous teeth. Cavity preparation in deciduous teeth. Filling materials used in deciduous teeth. Radiography. The first permanent molar. Procedures and variations. Prophylactic odontotomy. The treatment of pulps in deciduous teeth. The biochemical aspects of preventive dentistry. Prevention of dental caries by nutrition. Prosthetic appliances for children. Fractured and injured incisor teeth of children and their treatment. Anesthesia for children. The abnormal frenum labium. Dental prophylaxis. Endocrinology and its relation to dentistry. Public health and dentistry. Appendix.

Note: A work for practicing dentists. It emphasizes the preventive aspects of dental work with children. The first two chapters are an unusual feature since they are aimed at enabling the dentist to handle children in the dental office without developing in them an unfavorable attitude toward dental care.

HYATT STUDY CLUB OF NEW YORK

617-6602
4677p
1946
Prophylactic odontotomy; a practical and simple procedure for the prevention of caries in pit and fissure cavities; an operative manual based on the work of the Hyatt Study Club of New York. New York: The Macmillan Company, 1933. 104 p. illus. 19 cm. \$1.50. 2684

Contents: Introduction. Statistics. Development of the teeth. Management of children. Examination technique. Preparation of cavities. Filling materials. Plastic filling materials and the use of silver nitrate. Tin foil. Filling with gold. The economics of prophylactic odontotomy. Terminology. Bibliography. Index.

Note: Report of a study made by 27 dental practitioners, including Thaddeus Hyatt and Thaddeus P. Hyatt, on pit and fissure cavities. Since statistics show the occlusal surfaces of molars and bicusps to be more vulnerable than any other area, attention is directed to a practical method of preventing actual caries by means of fillings in those types of pits and fissures where caries are most apt to occur.

KAZIS, HARRY

720
Planning and treatment of bite raising. Brooklyn, N.Y.: Dental Items of Interest Publishing Company, Inc., 1943. 538 p. illus. 25 cm. \$10.00. 2684a

Contents (abridged): Anatomy of temporomandibular articulation. Mechanics of mastication. Planning a bite. Functional factors in bite revision. Bite revision: Open bite. Prognathic bite. Cross (unilateral) bite. Bite anomalies and temporomandibular disturbances. Application of mechanics of mastication to analysis of temporomandibular disturbances. Attrition discussion. Ceramics and its esthetic applications. Operative technic. Restorations and their application. Bibliography. Index.

Note: The author's special purpose has been to describe procedures that will result in good functional efficiency and attractive appearance even in cases of extensive dental restorations. He has provided a detailed study of a considerable number of cases, with numerous illustrations, including photographs, roentgenograms and line drawings.

KENNEDY, EDWARD

517-6602
4677p
1946
Partial denture construction; a text book describing the technics of impression taking and the construction of that type of removable partial dentures which are supported and retained by external attachments. Second edition, revised and enlarged. 485 illustrations. Brooklyn, N.Y.: Dental Items of Interest Publishing Co., Inc., 1942. 581 p. illus. 25 cm. \$8.50. 2685

Contents (abridged): Partial plamework. Preparation and use of study models. Impression materials and sectional compound impressions. The rebasing method of taking impressions for partial dentures. Bite impressions and cast materials. Bite raising and correlating occlusion. Designs of saddles and indirect retention. Stress breakers and indirect retainers. Clasps and slotted attachments. Round wire clasps. Bonwill clasp technique. Technics of Gillett clasps. Jackson crib clasp technique. Flat plate and matrix clasp. Attachments for removable clasps. Double wire clasps and the construction of tangs. Construction of cast clasps in partial denture construction. Saddles and palatal bars. Technique for constructed bards. Technique for constructing swedged saddles. Construction of denture designs with special reference to the avoidance of soft structures. Methods of repairing and rebasing dentures.

Note: In this edition new chapters have been added on surgical appliances and obturators, on stainless steel and other metals, on new impression materials, as well as on modern methods in impression taking by raising and casting.

MCCALL, JOHN OPPIE, AND SAMUEL STANLEY WALD

617-6602
4677p
1946
Clinical dental roentgenology; technic and interpretation including Roentgen studies of the child and young adult. With 1046 illustrations on 355 figures. Philadelphia: W. B. Saunders Company, 1940. 319 p. illus. 26 cm. \$5.50. 2686

Contents: Introduction. Electricity and roentgenology. Dental roentgenogram and films used in dental roentgenography. Factors in dental roentgenography. The complete intra-oral roentgenographic survey: orientation of roentgenograms. Stereoscopic roentgenography. Roentgenographic interpretation. Dental roentgenograms of normal child. Differential diagnosis between anatomical landmarks and indications of pathological conditions. Anomalies and abnormal development. Growth phenomena. Hypoplasia. Dental caries. Periapical lesions. Root resorption. Periodontal disease. Fractures of teeth and jaws and operative trauma. Osteomyelitis. Cysts, bone dysplasias and tumors of the jaws. Involvements of maxillary sinus. Temporomandibular articulation. Localization of misplaced teeth, cysts and foreign bodies. Index.

Note: Intended for the dental student, dental practitioner, and dental hygienist, this book deals with the problems met in taking and interpreting X-rays of the mouth and jaws. The author's aim has been to perfect the technique of making X-rays and to so present the normal and pathologic data that accurate and speedy recognition of abnormalities will be routine. Of special significance is the great emphasis placed on roentgenology of the child. The close parallel of children's oral disorders with that of adults is also brought out as further evidence of the need for thorough X-ray examination of the patient in early years. In addition to the subjects usually found in books on dental roentgenography, normal dentition is illustrated, from the prenatal period to maturity.

MCCALL, JOHN OPPIE

617-6602
4677p
1946
Fundamentals of dentistry in medicine and public health, with a foreword by Wilson G. Smillie. New York: The Macmillan Company, 1938. 161 p. illus. 21 cm. \$3.25. 2687

Contents: Embryology. History. Occlusion. Dental caries. Diet, dental health, and general health. The so-called dead tooth. Gingivitis. Periodontoclasia. Dental foci of infection. Dental care for special groups. Dental disease and public health. Bibliography. Glossary. Index.

Note: This is written by a dentist for the practitioner and student of medicine. Its aim is to bring about greater awareness of

the close functional and pathological relationship between the teeth and the rest of the body. Simple but specific information is given, too, concerning the prevention of dental defects and disease, for the particular guidance of public health workers, health educators, school physicians, etc., planning community health programs.

McGEHEE, WILLIAM HARPER OWEN, AND MELVIN W. GREEN

A textbook of dental pharmacology, materia dentica and pharmaco-therapeutics. Second edition. Philadelphia: The Blakiston Company, 1941. 462 p. illus. 23 cm. \$5.00. 2688

Contents: Pharmacognosy, pharmacy, pharmacology, and prescription writing. Antiseptics, disinfectants, germicides, and deodorants. Local drugs altering the inflammatory process. Drugs acting locally on the gastro-intestinal tract. Drugs acting on sensory nerves: local anesthetics. Stimulants and depressants of the central nervous system. Drugs acting on the autonomic nervous system and upon muscles. The pharmacology of the metals, specifics and vitamins. Appendix. Index.

Note: This book presents a comprehensive but concise course in pharmacology, materia dentica and pharmaco-therapeutics for use in schools of dentistry. Stress is laid upon the fundamental pharmacological and physiological principles upon which therapeutics rests. Drugs affecting the autonomic nervous system are presented in keeping with the most recent theories of autonomic behaviour. In this edition, many new drugs, respiratory stimulants, local anesthetics, sulfonamides, recently discovered barbiturates, and other important remedies are included. A discussion of newly discovered vitamins which apply to dentistry has been added. Additional material in the appendix includes: a dental formulary and prescription guide, a therapeutic index, an index of drugs and preparations having specific dental uses, recent findings in toxicology, etc. Bibliographical references are included.

McGEHEE, WILLIAM HARPER OWEN

A text-book of operative dentistry. Second edition, revised, with ten hundred and forty illustrations. Philadelphia: The Blakiston Co., 1936. 922 p. illus. 24 cm. \$10.00. 2689

Contents (abridged): Introduction. Diagnosis. Routine methods. Prevention of oral diseases. Instruments and instrumentation. Hygiene, light and asepsis. Exclusion of moisture from field of operation. Preparation of cavities. Standardized system of instrumentation for cavity preparation. Restoration of contact point and separation of teeth. Use of matrix in filling teeth. Restoration of tooth structure by fillings. Restorative operations by amalgam. Non-plastic restorative materials. Cast gold inlay. Ceramics. Treatment of hypersensitive dentin. Service for special types of patients. Diseases of the dental pulp. Technic of opening and filling pulp chambers and canals. Index.

Note: This work is planned primarily for the use of teachers and students in dental schools, but is also useful as a working guide for the practitioner. Suggestions on early diagnosis are presented and the bearing of oral foci of infection and reflex nervous disturbances in and about the oral tissues on general systemic disturbances is discussed. The book presents a systematization of all operative restorative procedures, especially instrumentation for cavity preparation and the manipulation of filling materials. This technique insures marked increase in efficiency and productive power. The subject matter is presented in logical sequence and in the order it is usually taught in college. The second edition contains new material on diagnosis, while several subjects such as periodontology, exodontia, anesthesia, and planting of teeth have been omitted. Advances in the field of operative dentistry between 1932 and 1936 are also included.

MARIE, JOSEPH SAMUEL FORESTER

Dental vocabulary; including many medical terms. Lancaster, Pa.: The Jaques Cattell Press, 1943. 159 p. illus. 25 cm. \$4.00. 2689a

Contents: Part I, English-Spanish. Part II, Spanish-English.

Note: The first part of this dictionary gives the Spanish equivalents of English dental terms; the second part gives the English equivalents of similar Spanish terms. Names of instruments, office equipment, supplies, diseases, medicaments, orthodontic appliances, anatomical, and some medical terms are included.

MEAD, STERLING VERNON

Diseases of the mouth, with 633 illustrations in the text and 63 color plates. Fifth edition. St. Louis: The C. V. Mosby Company, 1940. 1059 p. illus. (part col.) 25 cm. \$12.50. 2689b

Contents: Diagnosis. Roentgenograms. Photography. Diagnosis of pulp vitality. Transillumination of the teeth and gums. Bacteriologic examination. Laboratory examination. Disorders of the enamel, dentin, and cementum. Dentition. Abnormalities of the teeth. General oral conditions. Endocrine dysfunctions. Malocclusion. Saliva. Localization on unerupted teeth, impacted teeth, and foreign bodies. Impacted and unerupted teeth. Peridontia diseases. Diseases of the dental pulp. Periapical diseases of teeth. Pulpless teeth. Specific infectious diseases. Non-specific infectious diseases. Infections of the floor of the mouth and of the neck. Diseases of the blood and blood vessels. Diseases of the nerves. Diseases of the lip. Diseases of the tongue. Diseases of the throat. Diseases of the salivary glands and their ducts. Diseases of the maxillary sinus. Congenital deformities of the lip and palate. Stomatitis. Diseases and disorders of the mandibular joint and muscles of mastication. Diseases of maxillary bones. Fracture. Tumors. Cysts. Temperatures. Relationship of oral sepsis and systemic disturbances.

Note: A comprehensive work for dental students and practicing dentists. Most of the diseases covered are discussed in detail. Both the illustrative and the textual material have been considerably increased in this edition. The chapters on photography, endocrine dysfunctions, nonspecific infectious diseases, and several other topics are new and other important chapters have been enlarged.

MEAD, STERLING VERNON

Oral surgery. With 553 text illustrations and 7 color plates. Second edition. St. Louis: The C. V. Mosby Company, 1940. 1315 p. illus. (part col.) 26 cm. \$12.50. 2689c

Contents: Diagnosis. Surgical anatomic relationships of the mouth (cavum oris). Preoperative preparation. Selection of anesthesia. Emergency measures. Surgical technic. Special drugs for surgery of the mouth. Hospitalization. Sterilization for surgery of the mouth. Inflammation. Surgical bacteriology. Non-specific infections. Infections of the face, neck, and floor of the mouth. Specific infectious diseases. Wounds and injuries of the soft tissues. Stomatitis. Periapical diseases of the teeth. Surgical treatment of periodontal disease. Residual infection. Removal of teeth. Removal of impacted teeth. Removal of foreign bodies. Surgical preparation of the oral tissues for restorations. Surgical correction of abnormal frenum labii. Apicoectomy. Plantation of teeth. Injuries of the alveolar process and the teeth. Fractures. Fractures of the maxilla. Fractures of the mandible. Dislocation of the temporomandibular joint. Limitation of motion of the temporomandibular joint. Diseases of the maxillary bones. Malocclusion, deformities and malrelation of the jaws. Diseases of the maxillary sinus. Diseases of the salivary glands and their ducts. Diseases of the nerves. Diseases of the lips. Diseases of the tongue. Hemorrhage. Syncope, shock, and collapse. Harelip and cleft palate. Tumors. Cysts. Physiotherapy. Postoperative treatment. Diet and nutrition.

Note: Originally written as a text for the instruction of undergraduate dental students and as an aid to dental practitioners, the second edition has been enlarged to include many advances in surgical procedure. Infections, periodontal disease, cleft palate and cleft lip, fractures, and surgical preparation of the mouth for dentures have been stressed. The recommendations of the Committee on Nomenclature and the Council on Dental Therapeutics of the American Dental Association have been followed throughout the book. The chapters on surgical treatment of periodontal disease and on harelip and cleft palate have been written by specialists. There is an excellent index.

MERRITT, ARTHUR H.

Periodontal diseases; diagnosis and treatment. Second edition. New York: The Macmillan Company, 1940. 205 p. illus. 22 cm. \$3.50. 2690

Contents: The supporting tissues of the teeth. Diseases of the periodontium and their diagnosis. Gingivitis. Vincent's infection. Periodontoclasia. Etiology of periodontoclasia. Treatment of periodontoclasia. Instrumentation. The surgical treatment of periodontoclasia. Restorative treatment. Instruments. Periodontal abscess. Diet. Postoperative care. The dentist's part. The patient's responsibility in the care of the mouth. The prevention of periodontal disease. Sensitive teeth: their differential diagnosis

and treatment. Splinting teeth. Tobacco smoking: its relation to the soft tissues of the mouth. Periodontia as a specialty. Periodontia: its educational and economic aspects. Clinical cases. Conclusions. Index.

Note: For students and practitioners, both general and specialized, of dentistry. The author's own successful methods for treatment of periodontoclasia are given in this concise volume. He believes that many of the teeth that are lost from this condition could be saved if treatment is instituted at the proper time, and he offers substantial evidence from his own extensive experience in the exclusive practice of periodontia to support his claim.

MESSNER, CHARLES THAD, AND OTHERS

Dental survey of school children, ages 6-14 years, made in 1933-34 in 26 states. By C. T. Messner, W. M. Gafafer, F. C. Cady, and H. T. Dean. Washington, D.C.: Government Printing Office, 1936. 248 p. illus. 23 cm. (United States. Public Health Service. Public health bulletin no. 226) Paper, \$0.20. 2690a

Contents: Introduction. Method of conducting survey. Examination form. Method of examination. Tabulations. Omitted tabulations. Acknowledgments.

Note: The body of the book consists of tables that present "an approximation of the oral conditions of a large cross-section of the elementary school population of the United States." Statistics from questionnaires to dentists on their methods of making the dental examination are included.

MILLER, ROGER G.

Synopsis of full and partial dentures. With 107 illustrations. St. Louis: The C. V. Mosby Company, 1942. 221 p. illus. 20 cm. \$3.00. 2690b

Contents: Preparation of the mouth for complete dentures. Anatomical review—the edentulous maxilla. The maxillary impression. The lower impression. The vertical dimension. Centric relation. Selection of teeth. Immediate dentures. Preparation of the mouth for partial dentures. Impressions for partial dentures and establishing cast relationship. Design of partial dentures. Maxillo-facial prosthesis. Perfecting the occlusion and instructions to the patient. The central dental laboratories.

Note: This concise volume is intended for quick reference use by practitioners. Mainly it supplies brief, practical information on methods of procedure.

MILLER, SAMUEL CHARLES, EDITOR

Oral diagnosis and treatment planning; a textbook for students and practitioners of dentistry and medicine. With an introduction by Allen T. Newman. Five hundred and sixty-two illustrations including fifteen color plates. Philadelphia: The Blakiston Co., 1936. 620 p. illus. (part col.) 23 cm. \$7.50. 2691

Contents (abridged): Science of oral diagnosis. Head pain. Pain of dental origin. Mouth conditions, dental and periodontal diseases in children. Diseases of oral mucous membranes. Radiographic interpretation. Diagnosis of abnormalities of temporomandibular articulation, surgical conditions, incipient periodontal disease, advanced periodontal disease—rationale of treatment. Caries. Diagnosis of pulp abnormalities and pulp testing. Lesions of the hard structure of teeth, treatment. Diagnosis for bridge-work and design, partial denture, full dentures. Diagnosis in orthodontia. Tumors of oral mucous membrane. Mouth infections. Oral manifestation of endocrine dysfunctions. Oral and dental diseases of occupational origin. Laboratory diagnosis available to dentist. Oral bacteriology. Salivary analysis. Index.

Note: A composite work of specialists who have collaborated to present a systematized procedure for the diagnosis and treatment of oral diseases. It covers every phase of dentistry and outlines a plan of treatment for every condition. Attached to the book is a colored chart which portrays a simplified technique of cavity preparation based on mechanical principles. Bibliographies are included.

MILLER, SAMUEL CHARLES, AND OTHERS

Textbook of periodontia (oral medicine) by Samuel Charles Miller, with the cooperation of the following members of the periodontia staff of New York University College of Dentistry: Assistant Professors Sidney Sorrin, J. Lewis Blass [and others], and an introduction by John Oppie McCall; also 15 special contributors. Second edition. Philadelphia: The Blakiston Company, 1943. 733 p. illus. (part col.) 23 cm. \$9.50. 2692

Contents (abridged): Introduction. Physiological basis of periodontal treatment. Histopathology of periodontal tissues. Etiological factors in periodontal disease. Diagnosis of periodontal disease. Relation of laboratory procedure to periodontal diagnosis. Prognosis of teeth with periodontal involvement. Choice of treatment for periodontal pockets. Instrumentation. Periodontal massage. Traumatic occlusion. Food impaction. Habit. Non-occlusion as a factor in periodontal disease. Pathologically migrating teeth. Repositioning of the mandible. Splints and stabilizers. Necrotic gingivitis. Drugs. Diet. Endocrine system in periodontal disease. Systemic effects of periodontal disease. Cases before and after treatment. Presenting periodontia to patient.

Note: This book has been prepared by the collaboration of many experienced teachers and specialists in the subjects discussed. It includes the latest developments of the biological phases of dentistry which are now a concrete part of oral health service, and of gerodontia (dentistry for the aged) which has also come to the front as an important part of modern dental practice. In this edition recent developments in diagnosis, prognosis, new instruments and drugs, diet, the endocrine system, systemic effects, before and after treatment considerations, and an extensive glossary are included. Bibliographies are included.

MINER, LEROY MATTHEW SIMPSON

The new dentistry, a phase of preventive medicine. Six Lowell lectures. Cambridge, Mass.: Harvard University Press, 1933. 219 p. 19 cm. \$2.00. 2693

Contents: Early history. Dentistry as an art or craft. Dentistry as a specialty of medicine. Oral infection. Diet and the teeth. The future of dentistry. Index.

Note: A transcript of six lectures delivered as a Lowell Institute course and prepared for the general public. The opening lectures present a narrative history of dentistry from earliest times to the present, and the later talks cover in some detail the evolution of dental theory, methods, and appliances, showing why dentistry has a particular obligation to achieve prevention and the importance of dental research toward that end.

MORREY, LON W., AND OTHERS

Teeth, health and appearance, developed by Lon W. Morrey, D.D.S., Supervisor of the Bureau of Public Relations, American Dental Association, with the assistance and approval of the Committee on Dental Health Education: William R. Davis, D.D.S., Thomas A. Gardner, D.D.S., Emory W. Morris, D.D.S. [and others]. Chicago, Ill.: The Bureau of Public Relations, American Dental Association, 1940. 47 p. illus. (part col.) 35 cm. \$1.50. 2694

Contents: Teeth and personal appearance. The teeth. The first or deciduous teeth. The second or permanent teeth. The dentist and the child. Controlling decay of the deciduous teeth. Orthodontia. Care of the permanent teeth. Artificial teeth or dentures. Mouth hygiene. The use of X-rays in dentistry. Diet and dental decay.

Note: The principal purpose of this brief summary is to show how a healthy condition of the teeth can be secured without the expenditure of a large sum of money if the teeth are cared for in time. The treatment is simplified for the layman. The format and presentation make it particularly suitable as reading matter for the dentist's waiting-room.

MOULTON, FOREST RAY, EDITOR

Fluorine and dental health. Publication committee: H. Trendley Dean, Paul C. Kitchin. Washington, D.C.: American Association for the Advancement of Science, 1942. 101 p. illus. 26 cm. (American Association for the Advancement of Science. Publication no. 19) \$3.00.

2695

Contents (abridged): Mottled enamel, by D. S. McKay. Geographical distribution of endemic dental fluorosis, by H. T. Dean. Chemistry of fluorine, by H. V. Smith. Investigation of physiological effects by the epidemiological method, by H. T. Dean. Experimental dental fluorosis, by I. Schour and M. C. Smith. Removing stain from mottled enamel, by H. B. Younger. Dental fluorosis studies at University of Minnesota, by W. D. Armstrong. Fluorine and dental caries, by P. Jay. Fluorine-carries relationship, by G. J. Cox and M. M. Levin. Fluorosis studies at the University of Rochester, by J. F. Volker. Mottled enamel from standpoint of public health dentist, by C. F. Deatherage.

Note: Papers presented at a symposium held in December, 1941, at a meeting of the American Association for the Advancement of Science. Because the problem of dental fluorosis has only come to the fore in recent years, this symposium offers a rather complete account of the fundamental investigations which were carried out prior to the date of publication. In addition it makes available in convenient form the facts, theories, and unsolved dental problems relating to fluorine. Each paper includes a list of references.

NEUROHR, FERDINAND GUSTAV

Partial dentures; a system of functional restoration. Illustrated with 206 engravings. Philadelphia: Lea & Febiger, 1939. 244 p. illus. 26 cm. \$6.50.

2695a

Contents: What is an adequate restoration? The insertion pin and spring wire lock restoration. Abutments commonly used. The modified thimble jacket crown as a bridge abutment. The tilt-in and non-tilt-in appliances of this system. The tilt-in bridge. The non-tilt-in bridge. The insertion post bridge (management of the non-carious abutment in this system). The distal extension bridge. The problem of partial denture design. Original classification and design of partial dentures. The non-tilt-in partial denture. The tilt-in partial denture. An original procedure for the replacement of missing teeth after completion of orthodontic treatment. Rebasings. Repair of a spring wire lock. Mouth rehabilitation. Practical cases.

Note: The title of this book is misleading, since it deals not with partial dentures in general, but with a particular kind of partial denture worked out by the author—the spring wire lock system. The book is written for the practicing dentist, and describes in detail the various steps in the construction of the denture. There are a few references to the work of other people, but in general the author describes his own techniques. There are many drawings, figures, and photographs. The last chapter presents a series of case histories. A four-page index completes the volume.

NEVIN, MENDEL, AND OTHERS

Conduction, infiltration and general anesthesia in dentistry, by Mendel Nevin . . . and P. G. Puterbaugh . . . collaborators: Fred R. Adams . . . Hillard R. Nevin. Fourth edition. Illustrated with 213 engravings and large trigeminal nerve chart. Brooklyn: Dental Items of Interest Publishing Company, Inc., 1938. 412 p. illus. 24 cm. \$6.00.

2696

Contents: The birth of anesthesia. Important anatomical structures and landmarks in conduction anesthesia. The trigeminal nerve as related to dental surgery. Blocking the maxillary nerve and its branches. Pterygomandibular anesthesia. Extraoral injections. Infiltration anesthesia. Pain control in operative dentistry. Pharmacology of drugs used in local anesthesia. Vehicle used in local anesthetics. Acid, buffered and alkaline anesthetic solutions. Preparation of the anesthetic solution from tablets. Armamentarium. The physiology of local anesthesia. Preoperative and postoperative treatment of patients. Postinjection and

postoperative complications. Restorative measures. General anesthesia and analgesia. Indications and methods of administration. Anesthetic agents and stages. General anesthesia in the dental office. Conditions requiring special management. General anesthesia in the hospital. Bibliography. Index.

Note: A text and reference book for dental students and practitioners which attempts to increase the utilization of local anesthesia by lessening the complications of the technique and by describing the safest and most generally approved methods of administration. There is a detailed study of the anatomical structures encountered in nerve blocking and a description of the fifth cranial or trigeminal nerve which is so inevitably related to dental pain. The fourth edition contains new material on mandibular injection, buffered and alkalized anesthetic solution, supra-periosteal or submucous injection, and anesthetic containers. The short bibliography covers local and general anesthesia.

OLIVER, OREN AUSTIN, AND OTHERS

Labio-lingual technic; a description of the labial and lingual appliances in the treatment of malocclusion, by Oren A. Oliver, Russell E. Irish, and Claude R. Wood. With 278 illustrations. St. Louis: The C. V. Mosby Company, 1940. 424 p. illus. 25 cm. \$10.00.

2696a

Contents (abridged): Impressions and materials. Boxing, pouring and separating impressions. Work model. Trimming, finishing, duplicating record models. Materials and accessories. Instruments. Practical soldering exercises. Separation. Anchorage. Band construction, tube placement. Attachment bands. Lingual appliance. Hooks. Occlusal guide plane. Incisal guide planes, occlusal crib. Definitions. Auxiliary attachments. Space maintenance. Bibliography. Index.

Note: Essentially a handbook to use directly in the office and the workroom. Detailed instructions are given and photographs that parallel the text illustrate the steps of each operation. Emphasis is laid on the importance of accuracy in workmanship, the methods that produce such accuracy, and the value of keeping record models made prior to beginning any corrective work.

ORBAN, BALINT, EDITOR

Oral histology and embryology. With 262 text illustrations including 4 color plates. St. Louis: The C. V. Mosby Company, 1944. 342 p. illus. (part col.) 26 cm. \$6.50.

2696b

Contents: Development of the face and oral cavity. Development and growth of teeth. Enamel. Dentin. Pulp. Cementum. Periodontal membrane. Maxilla and mandible (alveolar process). Gingival sulcus and epithelial attachment. Eruption of the teeth. Shedding of the deciduous teeth. Oral mucous membrane. Glands of the oral cavity. Temporomandibular joint. Maxillary sinus. Technical remarks. References. Index.

Note: The individual chapters of this composite work were drafted by 18 authorities and each man's draft was then criticized by all the other contributors. The original matter and the discussions were then incorporated in the final text by the editor. The volume is designed for the advanced student and the practitioner and its purpose is to increase the understanding of the biology of teeth and related structures, and to indicate the application of basic biological knowledge in dental practice. It is well illustrated.

O'ROURKE, JOHN T., AND LEROY M. S. MINER

Dental education in the United States. With a foreword by Raymond A. Kent. Philadelphia: W. B. Saunders Company, 1941. 367 p. illus. 23 cm. \$5.00.

2697

Contents: Introduction. Evolution of modern dentistry. Aims of dental education. Qualification for study of dentistry. Instruction. Curriculum. Basic sciences. Basic techniques. Clinical dentistry. Orthodontia in dental course. Training in general medicine for dental student and in dentistry for medical student. Need for modification of dental course. Need for financial support. Research and dental education. Internship. Postgraduate and graduate education. Positions available to graduates. Relation of licensure to dental education. Public and professional aspects of dentistry. Index.

Note: The purpose of this book is to set forth what appears to be opportunities of dental education for further progress and

more effective public service. It will interest many different groups but appeals most to educators, vocational counsellors, students of dental history, and members of the dental profession in general who wish to follow the progress of dental education. Suggested modifications in the dental education program are with the primary purpose of raising the level of dental education to a point consistent with the enlarged body of knowledge in dentistry and its related fields.

PADGETT, EARL CALVIN

Surgical diseases of the mouth and jaws. Philadelphia: W. B. Saunders Company, 1938. 807 p. illus. 25 cm. \$10.00. 2698

Contents (abridged): Diagnosis. Anatomic considerations. Wounds of soft tissues. Complications. Injuries of bony framework, teeth and alveolar processes. Fractures of upper and lower jaws. Fixation for fractures of lower jaw. Dislocation of lower jaw. Inflammations and diseases of soft structures of and about teeth. Removal of teeth. Inflammations and diseases of face, lips, buccal and pharyngeal cavities, antrum, involving the neck, of jaw bones, temporomandibular joint, salivary and lachrymal glands. Neuralgias and motor derangements. Malrelations of teeth and jaw bones. Facial clefts. Repair of cleft lip. Operations for repair of cleft palate. Anomalies, sinuses, cysts and benign tumors of congenital origin. Benign tumors of soft tissues. Malignant neoplasms of soft tissues, irradiation treatment, operations. Management of lymphatic areas tributary to epidermoid carcinoma. The odontomas. Resections of jaw bones. Surgical and prosthetic restoration of deformities. Anesthesia. Index.

Note: The author's aim was to include in this book such material as would find use in the hands of the medical and dental student, surgeon, medical practitioner, dentist, and specialist. Consequently its scope is broad but the material is carefully organized. Of special interest to the dentist and oral surgeon is the coverage of fractures and dislocations. The physician will find use for the discussions of such subjects as stomatitis, trench mouth, pemphigus, smoker's patch, lymphadenitis, and of general diseases which present oral symptoms. All treatments, both medical and surgical, are given in detail, and operative procedures are well illustrated. There are 334 illustrations and each chapter has its own bibliography.

POLLIA, JOSEPH ANDREA

The fundamental principles of alveolo-dental radiology; a text book dealing with the technics of taking radiographs of the teeth and osseous tissues of the human jaws, with an analytical treatise on their interpretation as a basis of diagnosis of oral lesions. With 774 illustrations. Brooklyn, N.Y.: Dental Items of Interest Publishing Co., Incorporated, 1930. 543 p. illus. 25 cm. \$8.00. 2699

Contents: Essential features of the Roentgen ray. X-ray apparatus. Production of Roentgen ray. Factors which determine resultant X-ray image. Characteristics which distinguish a good alveolo-dental radiograph. Reproduction of anatomical detail. Principles of technique in alveolo-dental radiology. Outline of operative technique. Details of operative technique. The teeth. Examination of alveolo-dental radiographs. Index of illumination of radiopacity. Alveolo-dental structures. Radiographic anatomy of the alveolar bone and alveolo-dental tissues. Radiographic anatomy of the mandible and adjacent tissues, dental structures. Anatomical variations and pathological variations in the index of illumination. Bone atrophy and hyperplasia. Radiographic records of normal alveolar bone. Radiographs showing effects of atrophying inflammation. Alveolar cancellations in hyperplasia. Disuse atrophy in the mandible, maxillae, and in relation to restorative appliances. Traumatic, general and pressure atrophy. Radiographs depicting pressure atrophy and pericementomas. Radiographic studies of radicular cysts. Alveolar, infective and traumatic hyperplasia. Alveolo-dental tumors. Radiography in preventive dentistry.

Note: The author describes the appearance of normal bone and changes caused by absorption, atrophy, and hyperplasia, and shows the reader how to differentiate among various other lesions, such as osteomyelitis and tumors.

PRINZ, HERMANN

Dental formulary; a practical guide for the preparation of chemical and technical com-

pounds and accessories as used in the office and laboratory by the dental practitioner, with an index to oral diseases and their treatment. Sixth edition, thoroughly revised. Philadelphia: Lea and Febiger, 1941. 352 p. illus. 20 cm. \$3.50. 2699a

Contents: Plaster of paris preparations, separating media, cast varnishes, investment compounds for metallic plate bases and cast inlays, moulding materials, etc. Gutta-percha preparations, dental rubbers, modelling and inlay waxes, plastic impression compounds, etc. Cements, adhesives and varnishes. Hard and fusible alloys, solders, fluxes and amalgams; refining of precious metals; tempering of metals; metal polishes, etc. Electro-plating coloring, lacquering, and etching of metals. Preparations for the mouth and teeth. Pharmaceutical compounds. An index to oral diseases—their etiology, diagnosis and treatment. Immediate treatment of acute poisoning. Saliva and urine analysis. Diagnostic hints. Miscellaneous. Tables. Index.

Note: This book is intended to be a handy guide for the busy dentist and dental laboratory worker. The items are selected from the English, German, and French literature, and are presented in logical fashion as needed by the dental worker. Extra features are an index to dental diseases; a chapter of useful general facts, and a section of mathematical and other tables. The sixth edition includes new compounds, and discards older ones found to be unsatisfactory.

PRINZ, HERMANN, AND SIGMUND S. GREENBAUM

Diseases of the mouth and their treatment; a text-book for practitioners and students of medicine and dentistry. Second edition, thoroughly revised; illustrated with 324 engravings and 12 colored plates. Philadelphia: Lea & Febiger, 1939. 670 p. illus. (part col.) 24 cm. \$9.00. 2699b

Contents (abridged): Embryology and anatomy of the oral cavity. The physiology of the oral cavity. The significance of the teeth in relation to oral digestion. Examination of the oral cavity. Symptomatology of general disturbances within the oral cavity. Oral hygiene and dental prophylaxis. Oral manifestations of metabolic disturbances, of blood dyscrasias, of avitaminoses and of the ductless glands. Oral manifestations of infectious diseases. Oral manifestations of tropical diseases, stomatomyces and animal parasites. Oral manifestations in skin diseases. Diseases of the tongue. Diseases of the lips, cheek and palate. Diseases of the salivary glands and the floor of the mouth. Cervicofacial adenopathies. Diseases of the oral cavity associated with nervous disturbances. Tumors and cysts of the oral cavity. Therapeutic suggestions. General literature on diseases of the mouth.

Note: In the preparation of the second edition of this work, the text has been subjected to a thorough revision. A new chapter on lymphadenitis has been added, together with articles on Paget's disease, Schüller-Christian disease, hereditary pseudo-hemophilia, sarcoidosis, and numerous other additions. The book has been prepared for both the medical and dental professions.

SALZMANN, JACOB AMOS

Manual for dental technicians; vulcanite. New York: Pitman Publishing Corporation, 1938. 346 p. illus. 23 cm. \$4.00. 2700

Contents: Introduction. Origin of dental mechanics. Vocational development. Vocational analysis. Safety instruction for dental technicians. Wax technic. Plaster technic. Preparation of plaster impressions for casts. Dental cast technic. Preparation of denture bearing areas. Trial denture base technic. Biteplate technic. Articulating technic. Morphology (study of form) of artificial teeth. Arranging artificial teeth. Denture waxing technic. Denture flasking technic. Denture tin-foiling technic. Wax elimination technic. Vulcanite denture cleansing technic. Denture trimming technic. Denture polishing technic. Denture repair technic. Appendixes. Glossary. Index.

Note: A laboratory manual for dental technicians, intended for use as a text in vocational school courses in dental mechanics. The information is divided into individual units for progressive instruction which should be learned in the order in which they are presented. Each unit is further divided into (a)

processes or principles and (b) project or jobs. Under the former are listed the various underlying vocational principles and under the latter are the exact jobs which the learner must perform to master the principle involved. There are numerous illustrations of equipment and technique.

SALZMANN, JACOB AMOS

Principles of orthodontics. 450 illustrations. Philadelphia: J. B. Lippincott Company, 1943. 674 p. illus. (part col.) 23 cm. \$10.00. 2701

Contents: Orthodontics and preventive dentistry. Orthodontics and prophylactic orthodontics. Growth and development. Body growth and carpal index. Development and growth of the head. Developmental anatomy and physiology of the face and jaws. Development of dentition. Anomalies of tooth eruption and formation. Ontogenic development of the occlusion of the teeth. The endocrines in relation to dentofacial deformities. Nutrition in relation to dentofacial development. Etiologic factors in dentofacial deformities. Classification and diagnosis of dentofacial anomalies. Differential diagnosis and prognosis. Orthodontic examination of the patient. The prevention and treatment of incipient malocclusion. Mechanotherapy in orthodontics. Dentofacial changes in orthodontics. Indexes.

Note: This comprehensive textbook and reference work for dental students and practitioners attempts to correlate and canalize the various aspects of orthodontic knowledge based on the literature of the subject. The author stresses the fact that the successful practice of every phase of orthodontics, and more especially the prevention and interception of dentofacial deformities, depends in large measure on the proper understanding of growth and development in correlation to genetic tendencies, environmental influences, and human behavior. The subject matter is presented from the standpoint of its clinical application based on a comprehensive consideration of the responsible biologic factors. There are 450 illustrations in the text and extensive bibliographies at the end of each chapter.

SCHLOSSER, RUDOLPH OSCAR

Complete denture prosthesis. 583 illustrations on 285 figures. Philadelphia: W. B. Saunders Company, 1939. 389 p. illus. 24 cm. \$5.00. 2702

Contents: Objectives. Oral anatomy and physiology and their relation to body metabolism. Masticatory mechanism. The teeth. Case history, examination, diagnosis and prognosis. Application of physics and other requisites for success. Preliminary impressions and study casts. Tooth selection. Individually prepared impression trays. Comparison of impression materials commonly used in complete denture prosthesis. Anatomical and physiological factors of special importance in taking of impressions. Secondary impressions. Casts, base-plates, mounting casts and occlusion contour rims. Relation of denture space to restoration of lost facial dimension and contour. Registration of positional relations of jaws and transfer of recorded denture space to the articulator. Arranging teeth in compliance with esthetic and functional requirements. Trying in wax mold dentures. Perfecting articulation and converting wax models into finished dentures. Checking fit of completed dentures and establishing occlusal balance. Instructions to patient. Adjustment service during initial period of use. Maintenance and corrections of dentures. Immediate denture prosthesis. Modification in technic for constructing single complete dentures. Complete denture prosthesis for anomalies of jaw form and relation. Index.

Note: The purpose of this book is to furnish the student—undergraduate, graduate, or postgraduate—with a guide to a better understanding of the fundamental principles involved in complete denture prosthesis and the means to a solution of these problems. It is a presentation of the clinical and laboratory procedure necessary in this field of practice. Arrangement of material is in two sections, thus enabling the graduate dentist to skip, if desired, the more elementary discussions which the undergraduate must master before taking up actual diagnostic and technical procedure. In general the entire book is laid around an understanding of the application of functional principles to specific problems related to the making of complete denture prostheses. At the end of chapters will be found lists of "references cited" and also of supplementary reading.

SCHWARTZ, JACOB R.

Cavity preparation and abutment construction in bridgework. A treatise on the fundamental principles and the technical phases governing the cutting of cavities or preparations in

natural teeth for purposes of anchorage; impression methods for accurate reproduction and the construction of inlays and abutments in accordance with modern successful casting procedures. Brooklyn, N.Y.: Dental Items of Interest Publishing Co., Inc., 1936. 354 p. illus. 25 cm. \$6.50. 2703

Contents (abridged): Practical preparations. Fundamental principles of cavity preparation. Description of preparations. Factors of differentiation in abutment preparations. Operative and technical procedures. Preparations on upper bicuspids. Upper molars. Lower molars. Porcelain-faced cast jacket crown. All-gold crown. Matrix crown. All-cast crown. Technical factors. Inlay impression methods. Elastic impression material. Dental castings. Inlay investment compound. Casting ring. Controlled casting. Casting gold.

Note: For students and practicing dentists. The book is abundantly illustrated with reproductions of photographs and drawings made by the author. A bibliography is included.

SCHWARTZ, JACOB R.

Modern methods of tooth replacement; a categoric treatise on the manifold methods by which one or more missing teeth may be replaced, employing any of the approved systems of construction. With 1881 original illustrations, executed and drawn by the author and comprising 1507 drawings, 357 photographs and 17 charts. Brooklyn, N.Y.: Dental Items of Interest Publishing Company, Inc., 1942. 748 p. illus. 24 cm. \$10.00. 2704

Contents: General diagnostic survey. Specific diagnostic survey. Critical study of abutment possibilities. A survey of edentulous spans of areas for the restoring of missing teeth and its influence in determining the selection of the type of restoration. Fixed bridgework—historical review. Precision slotted attachment removable bridgework. Partial dentures. Clasps. Pontics. Model duplication. Methods and procedures for the making of duplicates of master models. Plastics in dentistry. Gold and its alloys for the construction of restorations. Some general remarks on impressions methods and the materials used for them. Obtaining occlusal registers or bites and articulators. Anterior fixed restorations. Construction of posterior fixed restorations. Removable bridge construction with the use of precision. Slotted attachments. Operative and prosthetic technic in partial denture construction.

Note: An advanced volume on prosthetic dentistry. All types of restorations are described and illustrated.

SCHWARTZ, JACOB R.

Practical dental anatomy and tooth carving; a treatise on the essentials of dental anatomy as it pertains to the tooth crown and the principles and technique for carving and reproducing the tooth form, with three hundred and six original illustrations by the author. Brooklyn, N.Y.: Dental Items of Interest Publishing Co., Inc., 1935. 233 p. illus. 25 cm. \$3.50. 2705

Contents (abridged): Dental anatomy. Detailed description of the teeth in the upper maxilla. Detailed description of the teeth in the lower maxilla. Histological structure of the teeth. Congenital deviations from normal tooth form. Reproduction or carving of tooth form. Tooth carving technique. Progressive carving technique. Carving technique.

Note: This work describes and illustrates the anatomy of the teeth. It also outlines in a simple fashion the method of carving teeth.

SEARS, VICTOR HUGO

Basic principles in dentistry. New York: Pitman Publishing Corporation, 1942. 195 p. illus. 23 cm. \$3.50. 2706

Contents: General observations. The structures involved. Stamina of the tissues. Materials and equipment. Principles of physics. Mechanical considerations of teeth. Examination. Art and aesthetics. Index.

Note: Principles that apply to all branches of dentistry with applications to prosthetics situations. The author has consulted authorities in such allied fields as art, anatomy, physics, phonetics, and engineering. Original schematic illustrations are featured. For the student as well as the experienced dentist.

SELDIN, HARRY MENDEL

Practical anesthesia for dental and oral surgery, local and general. Second edition. Philadelphia: Lea & Febiger, 1942. 560 p. illus. 24 cm. \$7.00. 2707

Contents: Part I, Local anesthesia: Anatomical basis. Anesthetic solutions. Instrumentarium. Preparations for anesthetization. Field block or infiltration anesthesia of the maxillae and the mandible. Intraoral block anesthesia of the mandible, of the maxillae. Extraoral block anesthesia of the maxillae and mandible. Practical application of local anesthesia. Complications of local anesthesia. Part II, General anesthesia: Selection of anesthesia for oral operations. Physical and chemical properties of nitrous oxide and oxygen. Practical physical diagnosis for the dental anesthetist. Physiology of inhalation anesthesia. Control of respiration—rebreathing and carbon dioxide. Effect of nitrous oxide upon the human body. Premedication and preanesthetic suggestions. Armamentarium. Administration of nitrous oxide and its mixtures. Analgesia. Management of the recalcitrant patient. Anoxemia in nitrous oxide anesthesia. Ethylene. Cyclopropane. Divinyl ether or vinethene. Ethyl chloride. Somnoform. Intravenous anesthesia. Resuscitation.

Note: In this edition, the newer inhalation anesthetic agents such as cyclopropane and vinethene, together with the techniques of their administration, are examined and evaluated. Much space has also been devoted to a description of the intravenous anesthetics. A new chapter deals extensively with anoxemia and its relation particularly to nitrous oxide-oxygen anesthesia and includes case histories and postmortem results following anesthetic and post-anesthetic deaths. Because of the widespread attention currently focused in that direction, the chapter on analgesia has been expanded. The discussion of naso-tracheal anesthesia has also been revised, expanded, and more fully illustrated.

SKINNER, EUGENE WILLIAM

The science of dental materials. Second edition, revised. Philadelphia: W. B. Saunders Company, 1940. 421 p. illus. 24 cm. \$4.75. 2708

Contents (abridged): Physical properties of dental materials. Uses and manipulation of dental plasters. Impression compound. Hydrocolloidal impression materials. Denture base materials: vulcanite, synthetic resins. Acrylic resins. Comparison of denture materials. Abrasives and polishing agents. Dental porcelains. Dental cements. Science of metals. Physical phenomena of grain structure. Gold foil and its manipulation. Types of alloys and their constitution. Corrosion of metals and alloys. Dental wrought gold alloys. Dental casting gold alloys. Inlay casting wax. Dental inlay casting investments. Dental casting procedure. Joining of metals. Dental amalgam alloys. Steel. Stainless steel. Miscellaneous manipulations of steel in dentistry. Technic metals and alloys. Gutta-percha. Appendix. Index.

Note: Although primarily for the dental student, this book has definite appeal to the dental technician and to the practicing dentist. The aim has been to coordinate and summarize fundamental background material which heretofore has been found only in scattered form throughout engineering, chemical, and dental literature. Specifically, the book familiarizes the reader with the sources, composition, and properties of materials used; teaches an understanding of their scientific basis; tells how to manipulate these materials intelligently, and how to evaluate new materials and processes on a rational and scientific basis; and finally seeks to stimulate an interest in research for the further improvement of materials and their application in dental health service. References to the literature will be found at the ends of chapters. There are 138 illustrations. For the second edition, some rearrangement of material was made in order to improve the teaching qualities of the text. Much new material has been introduced as, for example, a new chapter on hydrocolloid impression materials, recent advances on denture resins, new conceptions of inlay wax manipulation, the Gayler theory of the setting of amalgams, and a new chapter on silicate cements.

SPENCER, PAUL GUY

Prevention of malocclusion. With 217 illustrations. St. Louis: The C. V. Mosby Company, 1941. 254 p. illus. 25 cm. \$5.00. 2708a

Contents: Possibilities and limitations of prevention. Dentures. Child psychology. Classification. The examination. Impressions, models, records. Economics. Growth and development. Appliances. Value of X-ray. Treatment. Diet. Internal secretions. Inheritance.

Note: A handbook for the practicing dentist, including not only descriptions and illustrations of the procedures to be used in the prevention or correction of malocclusion, but, as indicated by the contents, sections on the relations of the operator to his young patients and, from a monetary standpoint, to the patient's parents.

SWENSON, MERRILL GUSTAF, AND VINCENT R. TRAPOZZANO

Complete dentures. Nine hundred five illustrations, ten in color. St. Louis: The C. V. Mosby Company, 1940. 736 p. illus. (part col.) 25 cm. \$10.00. 2709

Contents (abridged): Preliminary maxillary impression. Preliminary mandibular impression. Zinc oxide-eugenol paste impressions. Mounting the casts on the articulator. Checking of relation records. Post dam, check of esthetics. Waxing, flasking, and processing. Immediate denture construction. Surgery and insertion of denture. Perfection of occlusion. Anatomy and physiology in relation to denture construction. Denture diagnosis, prognosis, treatment planning, and patient instruction. Fundamentals of impression making. Securing centric and protrusive relations. Occlusion. Face-bow. Articulators. Surgery. Selection of teeth. Materials. Maxillary cast-gold base. Repairs and duplication of complete dentures. Complete maxillary denture opposing partial mandibular denture. Wax extension. Complete maxillary denture against natural mandibular teeth. Notes on the evolution of full and partial dentures, by S. Harold Supplee. Bibliography. Index.

Note: This book for students of dentistry and dental mechanics presents a description of the technical procedures on the construction of a set of complete dentures, together with the fundamental and explanatory considerations underlying the procedures, as well as a summary of minor related techniques and material. The technical sequences are separated from the related fundamentals in order to avoid confusion. The numerous photographs and drawings occupy considerably more space than the actual text material, which is devoted mainly to analysis of the methods shown in the illustrations. The bibliography covers about 550 references arranged by subject matter.

THOMA, KURT HERMANN, AND OTHERS

Oral diagnosis, with suggestions for treatment, by Kurt H. Thoma. With contributions by Fred Trevor, Henry Goldman, and David Weisberger. Second edition, revised. Philadelphia: W. B. Saunders Company, 1943. 495 p. illus. (part col.) 24 cm. \$6.75. 2710

Contents (abridged): Examination. Investigation of deficiency states. Special examinations for dental and oral diseases. Consultations. Diagnosis. Prognosis. Treatment planning. Recommendations to the patient. Final examination. Follow-up examination. Diagnosis of malformations of head and their relation to face and jaws; of maldevelopment of jaws, lips, mouth and tongue, and malocclusion of the teeth; of malformations of the teeth; of general dental and oral conditions; of environmental changes in the teeth; of odontitis; of periodontal diseases. Diseases of the partially and completely edentulous mouth. Diagnosis of diseases and swellings of oral mucosa, lips and tongue. Diagnosis of wounds and burns; of fractures of teeth and jaws; of diseases of the jaws; of tumors of and in the jaws; of diseases of the mandibular articulation; of swellings of the soft tissues of face and neck; of neurologic complaints; of oral foci, potential sources of systemic disease. Symptoms of somatic disease casually related to oral infections. Glossary. Bibliography. Index.

Note: This book was written with several aims in mind. It is designed as a text for the dental student; it is planned as a ready reference to the dental practitioner and pathologist; and it is intended also for the medical student and the medical practitioner as a guide toward better understanding of oral disease and its bearing on diseases in general as well as those oral disorders for treatment of which the patient will usually consult his physician. In presenting his material, the author goes into etiol-

ogy, symptomatology, pathologic development, histologic changes, including oral manifestations of diseases and conditions of systemic origin. Diseases and conditions are classified first according to their anatomic relations, then by their most evident symptoms. An index precedes each classification in order that diagnostic facts may be quickly located. For the second edition, many important improvements were made. A discussion of prevailing methods of treatment now concludes each chapter. There is a new chapter on environmental changes in teeth, an enlarged chapter on fractures of teeth and jaws; a new chapter on diseases of partially and completely edentulous mouths; a new chapter on wounds and burns. One hundred thirty-three new illustrations have been added, making 666, 63 in colors.

THOMA, KURT HERMANN

Oral pathology; a historical, roentgenological, and clinical study of the diseases of the teeth, jaws, and mouth. Second edition, with 1388 illustrations, including 128 in color. St. Louis: The C. V. Mosby Company, 1944. 1328 p. illus. (part col.) 25 cm. \$15.00. 2710a

Contents (abridged): Part I, Experimental pathology: Hereditary influences in anomalies of teeth and jaws. Endocrine influences on development of teeth and jaws. Nutritional influences on development of teeth and jaws. Part II, Developmental anomalies of teeth: Developmental anomalies of dentition. Pathology of form and structure of teeth. Part III, Developmental anomalies of head: Congenital malformations of face and jaws. Maldevelopment of face and jaws and malocclusion of teeth. Part IV, Functional changes of teeth: Physiologic pathology of teeth. Environmental pathology of teeth. General disease. Pathologic effects of dental restorations. Part V, Traumatic injuries of teeth: Concussion of teeth. Fracture of tooth. Odontitis. Dental caries. Dentoalveolar abscesses. Part VII, Periodontal diseases: Periodontal atrophy. Gingivitis. Marginal periodontitis. Part VIII, Extension of odontogenic infection: Infection by continuity. Infection through aspiration and deglutition. Focal infection. Part IX, Diseases of the jaws: Traumatic diseases of jaws. Atrophy of jaws. Infectious diseases of jaws. Part X, Tumors of jaws and oral mucosa: Tumors of odontogenic origin. Tumors of the soft tissues of oral cavity. Part XI, Diseases of oral mucus, lips and tongue: General inflammatory diseases. Oral diseases of metabolic origin. Oral manifestations of virus diseases. Part XII, Diseases of salivary and mucous glands.

Note: An exhaustive text, profusely illustrated, intended for reference. A large number of cases are described.

TYLMAN, STANLEY DANIEL

Theory and practice of crown and bridge prosthesis. With 1,000 text illustrations and 9 color plates. St. Louis: The C. V. Mosby Company, 1940. 815 p. illus. (part col.) 25 cm. \$10.00. 2711

Contents (abridged): History of fixed partial prosthesis. Meaning and purpose of crown and fixed partial denture prosthesis. Examination of patients. Former oral health service. Facial factors. Maxillae and mandible. Diagnosis and determination of conditions. Immediate fixed partial denture service. Hygienic and therapeutic considerations. Oral anatomy and physiology. Histological structure of teeth and supporting tissues. Loss of tooth structure due to caries and other causes. Physical and engineering principles. Biological interpretation. Intracoronal retainers, veneer crowns. Movement and abutment of teeth. Classification and types of dentures. Special problems. Preparation of anterior and posterior teeth for multisurface coronal retainers and partial veneer crowns. Intracoronal and extracoronal retainers. Complete veneer porcelain crowns. Construction of the working model. Gold alloys, heat treatment, and soldering operations. Installation, testing, and adjustment of fixed partial dentures. Recording data and instructions to patients. Construction of porcelain bridges and platinum-iridium castings. Index.

Note: The purpose of this volume is to present a text for the student and a reference book for the practitioner. Emphasis has been placed upon the importance of an analysis of the need for crown and bridge service, the more desirable and economic manner to render this service, and the relation of fixed partial denture prosthesis to the other subjects in the dental curriculum and to dental practice. Newer developments in techniques are presented to show the progress of dentistry during recent years. Numerous step-by-step drawings and photographs supplement the textual descriptions.

WHEELER, RUSSELL CHARLES

Textbook of dental anatomy and physiology. With 394 illustrations. Philadelphia: W. B. Saunders Company, 1940. 415 p. illus. 26 cm. \$6.50. 2712

Contents: Nomenclature and general considerations. Development of teeth, calcification and eruption. Physiology of permanent dentition. Physiologic tooth form which protects periodontium. Deciduous teeth. Maxillary incisors. Mandibular incisors. Cuspids. Bicuspid. Maxillary molars. Mandibular molars. Pulp cavities of permanent teeth. Dento-osseous structures. Temporomandibular articulation—muscles of mastication—analysis of mandibular movements. Arrangement of teeth and occlusion. Glossary. Index.

Note: This book is primarily a text for students but it is of considerable interest to the practicing dentist also. The author has attempted to simplify and coordinate the current knowledge of form and function in such a way as to provide a background for all phases of dental practice. In general, the book covers the macroscopic or gross anatomy of the individual teeth; their anatomy on cross section; the alignment of the teeth in the jaws; their occlusion during the various jaw relations, and the significance of the foregoing during function. Considerable space has been allotted to the bony foundations of the teeth, important maxillary and mandibular landmarks, and the temporomandibular articulation. A brief outline of the blood and nerve supply to the teeth has been added for reference purposes. There are 1520 illustrations on 394 figures. Wherever feasible, the illustrations were made from actual photographs. Drawings were made directly from photographs or specimens.

WHEELER, RUSSELL CHARLES

Tooth form; drawing and carving; a manual. Philadelphia: W. B. Saunders Company, 1939. 71 p. illus. 29 cm. \$2.50. 2712a

Contents: Drawing to scale and carving models to scale. Plan for the laboratory course in tooth drawing and carving. Graph drawing. Individual tooth form. Plaster sculpture. Carving teeth natural size.

Note: This manual should be of interest to everyone concerned with dental anatomy. The author emphasizes the fundamental principles in tooth design that have practical application in restorative dentistry. He includes drawings of each tooth, showing the five aspects of each: labial, lingual, incisal, mesial, and distal. Each diagrammatic section of the tooth is drawn to scale, with complete instructions for accurate drawings, based on Black's table of average measurements. In the section on carving of the teeth Dr. Wheeler has included a series of excellent photographs. Here is shown the step-by-step procedure of carving each individual tooth, from the outline drawings on the block, on through the successive cuttings, to the finished carving.

WINTER, LEO

Operative oral surgery. With 1211 text illustrations, including 10 in color. Second edition. St. Louis: The C. V. Mosby Company, 1943. 1074 p. illus. (part col.) 25 cm. \$12.50. 2713

Contents: Examination of patients. Armamentarium and its care. Sutures and ligatures. Draping of patient for surgical operation. The selection of an anesthetic. Local anesthesia. Accidents following local anesthesia. General anesthesia for oral surgery operations, by Emery Andrew Rovenstine. Exodontia. Impacted teeth. Pain. Differential diagnosis of swellings of the face and neck. Oral manifestations of the blood dyscrasias. Acute abscesses and their sequelae. Healing of wounds. Cysts of the jaws. Adamantinoma. Affections of the floor of the mouth. Neoplasms in the oral cavity. Noma. Surgical preparation of the mouth for denture prosthesis. Surgical correction of pyorrhea alveolaris. Fractures. Osteomyelitis. Dislocation and subluxation of the temporomandibular articulation. Osteotomy of ascending ramus. Chemotherapy. Shock. Treatment of burns. War wounds. Surgical treatment of prognathous and orthognathous mandibles. Skeletal fixation. References. Index.

Note: This comprehensive textbook for students of oral surgery includes some of the material, in slightly altered form, presented in the author's *Textbook of exodontia*, St. Louis, Mo., 1943 described below. Special stress is laid on symptomatology and diagnosis. A complete summary of the various operative methods is avoided and only those methods are described which experience has shown to be the most practicable for each specific condition. The second edition has been revised

to meet the needs of dental surgeons in treating battle casualties. New chapters have been added on chemotherapy, shock, burns, wounds, dislocations, and treatment, plus new material on anesthesia and oral manifestations of blood dyscrasias. There are numerous roentgenograms, drawings, and photographs. About 125 references are given in the bibliography.

WINTER, LEO

Prologue
A textbook of exodontia; exodontia, oral surgery and anesthesia. Fifth revised edition. With 485 text illustrations and 7 color plates. St. Louis: The C. V. Mosby Company, 1943. 576 p. illus. (part col.) 25 cm. \$10.00. 2714

Contents: The development of local anesthesia. Modern local anesthetic agents. Local anesthesia *versus* general anesthesia. Novocaine (procaine). Apocaine, butyn, and tutocaine. Monocaine hydrochloride. Active principle of the suprarenal gland. Toxicity, symptoms, and treatment of intoxication by local anesthetics. Résumé of important local anesthetics. The instrumentarium for local anesthesia. The psychological approach to exodontia patients. Extra-oral injections. Technic of injections. Accidents and infections following local anesthesia. General anesthesia, by Emery Andrew Rovenstine. General anesthesia for ambulatory dental patients, by Anthony S. Mecca. Prevention and treatment of bleeding in oral surgery. Extraction of teeth. Chemotherapy. Surgical preparation of the mouth for denture prosthesis. Dislocation of the temporomandibular articulation. Impacted supernumerary teeth. Impacted maxillary incisors. Removal of impacted maxillary canines. Impacted maxillary premolars. Impacted first and second molars. General principles in the operation for an impacted maxillary third molar. Impacted mandible canines. Impacted mandibular pre-molars. Pericoronitis. Impacted mandibular third molars. Cysts of the jaws. References. Index.

Note: This text is intended to provide the dental student and practitioner with the fundamental facts of exodontia or extraction of teeth. A detailed analysis of various local and general anesthetics precedes the actual description of techniques, and the student is shown the anatomy and physiology of those parts of

the nervous system which are to be blocked by the anesthetic, together with the various methods of inserting the needle. Different types of instruments and their use are outlined and illustrated in step-by-step drawings and photographs. The fifth edition incorporates recent material on new anesthetics and emphasizes the extraoral technique in operative procedures requiring anesthetization of the skin surface as well as the jaws.

YEAR BOOK OF DENTISTRY

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e33*
The 1944 Year book of dentistry, edited by Charles G. Darlington, George W. Wilson, Carl W. Waldron, Stanley D. Tylman, George R. Moore, and Howard C. Miller, consulting editor. Chicago: The Year Book Publishers, Incorporated, 1944. 701 p. illus. 18 cm. (The Practical medicine year books) \$3.00. 2715

Contents (abridged): Part I, Diseases of the mouth, pathology, dental research (including oral hygiene and periodontia): Anatomy and development. Caries. Aerodontia. Fluorine. Diet, nutrition and metabolism. Periodontia. Systemic diseases. Infections. Therapeutics. Tumors. Part II, Operative dentistry: Oral medicine. Radiology. Restorative dentistry. General operative procedures. Pedodontics. Dentistry in public health. Dentistry in industry. Part III, Oral surgery: Anesthesia and analgesia. Infections and chemotherapy. Wounds and fractures. Cysts and tumors. Part IV, Prosthetic dentistry: The resilient resins and the technic for their use. Acrylics. Fixed bridges. Partial and complete dentures. Facial prostheses. Dental materials and research. Part V, Orthodontics: Etiology. Prevention. Diagnosis. Prognosis. Extraction. Treatment. Relationship with other fields.

Note: The latest issue of a series which digests the important literature published during the year in the principal countries of the world, including the United States. The abstracts are in English and in most cases are accompanied by a brief supplementary note by the editor, pointing out the particular significance of the paper abstracted. Citations to the original publications are given in footnotes. A generous number of important illustrations are included.

AVIATION MEDICINE

ARMSTRONG, HARRY GEORGE

Principles and practice of aviation medicine. Second edition. Baltimore: The Williams & Wilkins Company, 1943. 514 p. illus. 23 cm. \$6.50.

2715a

Contents: Historical. The flight surgeon. Evaluation of and introduction to pilot selection. Examination of: the eye; cardiovascular system; ear, nose and throat; neuropsychic; general physical. Care of the flyer. Noxious substances in aviation. Physical factors in flight. Effects of flight on ear. Aerial equilibrium and orientation. Airsickness. Anoxia in aviation. Acute and chronic altitude sickness. Oxygen in aviation. Effects of decreased atmospheric pressure. Aeroembolism. Sealed aircraft enclosures. Speed and acceleration. Accidents in aviation. Emotional reactions to flight. Protective flying equipment. Aerial relief and sanitation. Index.

Note: This book was written primarily for the student and practitioner of aviation medicine, but also for the regular medical student and the general practitioner, since a knowledge of this field is of universal interest. The widely scattered literature on this subject has been reviewed and the author has also contributed some entirely new and original material. He has endeavored to include everything the student of aviation medicine should know, and to exclude what is available in standard textbooks of medicine. In this second edition the text has been modified in regard to subjects which were controversial or matters of speculation at the time the first edition was published. New material, including figures and tables, has been added within the limitations imposed by the war.

BARR, EUGENE OSMUN

629.132
1327 Flying men and medicine; the effects of flying upon the human body. New York: Funk & Wagnalls Company, 1943. 245 p. illus. (part col.) 21 cm. \$2.50.

2715b

Contents: Part I, The nervous system and contributing parts: General considerations. Physical requirements and reserves. The central nervous system. The eye. The ear. Equilibrium. The neuro-physical composition. Part II, The other systems of the body: The respiratory system. The circulatory system. The digestive system. A flying trip. Final considerations. Index.

Note: This volume, written by a physician who served for two years as an instructor of flying in bombing planes, sets forth the physical requirements for trained pilots and shows how air-men can keep in top physical form. It will be of particular value to military and commercial flyers, and medical examiners. The use of simple language also makes it suitable for the general reader.

FITZPATRICK, FREDERICK LINDER, AND KARL A. STILES

The biology of flight. Prepared with the cooperation of the Civil Aeronautics Administration. Sponsored by the Institute of the Aeronautical Sciences. New York: The Macmillan Company, 1942. 162 p. illus. 22 cm. (Air-age education series) \$0.64.

2715c

Contents: Living things in the air. The nature of flight. Altitude effects. Other pressure and temperature effects. Acceleration and the human body. The sense organs and flight. Physical fitness for flight. Air travel and disease control. Selected references. Selected motion pictures. Index.

Note: This textbook for students of pre-flight aeronautics covers the subject of the effect of flight upon the human body. Each chapter is concluded with a brief summary of its contents.

GEMMILL, CHALMERS LAUGHLIN

Physiology in aviation. Springfield, Ill.:

Charles C. Thomas, 1943. 129 p. illus. 22 cm. \$2.50.

2715d

Contents: Physiology applied to aviation. Historical introduction. Air. Gas laws and their application. Mechanics of respiration. Alveolar air. Carriage of oxygen by the blood. Carrying capacity of the blood for carbon dioxide. Control of respiration. Acute effects of anoxia. Use of oxygen in aviation. Chronic effects of altitude. Aeroembolism. Circulation. Control of the circulation. Effects of acceleration on man. Temperature control of the body. Physiology of muscular exercise. Instrument flight, by Lieutenant Frederick B. Lee, (T), USNR. Index.

Note: A study of the physiological reactions which are found to take place in men taking part in plane flights. The material covered is essentially that included in the lectures given at the School of Aviation Medicine, Naval Air Station, Pensacola, Florida, where the author is an instructor.

GROW, MALCOLM CUMMINGS, AND HARRY G. ARMSTRONG

Fit to fly; a medical handbook for fliers. New York: D. Appleton-Century Company, Incorporated, 1941. 387 p. illus. 20 cm. \$2.50.

2715e

Contents: Preface. Foreword, by Major-General H. H. Arnold. Medicine in aviation. Protecting your health. Mental hygiene. Diseases of the heart and circulatory system. Care of the eye. The digestive system and the aviator's diet. Stimulants and the airman. Air, sunlight, exercise. Discussion of the flying examination. The eye examination and disqualifying defects. The ear, nose, and throat examination and disqualifying defects. The general physical examination and disqualifying defects. Examination of the nervous system and disqualifying defects. The atmosphere and respiration. Altitude sickness. Oxygen and oxygen equipment. Effects of atmospheric pressure changes. Effect of accelerations on the body. Sensory illusions in flight. Protective devices and equipment. Fatigue in flight. Aviation accidents and first aid. Tropical diseases. Index.

Note: A manual of aviation medicine intended primarily for army aviators. The topics are divided into three broad groups: the health problems that would be met in everyday life, the periodic physical examinations which fliers must undergo, and the physical effects of flight itself. The book does not attempt to set itself up as a substitute for the physician but rather to present the facts of a medical nature which the flier should know in order that he may reduce to a minimum the chances of his developing conditions which might interfere with or end his career.

HOFF, EBBE CURTIS, AND JOHN FARQUHAR FULTON

A bibliography of aviation medicine. Prepared for the Committee on Aviation Medicine, Division of Medical Sciences, National Research Council, acting for the Committee on Medical Research, Office of Scientific Research and Development, Washington, D.C. Springfield, Ill.: Charles C. Thomas, 1942. 237 p. 28 cm. (Yale University. School of Medicine. Yale Medical Library. Historical Library. Publication no. 5) \$4.00.

2716

Contents (abridged): History and general aspects of aviation. The special physiology of aviation and conditions simulating flight. The special pharmacology of aviation and conditions simulating flight. The special psychology of aviation and conditions simulating flight. Aeromicrobiology. Diseases and accidents in aviation and conditions simulating flight. Selection and assessment of efficiency of flight personnel. Training, performance and fatigue of flight personnel. Protection of flight personnel; pre-

ventive medicine and therapeutics of aviation. Aviation and public health (sanitary aviation). Organization of aviation medicine. Special problems. General studies in aviation medicine. Bibliographies. Indexes.

Note: The term "aviation medicine" has been interpreted liberally for this bibliography. Thus such topics as protective clothing for aviators are covered as well as strictly medical topics. The scope as to language is world-wide; and monographs, books, and periodicals have been included. Titles in Russian, Japanese, and a few other languages have been translated or transliterated. In most cases the material cited has been examined in the original and the contents examined from the viewpoint of classification. References not examined in the primary source have a special mark. There are 6,029 entries and the number of journals indexed is approximately 900.

HOFF, MARGARET PHEBE, AND OTHERS

A bibliography of aviation medicine. Supplement by Margaret Phebe Hoff, Ebbe Curtis Hoff and John Farquhar Fulton. Published by the Committee on Aviation Medicine, Division of Medical Sciences, National Research Council, acting for the Committee on Medical Research, Office of Scientific Research and Development, Washington, D.C. New Haven, Conn.: Yale University, 1944. 109 p. 28 cm. (Yale University. School of Medicine. Yale Medical Library. Historical Library. Publication no. 9) \$2.50. 2717

Note: The scope and arrangement is essentially the same as in the main work described above. The principal subject headings are the same, but the rapidly expanding literature with its emphasis on practical aspects has made necessary the use of a new subheading, *Survival and rescue*. Most of the 2,336 references included in this supplement represent publications issued between May 31, 1942 and May 31, 1944, but a considerable number of references to older material which were discovered after the main work went to press have been included also.

UNITED STATES. WAR DEPARTMENT

Notes on cardiology in aviation medicine. Prepared under the direction of the Surgeon General. Washington, D.C.: Government Printing Office, 1940. 204 p. 22 cm. (Technical manual no. 8-305) Paper, \$0.25. 2717a

Contents: General. Physical examination and related subjects. Diseases seen in applicants for flying training. Diseases seen in older pilots. End results of cardiac disease. Effects of altitude upon heart. Index.

Note: A manual for army physicians concerned with the heart of the aviator. At the conclusion of each section of the manual is a brief list of recommended texts.

UNITED STATES. WAR DEPARTMENT

Notes on eye, ear, nose, and throat in aviation medicine. Prepared under the direction of the Surgeon General. Washington: Government Printing Office, 1940. 286 p. illus. 22 cm. (Technical manual no. 8-300) Paper, \$0.35. 2717b

Contents: General. Nose. Maxillo facial injuries. External and middle ear. Effect of flight on middle ear. Anatomy and physiology of inner ear or labyrinth. Vestibular nystagmus. Vestibular vertigo. Vestibular tests. Blind flying. Miscellaneous ear conditions. General methods and equipment for eye examination. Visual acuity. Depth perception. Ocular movements. Accommodation. Inspection of the eye. Color vision. Field of vision for form and colors. Refraction. Ophthalmoscopic examination. Appendix: Abbreviations and references. Index.

Note: A complete illustrated manual covering the subjects indicated in the title issued for the use of army doctors concerned with aviation medicine.

UNITED STATES. WAR DEPARTMENT

Physiological aspects of flying. Washington, D.C.: Government Printing Office, 1943. 79 p. illus. 21 cm. (Technical manual no. 1-705) Paper, \$0.15. 2717c

Contents: Foreword. Atmosphere of the earth. Effects of high-altitude flying upon respiration and circulation. Effects of pressure changes on the human body. Anoxia. Parachute descents. Oxygen equipment. Carbon monoxide poisoning. Effects of rapid changes of motion and direction upon the human body. Equilibrium and airsickness. Night vision. Effects of extreme temperature on the body. Types of first-aid kits. Index.

Note: This manual for army aviators explains in everyday terms the various physical and physiological problems that arise during flying and gives in detail the latest knowledge of proved solutions to these problems.

ZIM, HERBERT SPENCER

Man in the air; the effects of flying on the human body; illustrated with drawings by James MacDonald and with photographs. New York: Harcourt, Brace and Company, 1943. 332 p. illus. 21 cm. \$3.00. 2717d

Contents: Man in the ocean of air. The air in which we live. Our bodies. Adjustment to temperature. Respiration and breathing. Oxygen and oxygen masks. Present day oxygen masks. Aeroembolism. Pressure suits and pressure cabins. High up on the ground. Changes in speed and direction. Positive and negative acceleration. Eyes to see. Ears to hear. Ears are for more than hearing. Air sickness. Flying fatigue. Smart enough to fly. Tests and more tests. Keeping physically fit. Safety in flight. Flying and public health. Bibliography. Index.

Note: An account of the physiological aspects of flying, written for the general reader and for the youth of high-school age interested in becoming a pilot. The bulk of the material and most of the photographs have been supplied by the United States Army Air Forces.

INDUSTRIAL MEDICINE

CHENOWETH, LAURENCE BENJAMIN, AND WIL-
LARD MACHLE

Industrial hygiene; a handbook of hygiene
and toxicology for engineers and plant man-
agers, with a foreword by Herman Schneider.
New York: F. S. Crofts & Company, 1938. 235 p.
illus. 21 cm. \$2.50. 2718

Contents: Historical introduction. Workmen's compensation. Industrial accidents. Fatigue. Physical factors in industrial hygiene. Health service in industry. First-aid treatment of injuries. Occupational intoxication. Chemical burns. Oxygen deficiency and asphyxia. Dust diseases. Respirators, gas masks, and breathing apparatus. Occupational affections of the skin. Industrial neuroses and malingering. Miscellaneous occupational affections. Appendix: Bandaging. Additional information on splinting. Methods of rescue in asphyxiation. Artificial respiration other than the Schaefer prone pressure method. Transportation of the injured. Index.

Note: A textbook for engineering students and others interested in industrial hygiene, as well as a reference book for plant managers and practicing industrial engineers. The prevention of occupational disabilities is shown to be a responsibility of the engineer and the supervisor, and the means of recognizing and evaluating new potential hazards are discussed in detail. No knowledge of medicine or physiology is required for the understanding of the material presented.

DREESSEN, WALDEMAR CLAUS, AND OTHERS

Health and working environment of nonfer-
rous metal mine workers, by Waldemar C.
Dreessen, Richard T. Page, J. Walter Hough,
Victoria M. Trasko, J. L. Jones, and R. W.
Franks. Washington, D.C.: Government Print-
ing Office, 1942. 110 p. illus. 23 cm. (United
States. Public Health Service. Public health
bulletin no. 277) \$0.20. 2719

Contents: Abstract. Introduction. Summary. Recommendations. The working environment: General considerations. Geography and geology of Utah ore deposits. Mining methods. Occupational classification. Results of engineering study. Sanitary survey. Skin irritants and sources of infection. Health of the workers: General procedure of medical study. Characteristics of the metal mining population. Diagnosis and symptomatology of silicosis. Symptoms and signs in relation to lung-field markings and silicosis. Incidence of silicosis. Representative case histories. Pulmonary tuberculosis among metal mine workers. Lead poisoning among metal mine workers. Cardiovascular findings. Other physical findings. The physiological response of peritoneal tissue to Utah metal mine dusts. Acknowledgments. References. Appendix: Definitions of occupations.

Note: This bulletin reports the results of a field study in 1939 of the health and environment of nonferrous metal mine workers in three representative mines in the state of Utah. Occupational and medical histories and physical and roentgenological examinations were made of 783 nonferrous metal mine workers. Engineering studies were made in each mine to determine the environmental factors which might have a bearing on the health of workers engaged in particular occupations. The Utah State Board of Health cooperated in the preparation of this report.

DREESSEN, WALDEMAR CLAUS, AND OTHERS

Pneumoconiosis among mica and pegmatite
workers, by Waldemar C. Dreessen, J. M. Dal-
lavallo, Thomas I. Edwards, R. R. Sayers, H.
F. Easom, and M. F. Trice. Washington, D.C.:

Government Printing Office, 1940. 74 p. illus.
23 cm. (United States. Public Health Service.
Public health bulletin no. 250) \$0.15. 2720

Contents: Abstract. Introduction. Description of the working environment. Dust control. Use of the terms "pneumoconiosis" and "silicosis." Results of the medical study. Incidence of silicosis and pneumoconiosis in relation to dust concentration. Pulmonary tuberculosis. Heart findings. Summary. Recommendations. Acknowledgments. Appendix: Averaging and weighting of dust exposures. The physiological response of peritoneal tissue to mineral dusts encountered in the Spruce Pine region. Annotated bibliography. Index.

Note: One of a series of studies of the health hazards of the dusty trades and of the means of protecting the health of work-
ers. It presents data on health and working conditions in a group of mines, quarries, and mineral grinding plants in western North Carolina obtained in 1926 during a cooperative study carried on by the Public Health Service in conjunction with the Division of Industrial Hygiene of the North Carolina State Board of Health.

DRINKER, PHILIP, AND THEODORE HATCH

Industrial dust; hygienic significance, meas-
urement and control. New York: McGraw-Hill
Book Company, Inc., 1936. 316 p. illus. 23 cm.
\$4.00. 2721

Contents: Physical properties of dusts, fumes and mists. Effects of dusts and fumes upon man. Physical and chemical factors in pneumoconiosis. Permissible dustiness. The dust survey. Dust determination. Determination of particle size. Chemical and mineralogical analyses. Control of the dust hazard—general. Design of local exhaust systems. Air-cleaning apparatus. Air-cleaning apparatus—filtration. Dust respirators and air masks.

Note: Presentation and critical discussion of the various phases of the problem of dust control in its relation to the health of workmen, covering (1) physical aspects of dust and fume sus-
pensions and their effects upon man, (2) analysis, measurement, and microscopy of fine dusts, and (3) practical control of dusts and the use of respiratory protective devices. This book may be used as a text for college courses in hygiene and industrial sanitation, and as a reference book for sanitation engineers.

FAIRHALL, LAWRENCE TURNER, AND PAUL A.
NEAL

Industrial manganese poisoning. Washington,
D.C.: Government Printing Office, 1943. 24 p.
23 cm. (United States. National Institute
of Health. Bulletin no. 182) \$0.10. 2722

Contents: Occurrence and uses. Physio-chemical properties of manganese. Analytical evaluation of manganese. Industrial exposure to manganese. Toxicology: Industrial manganese poisoning. Experimental manganese poisoning. Treatment of chronic industrial manganese poisoning. Maximal permissible concentration of manganese. Measures for the prevention of industrial manganese poisoning. Bibliography.

Note: This bulletin is a brief treatment of the subject of manganese poisoning in industry, covering its prevalence, causes, diagnosis, treatment, and control.

FLINN, ROBERT HARROLD, AND OTHERS

Silicosis and lead poisoning among pottery
workers, by Robert H. Flinn, Waldemar C.
Dreessen, Thomas I. Edwards, Edward C.
Riley, J. J. Bloomfield, R. R. Sayers, John F.
Cadden, and S. C. Rothman. Washington, D.C.:
Government Printing Office, 1939. 178 p. illus.

23 cm. (United States. Public Health Service. Public health bulletin no. 244) \$0.30. 2723

Contents: Abstract. Introduction. Engineering study. Description of employees. Medical study. Post mortem findings in two cases of potters' silicosis. The physiological response of peritoneal tissue to pottery dusts. Mortality data. Disabling illness. Dental status of a group of potters. Summary. Acknowledgments. Annotated bibliography. Definition of occupations. Index.

Note: A report of the results of a field study of the pottery industry made in 1936-37 by the Public Health Service in cooperation with the Bureau of Industrial Hygiene of the West Virginia State Health Department. An earlier study along the same lines was published in *Lead poisoning in the pottery trades*, by B. J. Newman, W. J. McConnell, O. M. Spencer, and F. M. Phillips, Public health bulletin no. 116, 1921.

FLINN, ROBERT HARROLD, AND OTHERS

Soft coal miners health and working environment, by Robert H. Flinn, Harry E. Seifert, Hugh P. Brinton, J. L. Jones, and R. W. Franks. Washington, D.C.: Government Printing Office, 1941. 118 p. illus. 23 cm. (United States. Public Health Service. Public health bulletin no. 270) \$0.25. 2724

Contents: Abstract. Introduction. Summary. Recommendations. The working environment: General considerations. Mining methods and occupations. Results of engineering study. Sanitary survey. Control of occupational hazards. Health of the workers: General procedure of medical study. Characteristics of the coal mining population. Diagnosis and symptomatology of silicosis. Anthraco-silicosis. The physiological response of peritoneal tissue to coal dusts. Symptoms and signs in relation to lung-field markings. Incidence of anthraco-silicosis. Representative case histories. Pulmonary tuberculosis among bituminous coal mine workers. Cardiovascular findings. Other health hazards. Acknowledgments. References.

Note: This bulletin reports the results of a field study in 1939 of the bituminous coal mining industry in the state of Utah. Occupational and medical histories, and physical and roentgenological examinations were made of 545 bituminous coal mine workers. Engineering studies were made in the three mines where these workers worked to determine the environmental factors which might affect the health of the workers. The Sanitary Engineering Division of the Utah State Board of Health cooperated in the report.

GAFAFER, WILLIAM MCKINLEY, EDITOR

Manual of industrial hygiene and medical service in war industries, issued under the auspices of the Committee on Industrial Medicine of the Division of Medical Sciences of the National Research Council, prepared by the Division of Industrial Hygiene, National Institute of Health, United States Public Health Service. Philadelphia: W. B. Saunders Company, 1943. 508 p. illus. 24 cm. \$3.00. 2725

Contents: War's influence on industrial hygiene, by J. J. Bloomfield. Plant medical facilities, by O. F. Hedley. Organization of plant medical department, by O. F. Hedley. Medical services, by O. F. Hedley. Nursing services, by Olive M. Whitlock. Dental services, by Lyman D. Heacock. Organization of plant emergency medical service and integration with that of the community, by R. F. Sievers. Available services in industrial hygiene, by J. J. Bloomfield. The problem of occupational disease, by W. C. Dreessen. Occupational dermatosis, by Louis Schwartz. Engineering control of air contamination of the working environment, by Allen D. Brandt. Medical control of respiratory diseases, by W. C. Dreessen. Venereal disease control, by Otis L. Anderson. Industrial psychiatry, by Lydia G. Gerson. Health education, by Elizabeth G. Pritchard. Causes and control of industrial fatigue, by Robert H. Flinn. Nutrition in industry, by R. F. Sievers. Community sanitation, by Richard T. Page. Plant sanitation, by Allen D. Brandt. Illumination, noise, and radiant energy, by Allen D. Brandt and Harry E. Seifert. Heating, ventilating and air conditioning, by Allen D. Brandt. Maximum use of manpower, by Robert H. Flinn. Women in industry, by Hugh P. Brinton. Absenteeism, by William M. Gafafér. Index.

Note: This is the official United States Public Health Service manual which was written to meet the numerous changed health conditions in industries converted to war purposes. Issued under the auspices of the National Research Council, it was planned for the general medical profession, industrial physicians, engineers and hygienists, industrial and public health nurses, and all others similarly engaged in industrial service in order to provide guidance in dealing with industrial health hazards, many until recently of uncommon occurrence but which are now encountered with growing frequency. Great emphasis has been placed on methods of control and on the diagnosis and treatment of occupational diseases. Bibliographies are placed at the ends of chapters.

HUEPER, WILHELM C.

Occupational tumors and allied diseases. Springfield, Ill.: Charles C. Thomas, 1942. 896 p. illus. 26 cm. \$8.00. 2726

Contents: Concept and significance of occupational tumors. Occupational and accidental tumors of the skin and its appendages. Occupational tumors of the alimentary system. Occupational cancers of the respiratory system. Occupational tumors of the urogenous organs. Occupational and accidental hyperplastic and neoplastic diseases of the blood forming organs. Occupational and accidental tumors of the mesenchymatous tissues. Occupational and accidental tumors of the eye and its adnexae. Occupational and accidental tumors of the nervous system. Occupational tumors of the endocrine glands. Occupational and accidental tumors of the sex organs. Special aspects of occupational tumors. The relation of occupational neoplasia to theories of cancerigenesis. Medicolegal and public health aspects. Subject index.

Note: Concerned with the various aspects and the different types of neoplastic disorders and related diseases of occupational origin. The evidence obtained from diverse and different sources has been integrated. It is useful to persons interested in and charged with the supervision of industrial and public health hazards or concerned with the diagnosis and treatment of neoplastic diseases.

JOHNSTONE, RUTHERFORD THOMPSON

Occupational diseases; diagnosis, medicolegal aspects and treatment. Philadelphia: W. B. Saunders Company, 1941. 558 p. illus. (part col.) 24 cm. \$7.50. 2726a

Contents (abridged): Purpose of workmen's compensation. Administration and methods of evaluating disability. Function of physician as related to workmen's compensation. Gases, solvents and fumes. The metals. The dusts. Industrial back. Hernia. Dermatoses. Occupational cancer. Heat and climatic affections. Electrical injuries. Caisson disease. Medicolegal relationship of trauma to disease. Neurosis associated with trauma-malingering. Preemployment examination. Appendix: Table of toxic thresholds of common industrial substances. Index.

Note: Designed for the industrial physician, and especially with the growing needs in mind of the family physician, who, because of the war, has been brought, somewhat suddenly, face to face with problems such as those presented, this book provides a simple yet scientifically exact basis for the diagnosis, prevention, and treatment of occupational diseases and for the determination of compensation and liability. Safety engineers and others having to do with the health of those employed in industry will also find much in this book of importance to them. Dr. Johnstone takes up the causes of occupational diseases and the industries in which they occur. Of special note are the discussions of diagnosis of lead and benzol poisoning and of those diseases arising from industries using cadmium, manganese, selenium, vanadium, and other metals. Common errors in diagnosis are pointed out and the summaries which follow each disease set off briefly the significant highlights and features of that disease. References are placed at the ends of chapters. The author is director of the department of occupational diseases, Golden State Hospital, Los Angeles, California.

JONES, BENJAMIN FRANKLIN, AND OTHERS

Fatigue and hours of service of interstate truck drivers, by Benjamin F. Jones, Robert H. Flinn, E. Cuyler Hammond. Sections by Wallace H. Wulfeck, Richard H. Lee, D. D. Donahue, Heinz Specht, H. D. Baernstein, Ralph C. Channell, J. Walter Hough. General super-

vision: R. R. Jones, R. R. Sayers. Washington, D.C.: Government Printing Office, 1941. 286 p. illus. 23 cm. (United States. Public Health Service. Public health bulletin no. 265) \$0.40.

2727

Contents: Foreword, by Joseph B. Eastman. Résumé. Fatigue and hours of service of interstate truck drivers: Introduction. The field study. Results of tests. The coefficient of scoring. Discussion and conclusions. References. Special sections: Medical findings. Psycho-motor reactions. Driving and glare tests. Critical fusion frequency of flicker. Eye movements and related phenomena. Leucocyte counts. Blood chemistry. Appendix: Discussion of the statistical analysis of the data. Statistical data on the drivers (tables showing age of drivers, hours of driving, miles of driving, etc.). Acknowledgments.

Note: This bulletin reports the results of studies in the problem of fatigue and hours of service of drivers of commercial vehicles operating in interstate commerce. Investigated were the relationships between hours of driving and other conditions of work, and fatigue and physical fitness of the drivers as measured by psychological, physiological, and medical tests. Tests were made in Baltimore, Nashville, and Chicago, and altogether 889 drivers were examined. The studies were carried on at the request of the Interstate Commerce Commission.

JORDAN, HENRY H.

Workmen's compensation and the physician, a manual for the use of general practitioners and insurance carriers. With a discussion of traumatic neuroses by Paul H. Hoch. New York: Oxford University Press, 1941. 180 p. illus. 22 cm. \$3.00.

2728

Contents: The general practitioner in workmen's compensation. Roentgen examination. Causal relations between injury and disability. Aggravation of pre-existing disease. Expert opinion and disability evaluation. Physical therapy. Orthopaedic appliances. Traumatic neuroses, by Paul H. Hoch. References consulted. Index.

Note: This manual is presented as a guide for the general practitioner and the insurance carrier in the handling of compensable injuries. It stresses the physician's mental approach to compensation cases rather than attempting to cover all types of injuries or diseases arising from employment. Only general diagnostic and therapeutic problems are treated, with a view towards a better understanding of the problems of workmen's compensation laws.

KUHN, HEDWIG (STIEGLITZ)

Industrial ophthalmology. With 114 text illustrations including 2 color plates. St. Louis: The C. V. Mosby Company, 1944. 294 p. illus. (part col.) 25 cm. \$6.50.

2729

Contents (abridged): Visual testing in industry. Correction of visual defects for the job. Visual skills. Industrial eye injuries caused by solid bodies, by Albert C. Snell. Eye protection. Recent developments as related to industrial eye problems. Appendix. Index.

Note: In this monograph the author attempts to coordinate much of the essential information relating to the various problems of diseases and defects of the eye in their relation to industry and to the science of ophthalmology. Based upon research work by the Joint Committee of Industrial Ophthalmology of the American Academy of Ophthalmology and Otolaryngology and the Section of Ophthalmology of the American Medical Association, the work presents statistical data on visual skills, acuity, muscle balance, visual performance at near point distances, and medical and surgical care of eye injuries. A wide range of heavy and light industries is covered and there are numerous illustrations.

LANZA, ANTHONY JOSEPH, AND JACOB A. GOLDBERG, EDITORS

Industrial hygiene, by various authors. New York: Oxford University Press, 1939. 743 p. illus. 24 cm. (Oxford medical publications) \$8.50.

2730

Contents: Scope and organization of health service in industry. Industrial accidents and diseases. The physical examination of employees. Tuberculosis and other pulmonary diseases. The heart and its disturbances. Industrial medicine and its relation to peripheral vascular disease and injury. Care of the eyes in industry. Mental hygiene aspects of industry. Traumatic surgery. Nervous conditions resulting from injury. Physical therapy in industrial hygiene. Rehabilitation of the industrially disabled. Silicosis and asbestosis. Occupational diseases of the skin. Poisoning from lead and other heavy metals. Chemical hazards of gases and fumes. Lighting and atmospheric control. Hygiene and medical care of workers on American railroads. Industrial health education and the worker. The nurse in industry. Problems in workmen's compensation. Index.

Note: A study of those phases of medicine and hygiene which especially concern the industrial physician. Written from the latter's viewpoint, the book emphasizes the need for practicing preventive medicine, which implies a knowledge of working conditions, the physical condition of employees, and of all possible relationships between them, together with comprehensive diagnosis through industrial medical service. Bibliographies follow each chapter.

LASHER, WILLIS W.

Industrial surgery, principles, problems and practice. With 194 illustrations. Enlarged first edition. New York: P. B. Hoeber, Inc., 1942. 472 p. illus. 24 cm. \$6.50.

2731

Contents (abridged): Organization of the medical department. Space and equipment for it. General surgical considerations. Fingers and hand. Wrist and forearm. Elbow. Arm. Shoulder. Foot. Ankle. Leg. Cartilage and other injuries of the knee. Thigh. Hip. Pelvis, including coccyx and sacroiliac joint. Back. Chest wall and thoracic viscera. Neck and jaw. Face, including nose, eyes, and ear. Cranial injuries. Abdominal injuries. Miscellaneous conditions. Hernia. Strains and sprains. Chemotherapy and dehydration. Appendix. Bibliography. Index.

Note: The author has used as a basis for this book his own experience in industrial medicine. He has attempted to give a cross-section of the problems arising in the daily routine of an industrial practice, and has introduced as illustrative material many briefly summarized case-reports. The present edition is called an enlarged first, rather than a second edition, because it is not completely revised. Errors were corrected, new material was added at the end of many sections, and two new chapters were included on sprains and strains and on chemotherapy, respectively. The book is intended for industrial physicians and all other persons interested in this subject.

NATIONAL RESEARCH COUNCIL. COMMITTEE ON WORK IN INDUSTRY

Fatigue of workers, its relation to industrial production. New York: Reinhold Publishing Corporation, 1941. 165 p. 23 cm. \$2.50.

2731a

Contents: Introductory statement: Introduction. Hearings and deliberations. General conclusions. Report of the Committee, by George C. Homans: Introduction. Heat and high altitude. Some industrial causes of illness. The Western Electric researches. The interviewing method. Self-expression and labor unions. Extra-time allowances. A study of organization. Summary.

Note: The aim of the investigation, carried out by a committee appointed by the National Research Council, was to determine the physical and mental reactions of industrial workers to the conditions they are exposed to in their daily work. In an unbiased and objective way, it reveals not only the direct causes of fatigue, but the psychological origin of strikes, slowdowns, and voluntary limitation of output by workers, which waste so much invaluable time every day. It also gives the underlying reasons for the inharmoniousness which often exists between management and labor. Working conditions in factories, mining, and aviation are considered.

NATIONAL SILICOSIS CONFERENCE

Final report of the Committee on the Prevention of Silicosis through Medical Control. In four parts. Washington, D.C.: Government Printing Office, 1938. 4 v. 22 cm. (United States. Department of Labor. Division of Labor Standards. Bulletin no. 21) Paper, \$0.60.

2732

Contents (abridged): Part 1, Report on medical control. Part 2, Report on engineering control. Part 3, Report on economic, legal, and insurance phases. Part 4, Report on regulatory and administrative phases.

Note: The complete statement of the Committee, which represented labor, industry, the public, insurance carriers, and members of the medical, legal, and engineering professions, on their findings as a result of studies made during 1936-1937. There are several extensive bibliographies.

NEAL, PAUL ARDEEN, AND C. W. EMMONS

Dermatitis and coexisting fungous infections among plate printers. Washington, D.C.: Government Printing Office, 1939. 56 p. illus. 23 cm. (United States. Public Health Service. Public health bulletin no. 246) \$0.15. 2733

Contents: Introduction. Preliminary occupational analysis. Past and present medical histories. Mycological examinations. Single spore isolation. Patch tests. Classification of the dermatitis. Summary. Recommendations. Acknowledgments. Bibliography.

Note: The purpose of the study reported in this bulletin was to determine (1) the potential skin hazards associated with the printing industry, (2) the incidence and type of the dermatitis among the 1091 employees of one large printing establishment, (3) the exact etiological factor in each case of dermatitis, and (4) to develop methods of control. Three hundred sixty-four workers exposed to inks were examined for dermatitis along with 24 controls. Recommendations for control of the disease in such establishments are detailed and specific.

REED, JEWETT VILLEROY, AND A. K. HARCOURT

The essentials of occupational diseases. Springfield, Ill.: Charles C. Thomas, 1941. 225 p. illus. 23 cm. \$4.50. 2735

Contents: Table of potential industrial hazards. Chemical poisons. Physical agents. Skin lesions of occupational origin. Occupational diseases of the lungs. Malignant disease associated with occupation. Occupational diseases due to infections. Functional disturbances associated with occupation. Bibliography. Index.

Note: Essentially a compilation from authoritative sources on the pathology, symptomatology, and treatment of occupational diseases. It does not attempt to cover the medical-legal aspects of the subject. The table of potential industrial hazards will be valuable in determining whether or not an occupational disease hazard may be expected in any certain industry.

RESNICK, LOUIS

Eye hazards in industry; extent, cause, and means of prevention. New York: Published for the National Society for the Prevention of Blindness by Columbia University Press, 1941. 321 p. illus. 23 cm. \$3.50. 2736

Contents: Part I, The problem: Eye hazards. Eye accidents. Eye diseases. Defective vision. First aid. Part II, The solution: Mechanical guards. Process revision. Proper lighting. Education. Administrative supervision. Appendices: A self-appraisal for eye safety in industry. Industrial poisons which are hazardous to the eyes. Recommended minimum standards of illumination for industrial interiors. Some national organizations concerned with industrial welfare. Bibliography. Index.

Note: A handbook intended for safety engineers and inspectors and as a textbook for engineering and vocational training schools. The first edition of the book, by Resnick and Lewis H. Carris, appeared in 1924 under the title *Eye hazards in industrial occupations*. Emphasis is placed on monetary costs of eye hazards, as well as on social and human implications.

RUSSELL, ALBERT EUGENE

The health of workers in dusty trades: VII. Restudy of a group of granite workers. Washington, D.C.: Government Printing Office, 1941. 71 p. illus. 23 cm. (United States. Public Health Service. Public health bulletin no. 269) \$0.15. 2737

Contents: Foreword. Résumé of the 1924-26 study of granite workers. Clinical and X-ray characteristics of silicosis and tuberculosis in granite workers. Comparison of findings on persons examined in 1924-26 and again in 1937-38. Statistical summary. General statement and recommendations.

Note: In 1924 the Public Health Service undertook the study of the health of workers in dusty trades. Investigations were made of the effects of exposure to siliceous dust and the findings were published as Public health bulletin no. 187, *The health of workers in dusty trades. II. Exposures to siliceous dust (granite industry)*, by Albert E. Russell. In 1937-38 116 of the same workers were re-examined and the results of this second study are the subject of this work, which compares the findings of the two studies.

SAPPINGTON, CLARENCE OLDS

Essentials of industrial health. 63 illustrations. Philadelphia: J. B. Lippincott Company, 1943. 626 p. illus. 24 cm. \$6.50. 2738

Contents: Part I, Industrial health administration: Origin and later development of industrial health. Occupational morbidity and mortality. Distribution of industrial health service. Classification of industrial physicians. The industrial medical department. Part II, Industrial hygiene and toxicology: Industrial health exposures. The plant survey. Plant sanitation and hygiene. Personal hygiene for workers. Coordination of industrial and community health. Part III, Industrial medicine and traumatic surgery: The worker and the job. Industrial accidents. Occupational diseases. Non-occupational disabilities. Workmen's compensation and rehabilitation. Appendixes. References. Index.

Note: The author attempts to show that industrial health goes far beyond the ordinary practice of curative medicine and surgery in industry, to include such diverse fields as industrial hygiene and toxicology, sanitation and health-conservation, proper illumination and ventilation, nutrition, housing, recreation, fatigue control, mental hygiene, codes, regulations, factory inspection, job analysis, aptitude and psychological tests, study of industrial accidents, occupational diseases, and workmen's compensation. The book presents numerous tables of statistics and offers the fundamentals of industrial health standards for various occupations. The appendixes contain an industrial nurse's manual, public health survey forms, material and products classification lists, classification of respirators, minimum lighting requirements for various tasks, absentee record forms, floor plans for industrial emergency hospitals and dispensaries, safety codes, and other pertinent information.

SCHWARTZ, LOUIS, AND NORMAN R. GOLD-SMITH

Occupational and related dermatoses. Abstracts from the literature January, 1940 to June, 1943, inclusive. Washington, D.C.: Government Printing Office, 1944. 179 p. 23 cm. (United States. Public Health Service. Public health bulletin no. 284) \$0.25. 2739

Contents: Acids. Acne. Adhesive plaster. Air conditioning. Airplane manufacture. Allergy. Animal handlers. Antiseptics. Arsenic. Bacterial infections. Bakers. Barbers. Burns. Butchers. Candy makers. Carcinoma. Cement. Chemicals. Chimneysweeps. Cleansers. Coal tar. Cosmetics. Diagnosis. Drug eruptions. Dyes. Eczema. Electroplating. Enamel workers. Fur. Glass. Hatmaking. Industrial dermatoses (general). Insecticides. Laundry. Leather. Leukoderma. Mechanical and physical agents. Medical and allied professions. Medico-legal. Metals: Aluminum. Chromium. Magnesium. Mercury. Miners. Miscellaneous. Mouth. Mycoses. Nails. Negroes. Oils. Ointments. Paints, lacquers, and varnishes. Parasites. Patch tests. Photographers. Photosensitivity. Physiology. Plants and woods. Prevention. Printing. Railroad employees. Resins and waxes. Rubber. Sensitivity. Shoe manufacture. Silk. Solvents. Steel. Sugar. Textiles. Tobacco. Treatment. Venereal diseases. Vitamins. War. Welding. Wetting agents. Wood preservatives. Wool.

Note: This volume is a continuation of Public health bulletin no. 266, which contained abstracts from the literature on occupational and related dermatoses from 1935 through 1939. It includes material in many languages and arranges the abstracts alphabetically by subject. The compilers are members of the staff of the Dermatoses Investigations Section, Division of Industrial Hygiene, Bureau of State Services, of the United States Public Health Service.

THEWLIS, MALFORD WILCOX

Preclinical medicine; preclinical states and prevention of disease. Baltimore: The Williams & Wilkins Company, 1939. 223 p. illus. 23 cm. \$3.00. 2740

Contents (abridged): Section I, General considerations. II, Specific infectious diseases. III, Non-infectious diseases. IV, Pathologic possibilities. Appendix: Blood chemistry. Bibliography. Index.

Note: Since the goal of preclinical medicine is the discovery of disease conditions which are likely to occur, it lies wholly within the field of preventive medicine. Its purpose is to detect disease tendencies before they reach even the incipient or symptom stage. A study is made of the patient's hereditary background, constitutional type, racial factors, intellectual equipment, social adjustment, goals in life, physical and mental hygiene, the climate in which he lives and has lived, the influence of his occupation, of past diseases, especially those of infectious origin, and his minor symptoms. In this book, data which should be of aid in such studies are presented in a clear, concise form. Summaries are included in the longer chapters, and an extensive bibliography is given. The book is intended for all physicians, but particularly for those practicing industrial medicine, for preclinical therapy is a valuable adjunct to the medical supervision given to employees.

UNITED STATES. DEPARTMENT OF LABOR

Protecting plant manpower through the control of air contaminants. Washington, D.C.: Government Printing Office, 1944. 28 p. illus. 23 cm. (United States. Division of Labor Standards. Special bulletin no. 14) Paper, \$0.10. 2740a

Contents: Foreword. Finding and appraising the hazards, by Philip Drinker. Keeping the air harmless, by Theodore Hatch. Protecting workers against temporary and emergency exposures, by W. P. Yant.

Note: This bulletin is published for the benefit of those whose responsibility it is to prevent industrial illness resulting from exposure to dusts and poisonous gases, fumes, or vapors. The following aspects of the subject are covered: testing the air within the suspected workplace to determine what poisons or dusts are present and in what quantity; preventing the escape of the dusts or poisons into the air of the workplace in sufficient quantity to render the air harmful; and providing personal respiratory protective equipment for use by workers during periods of temporary or emergency exposure.

UNITED STATES. DEPARTMENT OF LABOR

Silicosis prevention: dust control in foundries. Washington, D.C.: Government Printing Office,

1939. 25 p. illus. 22 cm. (United States. Division of Labor Standards. Unnumbered pamphlets) Paper, \$0.10. 2740b

Contents: Foreword. Introduction and summary. Trapping the dust. Isolating dusty operations. Good housekeeping. Personal respiratory protection. Foundry operating practices. Administrative control. Conclusion. Selected references.

Note: A pamphlet outlining some of the tried and proved means of reducing the hazard due to silica dust in foundries.

WAMPLER, FREDERICK JACOB, EDITOR

The principles and practice of industrial medicine. Baltimore: The Williams & Wilkins Company, 1943. 579 p. illus. 23 cm. \$6.00. 2741

Contents: Notes on history, by Fred J. Wampler. Methods employed in appraisal and control of industrial health hazards, by J. J. Bloomfield. Industrial accidents: their cause and prevention, by Donald E. Cumming. Medical services in industry and the industrial physician, by Fred J. Wampler. The lay-out of the medical department, by Fred J. Wampler. Governmental agencies in industrial hygiene, by J. J. Bloomfield. Industrial health program of the American Medical Association, by C. M. Peterson. Effects of temperature and humidity on industrial workers, by Anna M. Baetjer. Effects of abnormal atmospheric pressures, by Anna M. Baetjer. Light, lighting and seeing, by Matthew Luckiesh and Frank K. Moss. Fatigue, by Lorin A. Thompson. The physical examination, by Fred J. Wampler. Medical control of industrial exposure to toxic chemicals, by John H. Foulger. Survey of substances which cause occupational poisoning, by Willard Machle and Francis F. Heyroth. Industrial lead exposure and lead poisoning, by Robert A. Kehoe. Carbon disulfide, by Ralph W. McKee and J. A. Calhoun. Toxicity of certain organic solvents in industry, by J. M. Carlisle. Carbon monoxide poisoning, by Frank S. Rossiter. Some of the poisonous gases, by Frank S. Rossiter. Electricity, by Charles F. Engel. Occupational diseases of the skin, by Louis Schwartz. Pneumoconiosis, by George Zur Williams. Occupation and tuberculosis, by Sarah I. Morris. Venereal disease control in industry, by Otis L. Anderson. What industry can do to improve nutrition, by William A. Sawyer. Eyes in industry: care and prevention of injury, by George H. Cross. Traumatic shock and burns, by J. M. Carlisle, et al. The industrial back, by Rutherford T. Johnstone. The nurse in industry, by Joanna Johnson. Compensation, by B. E. Kuechle. Vocational and industrial rehabilitation, by Richard N. Anderson. Industrial medical service for the smaller plant, by Fred J. Wampler. Women in industry, by Milton H. Kronenberg and Kenneth Morse.

Note: This book has a twofold purpose: to serve as a textbook in courses in industrial medicine, and as an aid to practicing physicians who because of the emergency have been asked to take on the medical care of industrial workers without having received special training in this branch of medicine. The subject matter includes a description of many of the new techniques developed to help the industrial physician in his work.

MILITARY AND NAVAL MEDICINE

DUNHAM, GEORGE CLARK

Military preventive medicine. Third edition. Harrisburg, Pa.: Military Service Publishing Company, 1940. 1198 p. illus. (part col.) 23 cm. \$3.25. 2742

Contents: Introduction. Basic principles of military epidemiology. Control of respiratory diseases. Housing of troops. Control of intestinal diseases. Water purification. Sanitation of swimming pools. Food control. Meat inspection. Inspection of poultry, eggs and fish. Dairy and milk plant sanitation. Mess sanitation. Waste disposal. Sewage treatment. Disposal of human wastes in temporary camps and bivouacs. Disposal of kitchen wastes. Disposal of manure. Fly control. Rat control. Control of insect-borne diseases. Mosquito control. Control of lice. Control of other insects. Control of venereal disease. Control of miscellaneous diseases. Sanitary surveys and sanitary orders. Physical examinations. Vital statistics. Appendixes: Survey of a rapid sand filtration plant. Nutrient constituent content and caloric value of the common foods. Foods serving as sources of protein and certain mineral elements. Sources of vitamins. Score card for dairy farm and pasteurization plant. Score card for dairy farm and milk plant. Subject index.

Note: This book has for many years been considered the standard work in its field and is the most detailed text on military hygiene available in English. In this edition the entire text has been revised and brought up to date. Information recently acquired in various fields is included; for example, sections on psittacosis, epidemic encephalitis, tick paralysis, in medicine; the removal of fluoride from water, in hygiene, and additional data on vitamins.

HILL, JUSTINA HAMILTON

Silent enemies; the story of the diseases of war and their control. New York: G. P. Putnam's Sons, 1942. 266 p. illus. 21 cm. \$2.50. 2743

Contents (abridged): Jungle germs: Malaria, yellow jack. Out of the East: Typhus, plague, cholera. Assorted nuisances. Through shot and shell: Wounds and wonders. Burns, their new importance. The modern magic of blood transfusion. Air-raid shelters and training camps: respiratory infection. Filth diseases. The control of venereal disease. Versatile viruses. Our present status. Index.

Note: An account for general reading of the scientific progress that has been made to protect our armed forces and civilians from infections which have always been associated with war. Bibliographic references occur in footnotes.

HUME, EDGAR ERSKINE

Victories of army medicine; scientific accomplishments of the Medical Department of the United States Army. Philadelphia: J. B. Lippincott Company, 1943. 250 p. illus. (part col.) 23 cm. \$3.00. 2744

Contents (abridged): Sketch of the United States Army Medical Department, 1775-1943. Three great American medical institutions: The Army Medical Library; Army Medical Museum; Army Medical School. The Medical Department founds American meteorology. Anthropology and ethnology. Ornithology studied by medical officers. What the army has given to surgery: gunshot wounds; closed treatment of compound fractures; field surgery; thoracic surgery. Walter Reed's two great investigations. William Beaumont and the physiology of digestion. Advances beginning with our War for Independence and the first half of the nineteenth century: vaccination; venereal disease control; the first American Pharmacopoeia. Advances beginning with the war

between the states: contributions to neuropsychiatry; photomicrography; transportation of patients. Advances beginning with the Spanish-American war: purification of drinking water; war on malaria; plague control; cholera and dysentery in the Philippines; periodic physical examinations; the foot and its proper shoe. Advances beginning with the first World War: trench fever; aviation medicine; Jamaica ginger paralysis; sandfly fever; preventive medicine in the second World War. Work of other corps of the Medical Department of the Army. Miscellaneous. References. Index.

Note: This history of the scientific accomplishments of the Medical Department of the United States Army describes the conquest of various diseases and advances in many fields, and in addition gives an account of the lives of many of the members of the Medical Corps who have made valuable contributions to medical science. The text is based largely on lectures delivered in 1942 before the College of Physicians of Philadelphia and the Johns Hopkins University, and the 1943 annual Beaumont lecture series delivered before the Wayne County Medical Society, Detroit. The book is written in a popular style and is intended for the layman as well as the physician.

MAST, GEORGE W., AND HOWARD W. ENNES, JR.

The hygiene of clothing. Washington, D.C.: Government Printing Office, 1943. 70 p. illus. 19 cm. (Navmed 109) Paper, \$0.20. 2744a

Contents: Introduction. The physiology of body heat balance. Atmospheric cooling. Thermodynamic aspects of textiles. Insulation values of clothing. Determination of clothing requirements. Major types and problems of clothing. Special clothing problems. Bibliography.

Note: This publication of the Division of Preventive Medicine of the United States Navy considers from the scientific standpoint current methods of protection by clothing. It presents the principles of function and use underlying the design of clothing, especially clothing to be used under the varied conditions of naval warfare.

OMAN, CHARLES MALDEN

Doctors aweigh; the story of the United States Navy Medical Corps in action. Garden City: Doubleday, Doran and Company, Inc., 1943. 231 p. illus. 21 cm. \$2.50. 2744b

Contents: Emergency call, Pearl Harbor. Blood on the Coral Sea. Gold oak leaves and silver acorns. Sea duty. Keeping them flying. They call him "doc." Navy nurses at sea and ashore. Ounces of prevention. Sailor ashore. Danger under the palms. Hunting for answers. Solomons' wisdom. Wardroom and fore-castle. Why sailors get that way. Let the Navy do it. Our new Navy.

Note: A popular account of the work which is being done by the United States Navy Medical Corps, both in peace and war. While much of the material relating to the progress of naval medicine centers about the present war, the author also tells of many of his experiences from the time of his first assignment in 1902 up to the present day.

PUGH, WINFIELD SCOTT, AND OTHERS, EDITORS

War medicine, a symposium; editor, Winfield Scott Pugh; associate editor, Edward Podolsky; technical editor, Dagobert D. Runes. New York: Philosophical Library, 1942. 565 p. illus. 23 cm. \$7.50. 2745

Contents (abridged): Surgery. Aviation and naval medicine. General medicine.

Note: A collection of articles on medicine under war-time conditions, this volume is meant for all medical men, those in the military services as well as the physician in general practice. There are 33 articles on surgery, ten on aviation and naval medicine, and 14 on general medicine. Among others, cardiologists, psychiatrists, allergists, and men active in aviation medicine are represented. Various types of gunshot wounds, blast concussion, gas casualties, and military psychology are among the subjects discussed. The material is reprinted from *The Military Surgeon*, *The British medical journal*, *American journal of surgery*, and other professional journals. There is no index, and few references are given.

SOLOMON, HARRY CAESAR, AND PAUL I. YAKOVLEV, EDITORS

Manual of military neuropsychiatry. Philadelphia: W. B. Saunders Company, 1944. 764 p. illus. 20 cm. \$6.00. 2746

Contents: Neuropsychiatric experiences of first World War, by Douglas A. Thom. General organization of neuropsychiatry in Army during current war, by Roy D. Halloran. Neuropsychiatric screening at induction stations, by Harry C. Solomon, H. Houston Merritt, and Wilfred Bloomberg. Military medical administration of induction stations, by Robert W. Hyde. Methods for rapidly securing recorded personal history of inductees, by James M. Cunningham. Psychiatric examination of inductees, by A. Warren Stearns and Harry C. Solomon. Neurological examination of inductees, by Paul I. Yakovlev. Organization of medical department. Duties of medical-officer neuropsychiatrists, by William C. Porter. Military laws and regulations pertaining to disposition of neuropsychiatric casualties, by Malcolm J. Farrell. Disposition of neuropsychiatric cases in Army Air Forces, by John M. Murray. Administration and disposition of neuropsychiatric casualties in the Navy, by Francis J. Braceland. Administration and disposition of neuropsychiatric casualties in the merchant marine, by Daniel Blain. Neuropsychiatric casualties at station hospitals and military camps, 1941 to 1943, by Franklin G. Ebaugh. Military forensic neuropsychiatry, by William C. Porter. Psychoneurosis and psychosomatic disorders, by Jacob E. Kinsinger and Stanley Cobb. Psychopathic personalities, by William Malamud. Alcohol and alcoholism, by Edward A. Strecker. Sexual deviates, by Abraham Myerson. Malingering, by Abraham Myerson. Feeble-minded and defective delinquents of draft age, by Ransom A. Greene and C. Stanley Raymond. Epilepsy and paroxysmal neuropsychiatric syndromes, by William G. Lennox. Acute psychotic episodes and acute confusional turmoil states in soldiers, by William C. Porter. Principal psychoses, by Gaylor P. Coon. Common diseases of nervous system, by H. Houston Merritt. Syphilis of nervous system, by H. Houston Merritt. Meningitis in the military services; epidemiology, diagnosis and management in large troop concentrations, by Alton S. Pope. Encephalitis in the military services, by Roy F. Feemster. Peripheral nerve injuries, by Lewis J. Rollock. Spinal cord injuries, by Donald Munro. Craniocerebral injuries, by Walter Wegner. Post-traumatic syndromes, by Derek Denny-Brown. Psychology and morale, by John W. Appel. Psychiatric orientation of military nonmedical personnel, by Samuel H. Kraines. Mental hygiene clinics in military installations, by Harry L. Freedman. Management of neuropsychiatric casualties in combat zone, by Roy R. Grinker and John P. Spiegel. Emergency care and treatment of acute war neuroses, by Lawrence S. Kubie. Military group psychotherapy, by Howard P. Rome. Rehabilitation of military offenders, by Elvin V. Semrad. Treatment of alcoholic states, by Wilfred Bloomberg. Shock therapy in the military services, by Harry C. Solomon. Custodial care and management of psychotic soldiers, by Francis H. Sleeper. Occupational therapy, by Walter E. Barton. Neuropsychiatric disorders in the tropics, by Leopold E. Wexberg. Neuropsychiatric and psychosomatic aspects of tropical diseases, by James L. McCartney. Neuropsychiatric aspects and treatment of convoy and torpedo casualties, by Daniel Blain. Physiology of flying; hazards and remedies, by D. Bruce Dill. Neuropsychiatric experiences of foreign armies as reflected in current literature, by Henry R. Viets. Cerebrospinal fluid, by H. Houston Merritt. Electro-encephalography: Principal patterns, diagnostic evaluation, by Frederic A. Gibbs. Index.

Note: The purpose of this manual is to give medical officers of the armed forces a sound but concise guide in the management of the kind of neuropsychiatric disorders with which they have to deal. It was written with the thought also in mind that it will be of value in veterans' hospitals, in neuropsychiatric sanatoria, in state and private institutions and to the civilian practitioner. An important point is the fact that virtually all of the contributors are in military service and therefore discuss their particular subjects from first-hand experience. Special attention has been given

to the clinical entities, including prophylaxis and therapy. Bibliographies are given at the ends of chapters.

TALIAFERRO, WILLIAM HAY, EDITOR

Medicine and the war. Chicago, Ill.: The University of Chicago Press, 1944. 193 p. illus. 21 cm. ([Chicago. University] Charles R. Walgreen Foundation lectures) \$2.00. 2747

Contents: Historical background and introduction, by Arno B. Luckhardt. Food and the war, by Paul R. Cannon. Chemotherapy, by E. M. K. Geiling. Malaria, by William H. Taliaferro. Insects, disease, and modern transportation, by Clay G. Huff. Shock and blood substitutes, by Alexander Brunschwig. Aviation medicine, by Henry T. Ricketts. Neurological and psychological effects of cerebral injuries, by A. Earl Walker and Ward C. Halstead. Psychiatry and the war, by David Slight. Chemical warfare, by Franklin C. McLean.

Note: Although written by authorities and specialists, the treatment in this book is non-technical. The book is suitable for lay readers as well as persons connected professionally with military medical science.

TRUETA RASPALL, JOSÉ

The principles and practice of war surgery, with reference to the biological method of the treatment of war wounds and fractures. With introduction by Owen H. Wangensteen. With 144 text illustrations. St. Louis: The C. V. Mosby Company, 1943. 441 p. illus. 25 cm. \$6.50. 2748

Contents (abridged): Part I, Pathology of war wounds and general care of the wounded: Biological principles of treatment. Development of war surgery. Healing of wounds. Infection. Passage of bacteria and their toxins through the body. Pyogenic infections. Gas gangrene. Tetanus. Shock. Traumatic vascular spasm. Blood transfusion. Anesthesia. Part II, Essentials of war surgery: Essentials of treatment and organization. Antiseptics. Chemotherapy. Wound excision. Drainage. Reduction and fixation of fractures. Immobilization. Plaster-of-Paris technique. Primary and secondary sutures. Skin graft. Articular wounds. Amputation. Regional surgery. Burns. Index.

Note: In this book the author supplements his report on his method of encasement of injured extremities in plaster-of-Paris, given in an earlier volume entitled *Treatment of war wounds and fractures*, New York: Paul B. Hoeber, Inc., 1939. The chief aims of the present volume are to supply all the details of technique the earlier one lacked, and to discuss the scientific basis of the methods employed. Both clinical and experimental studies, here reported, have contributed to the latter subject. The book is intended for all surgeons, but especially for those dealing with war wounds.

UNITED STATES. BUREAU OF MEDICINE AND SURGERY

Epidemiology of diseases of military importance in the Netherlands Indies, including the identification and distribution of arthropods of medical importance. Washington, D.C.: Government Printing Office, 1944. 250 p. illus. 18 cm. Paper, \$0.40. 2749

Contents: Foreword. Introduction. Malaria. Filariasis. Dengue. Other insect-borne diseases. Rickettsioses. Plague and leptospirosis. Enteric diseases. Respiratory diseases. Miscellaneous infectious diseases, skin diseases, leprosy, yaws, venereal diseases. Helminthiasis (other than filariasis). Animals and plants of medical importance. Bibliography. Appendices: Keys to the identification of the anopheline mosquitoes of the Netherlands Indies. Check list of the anophelines of the Netherlands Indies. Distribution of malaria vectors in the Netherlands Indies. Check list and keys for the identification of culicine mosquitoes in the Netherlands Indies. Check list and keys for the identification of ticks of the Netherlands Indies. Tables for trombiculid larvae of the Netherlands Indies. Notes on the climatology of the Netherlands Indies. Intermediate hosts of trematode parasites of man in the southwest Pacific.

Note: A summary of medical information concerning the Netherlands Indies as it pertains to epidemiology and other

phases of preventive medicine. The bulk of the information was obtained from perusal of the medical journals and other publications of the Netherlands Indies. The manual covers only the areas formerly under Dutch administration and does not take into account Portuguese Timor, British New Guinea, and British Borneo.

UNITED STATES. BUREAU OF MEDICINE AND SURGERY

613.68
Un 3 m
1942
Handbook of the Hospital Corps, United States Navy, 1939. Published by the Bureau of Medicine and Surgery under the authority of the Secretary of the Navy. Washington, D.C.: Government Printing Office, 1939. 1015 p. illus. (part col.) 24 cm. \$1.75. 2749a

Contents: Foreword. History of the Hospital Corps. Anatomy and physiology. Minor surgery and first aid. Bandages and bandaging. Splints and appliances. Emergency dental treatment. Materia medica and therapeutics. Toxicology. Nursing. Ward management. Operating room and surgical technique. Hygiene and sanitation. Allergy. Genito-urinary and venereal diseases. Prevention of venereal diseases. Industrial medicine and industrial hazards. Field sanitation. Duty with Marine Corps expeditionary forces. Landing force. Shore patrol. Diets and messing for the sick. Pharmacy. Chemistry. Anaesthesia. Administration and general clerical procedures. Hospital supplies and property accountability. Commissary supervision. Deaths and medico-legal matters. Hospital Corps technical specialties: Aviation medicine. Basal metabolism. Blood grouping and matching. Chemical warfare. Diving and submarine duty. Electrocardiography. Embalming. Independent duty. Laboratory procedures and technique. Physical therapy. Recruiting. X-ray. Index.

Note: This handbook is a revision of the 1930 edition and is compiled from articles prepared by members of the Medical, Dental, Hospital, and Nurse Corps, U.S. Navy, and reviewed and revised by Commander W. J. C. Agnew, Medical Corps, and Chief Pharmacist N. L. Saunders, U.S. Navy. It is published for the instruction and guidance of members of the Medical Department of the U.S. Navy and for use at Hospital Corps schools.

UNITED STATES. BUREAU OF MEDICINE AND SURGERY

613.68
Un 3 m
1942
A manual of naval hygiene. Prepared by the Medical Department, U.S. Navy. Washington, D.C.: Government Printing Office, 1943. 340 p. illus. 19 cm. \$1.00. 2749b

Contents: The ship as a living space and the influence of naval architecture on naval hygiene. Ventilation and air conditioning on shipboard. Water and its uses on shipboard. Food and food inspection. Lighting on shipboard. Naval clothing. General duties of the medical officer of a naval vessel. Essential medical department reports. Sanitary inspection of the ship. The sickbay and hospital space afloat. The medical department aboard ship in emergencies other than battle. The medical department aboard ship in battle. Transportation of sick and injured on shipboard. Accident prevention on shipboard. Disease prevention on shipboard. The hospital ship. The dental office on shipboard. Submarine medicine. Deep-sea diving. Hygiene in aviation. Field hygiene and sanitation. Armored units. Recruit selection. Mental hygiene. Quarantine rules and regulations. Identification records. Procurement of medical and dental supplies. Index.

Note: This volume on naval hygiene was prepared by Ross T. McIntire, Surgeon General, United States Navy, in collaboration with a number of officers of the Medical Department. Its purpose is to try to answer the various sanitary and hygienic problems of air and of land, of surface and of subsurface craft that daily present themselves to the medical officers of the Navy.

UNITED STATES. BUREAU OF MEDICINE AND SURGERY

613.2
Un 3 m
1942
Medical compend for commanding officers of naval vessels to which no member of the Medical Department of the United States Navy is attached. To accompany medicine box. Washington, D.C.: Government Printing Office, 1942. 134 p. illus. 23 cm. Paper, \$0.60. 2749c

Contents: Introduction: Contents of medicine boxes. The medicine box. The supplemental medicine box. The medical boat box. Directions for use of medical supplies. First aid. Special diseases. Venereal diseases and prophylaxis. Hospitalization. Deaths. Personal hygiene. Preventive medicine. Quarantine, disinfection, bills of health. Glossary. Index.

Note: A handbook of concise practical information pertaining to medical and sanitary practices on shipboard. Designed for the use of ship personnel who are not trained physicians or surgeons.

UNITED STATES. WAR DEPARTMENT

First aid for soldiers. Field manual, FM 21-11. Washington, D.C.: Government Printing Office, 1943. 119 p. illus. 17 cm. \$0.15. 2749d

Contents (abridged): Wounds. Fractures, dislocations, and sprains. Common emergencies and health measures. Effects of severe heat, and measures for use in the desert. Effects of severe cold, and measures for use in the arctic. Measures for use in the jungle and tropics. Measures for use in aircraft and tank injuries. Transportation of sick and injured. War gases. Descriptions of first-aid kits and packets. Use of contents of first-aid kits and packets. Index.

Note: Designed to teach the soldier what he can do for himself or a fellow soldier if injury or sickness occurs when no medical officer is nearby. Information is also given concerning the use of certain supplies which are for the purpose of helping to keep well.

UNITED STATES. WAR DEPARTMENT

Medical department soldiers' handbook. Washington, D.C.: Government Printing Office, 1941. 486 p. illus. 23 cm. \$0.75. 2749e

Contents: Rules of land warfare. Basic anatomy and physiology. Minor surgery and medical aid. Nursing and ward management. Applied hygiene and sanitation. Administration. Medical side of chemical warfare. Veterinary food inspection. Appendices: List of references. Acknowledgment. Index.

Note: An introductory text designed to cover all the various subjects taught the soldier in the medical department.

UNITED STATES. WAR DEPARTMENT

Medical field manual. Field sanitation. Field manual FM 8-40. Washington, D.C.: Government Printing Office, 1940. 172 p. illus. 19 cm. \$0.25. 2749f

Contents (abridged): Control of communicable diseases. Water. Waste disposal. Mess sanitation. Hygienic control of food products of animal origin. Fly control. Mosquito control. Control of lice. Rat control. Sanitary surveys and sanitary orders. Field epidemiology. Physical examinations. Important factors relative to personal hygiene. Vital statistics.

Note: Detailed, well-illustrated directions for maintaining healthful living conditions in both temporary and permanent military camps and stations.

UNITED STATES. WAR DEPARTMENT

Medical field manual. Medical service of field units. Field manual FM 8-10. Washington, D.C.: Government Printing Office, 1942. 285 p. illus. 17 cm. \$0.35. 2749g

Contents (abridged): General. Medical service of the division. Medical service in camp and bivouac. Medical service in marches. Medical service in the attack. Medical service in defense. Medical service in retrograde movements. Special operations. Characteristics common to corps and army. Medical service in the corps. Medical service of the army. Appendixes: Individual equipment of medical department officers and enlisted men. Medical department chests. Unit equipment of medical detachments. Model forms. Index.

Note: Describes in detail the operation of medical units. Defines and outlines the responsibilities and duties of medical officers and units under varying circumstances in battle and in the safer areas to the rear of actual conflict.

UNITED STATES. WAR DEPARTMENT

Medical field manual. Reference data. Field manual FM 8-55. Washington, D.C.: Govern-

ment Printing Office, 1941. 78 p. illus. 19 cm. \$0.10. 2749h

Contents (abridged): Command and staff consideration. Medical plans and orders. Troop movement. Supply. Rates used by the medical service. Estimations of medical requirements. Appendixes: Check list of complete formal medical plan. Check list of complete unit plan. Combat orders for medical units. Index.

Note: The purpose of this manual is to furnish to medical officers a compact source of information bearing upon the military aspects of their profession. Logistical data required for the movement of medical units and for the evacuation of the sick and injured; experience tables to serve as points of departure in medical planning; medical plans and orders; and command and staff relationships are included.

UNITED STATES. WAR DEPARTMENT

Military roentgenology. War Department Technical manual TM-820. This manual supersedes TM 8-240, Roentgenographic technicians, 3 July 1941, and TM 8-275, Military roentgenology, 26 January 1942. Washington, D.C.: Government Printing Office, 1944. 447 p. illus. 28 cm. Price, ?. 2749i

Contents: Introduction. Fundamentals of roentgenologic physics. Field X-ray equipment. Operation and care of Roentgen-ray equipment. Electrical and radiation protection. Auxiliary roentgenographic equipment. X-ray film, exposure holders, and darkroom procedure. Fundamentals of roentgenographic procedure. Roentgen anatomy. Roentgenographic technique. Special techniques. Foreign body localization. Appendixes. Index.

Note: A comprehensive manual of this subject, suitable for instruction and also as a reference book for X-ray technicians and roentgenologists. It is profusely illustrated with charts and graphs and reproductions of roentgenograms. The appendixes contain helpful hints on darkroom procedure, contrast media, and maintenance of X-ray equipment.

UNITED STATES. WAR DEPARTMENT

Military sanitation and first aid, basic field manual. Field manual, FM 21-10. Washington, D.C.: Government Printing Office, 1940. 192 p. illus. 19 cm. \$0.25. 2749j

Contents (abridged): Communicable diseases. Respiratory diseases. Intestinal diseases. Insect-borne diseases. Venereal diseases. Miscellaneous diseases. March hygiene and selection of camp sites. Personal hygiene. First aid. Appendix: References and bibliography. Index.

Note: This manual includes the basic considerations in communicable disease control, housing of troops, methods of waste disposal, the purification of water, mess sanitation, control of disease-bearing insects, personal hygiene, and first aid. Chapters 9 and 10 on personal hygiene and first aid are particularly adapted for the instruction of enlisted men.

WHEELER, WILLIAM LOUIS

Shipboard medical practice, a handbook of ship sanitation and emergency medical aid at sea. New York: Cornell Maritime Press, 1943. 114 p. illus. 19 cm. \$1.00. 2749k

Contents: Ship sanitation. The maintenance of the human body. The medicine chest. Specific diseases and their therapy. Surgical first aid. Common minor occurrences. Care of survivors. Rescuing a drowning person. Radio messages requesting medical advice. Appendixes: Glossary. Sample medical supply list. Index.

Note: Aimed at wartime conditions, this book interprets first aid as an emergency practice. It is directed to seamen with little or no medical knowledge and written in plain language. Advice and instructions are based on those materials and resources which will ordinarily be available on ships and in lifeboats. The title is an extensive revision and expansion of the section on first aid and ship sanitation in F. M. Cornell and A. C. Hoffman, *American merchant seamen's manual*, third edition, New York, 1942 (see Index).

PUBLIC HEALTH

AMERICAN DENTAL ASSOCIATION. ECONOMICS COMMITTEE

A study of the dental needs of adults in the United States. By Raymond M. Walls, Samuel R. Lewis, and Melvin L. Dollar. Chicago: The Economics Committee of the American Dental Association, 1940. 113 p. illus. 21 cm. Paper, \$0.35. 2750

Contents: Introduction and methodology of the study. Average dental needs of adults 15 years of age and over who visit the dentist: General analysis. Economic status and dental needs. Analysis of dental needs by length of time elapsing since last visit to dentist. Cost of dental care. Summary of findings.

Note: This brochure presents a study of the average dental needs of adults 15 years of age or over in nine major geographic regions of the country, with an investigation of the relative dental needs of persons on different economic levels and the effects of regularity in dental visits, together with an analysis of the average cost of dental care for various age, sex, and economic groups in the United States. Numerous statistical tables and charts are presented. An acknowledged limitation of the study is that it includes only persons who go to the dentist, so that the needs of those who never go can only be roughly estimated.

AMERICAN PUBLIC HEALTH ASSOCIATION

Community organization for health education, a committee report presented by the Committee on Community Organization for Health Education of the American Public Health Association to the Public Health Education Section and the Health Officers Section. Cambridge, Mass.: The Technology Press, 1941. 120 p. 23 cm. Paper, \$0.09. 2751

Contents: The problem. Procedures followed. Examples of community organization for health education: Programs initiated under school leadership. Programs initiated under health department leadership. Programs initiated under joint sponsorship. State programs for community organization. Some observations on community organization for health education.

Note: A technical report which attempts to present an adequate picture of some of the most significant developments in community organization for health education, and to present the experiences encountered by the committee to health departments, school systems, and community leaders. Typical examples of programs initiated under one of the three auspices listed in the table of contents are described in detail, based on actual records from various communities in the United States. Organization charts for each typical case are given and there are tables of related statistical data.

ANDERSON, GAYLORD WEST, AND MARGARET G. ARNSTEIN

Communicable disease control, a volume for the health officer and public health nurse. New York: The Macmillan Company, 1941. 434 p. illus. 24 cm. \$4.50. 2752

Contents: Historical considerations. The infectious process. Control measures. The legal basis of communicable disease control. Administrative agencies. Role of the public health nurse. Care of a communicable disease case at home. Epidemiological investigation of communicable diseases. Typhoid and paratyphoid fever. The dysenteries. Hookworm. Food poisonings and infec-

tions. Trichinosis. Undulant fever. Diphtheria. Hemolytic streptococcal infections. Whooping cough. Measles. Chicken pox, German measles, and mumps. Smallpox. Anterior poliomyelitis. Meningococcus meningitis. Encephalitis. Pneumonia. Influenza. Common colds. Tuberculosis. Gonorrhea and syphilis. Rabies. Tetanus. Impetigo, pediculosis, scabies, and ringworm. Diseases spread through arthropods: plague, tularemia, Rocky Mountain spotted fever, typhus, and yellow fever—malaria. Index.

Note: This book was written chiefly from the standpoint of the community and considers procedures designed to protect the population as a group. Problems confronting health departments, schools, the visiting nurse associations, and other community agencies have been given special attention, and programs are outlined that will yield the greatest return in terms of necessary expenditure. The diseases discussed are those of major interest in most communities. Suggested readings are given with each chapter.

BAUER, WILLIAM WALDO, AND THOMAS G. HULL

Health education of the public, a practical manual of technic. Second edition, revised. Philadelphia: W. B. Saunders Company, 1942. 315 p. illus. 22 cm. \$2.75. 2753

Contents: Introduction. Definitions and objectives. Sources of materials. Radio. The exhibit. The meeting. Pamphlets. The newspaper. The motion picture. Stereoptical slides. The magazine article. Correspondence. Books. Miscellaneous devices. Correlation of technics into a program. Can the results be measured? Training and qualifications. A philosophy of health education. Index.

Note: Doctors, nurses, public health workers and others concerned with the study and application of health education will be interested in this book. It was designed to provide a handbook of practical and workable techniques in the use of the various media found suitable in furthering the aims of health education. For the second edition, new chapters were added on a philosophy of health education and training and qualifications. A study has been made of words commonly used by doctors in writing for the public, including a list of terms considered to be understood more readily than those frequently used. Footnotes are given and bibliographies are found at end of chapters.

BEEBE, GILBERT WHEELER

Contraception and fertility in the southern Appalachians. Baltimore: Published for the National Committee on Maternal Health, Inc., by the Williams & Wilkins Company, 1942. 274 p. illus. 21 cm. (Medical aspects of human fertility series, issued by the National Committee on Maternal Health) \$2.50. 2753a

Contents: Problems of the southern Appalachian region. Institution of the contraceptive service. Patterns of reproduction in the region. Impact of the service on fertility. Acceptability of the prescription. Organization of contraceptive service in depressed rural areas. Appendixes. Bibliography. Index.

Note: A monograph presenting the results of a survey of 1,300 families in Logan county, West Virginia, the purpose of which was to determine what likelihood existed that rural women of high fertility could be encouraged to practice birth control. The survey was based on the opinion that lowered fertility among such groups would in some degree either improve levels of living or halt their further deterioration. The book does not argue in support of a preconceived answer but attempts rather to present and interpret the data collected. There is also a detailed description of the patterns of fertility characteristic to the region, in terms of the factors influencing conception. The bibliography is fairly extensive.

BOLDUAN, CHARLES FREDERICK, AND NILS WILLIAM BOLDUAN

Public health and hygiene; a students' manual. Third edition, revised. Philadelphia: W. B. Saunders Company, 1941. 366 p. illus. (part col.) 20 cm. \$3.00. 2754

Contents (abridged): General introduction. Communicable diseases. Noncommunicable diseases and conditions. Community hygiene. Health administration. Index.

Note: A brief historical sketch introduces the college student of public health to a discussion of the various aspects of the many phases of public health and hygiene. Then the authors take up micro-organisms and their action on the body. They tell how disease is transmitted, discuss important insects and their relation to health and hygiene, and give information regarding disinfection. The nutritional, social, and economic factors in public health are considered in the light of present-day conditions and knowledge. Each of the important communicable diseases is taken up individually with attention devoted to characteristics and to the modern scientific methods of prevention, and a section deals with those noncommunicable diseases that most frequently enter into public health problems. Some references are given as footnotes. In revising their text for the third edition, the authors included new or expanded discussions on air conditioning, school medical inspection, public health nursing, epidemiology and public health, child bearing, tuberculosis, influenza, measles, Rocky Mountain spotted fever, venereal diseases, infantile paralysis, the influence of the Federal Government in public health, etc.

BOYD, MARK FREDERICK

Preventive medicine. Sixth edition, revised. Philadelphia: W. B. Saunders Company, 1940. 588 p. illus. 24 cm. \$5.00. 2755

Contents (abridged): Introduction. Diseases due to invading microorganisms. Deficiency diseases. Occupational diseases. The puerperal state. Heredity and disease. Special aspects of hygiene and sanitation. Demography. Public health. References. Index.

Note: The principles of disease prevention and their application to the needs of the physician, health officer and medical student are given in this book. The underlying causes of each disease are pointed out, along with the objective to be reached in control and the means of reaching that objective. For the sixth edition, the chapters on sewage disposal, water supply, and deficiency diseases have been revised. New material has also been added on syphilis, meningitis, pneumonia, tuberculosis, and yellow fever. The author is a field staff member, International Health Division of the Rockefeller Foundation.

BYRD, OLIVER ERASMUS, EDITOR

Health instruction yearbook, 1944. Foreword by C. Morely Sellery. Stanford University, Calif.: Stanford University Press, 1944. 354 p. 24 cm. \$3.00. 2756

Contents: Health as a social accomplishment. Health as a social problem. Nutrition and health. Excretion and health. Exercise and body mechanics. Fatigue and rest. Mental health and disease. Heredity and eugenics. Infection and immunity. Chronic and degenerative disorders. Habit-forming substances. The care of special organs. Safety. Health and the physical environment. Health services and facilities. Family health. School health. Occupational health. Community health services. Trends and probabilities. Bibliography. Indexes.

Note: The first of a projected series of annual publications intended to serve as a statistical sample of the health problems being discussed in current literature. The present work consists of 305 articles from 74 periodicals in condensed form, for the use of students and teachers of public health as well as workers in allied fields. Slightly more than 50 per cent of the articles appeared in print in 1944, the remainder having been published in 1943. The bibliography includes only those articles which are summarized in the text.

CAMERON, GEORGE MARTIN

The bacteriology of public health. St. Louis: The C. V. Mosby Company, 1940. 451 p. illus. (part col.) 22 cm. \$3.50. 2757

Contents: Historical review. The development of knowledge. Sources of the microbial flora of the alimentary canal. *Escherichia coli* infections, variations. The bacteriophage, vaccines, aerobacter aerogenes in infection. Drinking water and disease. Pollution, purification, typhoid, dysentery, cholera. Food idiosyncrasies, food poisoning, and food infections. Undulant fevers in man. Plague, tularemia, and hemorrhagic septicemia. Pustular abscesses, septicemia, and closely related infections. Staphylococci and streptococci. Streptococci in septic sore throat, scarlet fever, erysipelas and puerperal or childbed fever. Measles, influenza, the common cold, and pneumonia. Cerebrospinal meningitis. Gonorrhea. Whooping cough, eye infections, and soft chancre. Tuberculosis. Leprosy, the leprosy organism, and similar organisms. Diphtheria. Anthrax and symptomatic anthrax. Wounds and infections. Syphilis, yaws, and relapsing fever. Diseases caused by filtrable viruses. Diseases caused by Rickettsiae. Malaria. African sleeping sickness. Other flagellate infections. Amoebic infections. Pathogenic yeasts, molds, and actinomycetes. References. Index.

Note: This work presents the important facts in regard to pathological bacteriology from a public health viewpoint. It incorporates only those descriptions of symptoms and processes of disease which are of definite value in understanding the infecting organisms. Laboratory methods have not been discussed in the text and only brief explanations of diagnostic tests are given. Under each disease described are given the known causes together with an historical review of its recognition, the means of transmission and prevention, with modern immunizing methods and control.

CHENOWETH, LAURENCE BENJAMIN, AND WHITELAW REID MORRISON

Community hygiene; a text book in the control of communicable diseases. Second edition. New York: F. S. Crofts & Co., 1941. 317 p. illus. 21 cm. \$2.65. 2758

Contents: Introduction. Extent of illness and of physical and mental defects in the United States. Types and causes of disease. Transmission of communicable diseases. Diseases usually contracted from the soil. Water and water borne disease. Diseases usually transmitted by food. Waste disposal. Diseases spread by animals. Diseases spread by insects. Insecticides. Principles of contact infection and diseases usually spread by contact. Diseases spread by contact infection. Diseases spread by the human carrier. Disinfectants. Quarantine and isolation. Immunology. The relation of air to health. Public health administration. Glossary. Index.

Note: A text on the college level discussing typical community health problems and methods of handling them with attention to the historical background of hygiene and preventive medicine. The second edition brought the treatment up to date including latest statistics.

CONFERENCE ON RURAL MEDICINE, COOPERTOWN, N.Y., 1938

Rural medicine; proceedings of the conference held at Cooperstown, New York, October 7 and 8, 1938. Springfield, Ill.: Charles C. Thomas, 1939. 268 p. illus. 23 cm. \$3.50. 2759

Contents (abridged): Rural hospital morbidity, by Edwin L. Crosby. Acute surgical conditions of the abdomen, by Monroe A. Melver. Emergency surgery, by John H. Powers. Vascular disease, by David Kydd. Rural health departments, by Allen W. Freeman. School health examinations, by Marjorie F. Murray. School health service, by Haven Emerson. Postgraduate medical education, by James D. Bruce. Postgraduate training for practitioners, by John B. Youmans. Hospitals in rural areas, by Vane M. Hoge. Economics of rural medicine, by Lloyd C. Warren. C. C. McCoy and Michael M. Davis. Medical care for rural America, by R. C. Leland. Bibliography.

Note: The aims of the conference were: 1. To provide a forum for discussion of problems of rural medicine; 2. To define and set apart those problems that have a special relationship to the health of rural communities; 3. To present as true a picture of rural morbidity as possible; 4. To stimulate unsentimental scientific scrutiny of conditions that influence the incidence of disease and disability in rural populations. Although no clearly defined program for rural medicine was evolved, it is hoped that this compilation of reliable factual material by recognized authorities on rural morbidity will accelerate progress in the formation of such a program. The bibliography of rural medicine included was prepared by David Kydd.

DE KRUIF, PAUL HENRY

Health is wealth. New York: Harcourt, Brace and Company, 1940. 246 p. 21 cm. \$2.00. 2760

Contents: Live or die. Human erosion. Human conservation. The fifth human right. Public health is good for doctors. Public health needs the doctors. The public demand public health. Death does not wait. Index.

Note: An informal record of the efforts of a small group of physicians and public health workers to evolve a national health program, beginning with an anti-tuberculosis campaign in Detroit in 1935. Five of the chapters are reprints of articles that originally appeared in the *Country gentleman*. The author, who took an active part in the campaign, analyzes the reasons for its initial failure and stresses the need for a second attempt.

DIEUAIDE, FRANCIS RAYMOND

Civilian health in wartime. Cambridge, Mass.: Harvard University Press, 1942. 328 p. 21 cm. \$2.50. 2761

Contents: Health and the impact of war upon it. The nutritional background. Increased strength through better diets. Safety from infectious diseases. Shelter and raiment. Mother and child. The aging and the aged. Occupation and recreation. About our doctors and nurses. Mental calm and vigor. Morale and the second World War. Suggestions for further reading. Index.

Note: A presentation of the varied aspects of health in the United States in relation to the economic, social, and clinical changes brought about by the war. Written for the general reader, the book discusses American health in recent years as a background for understanding present conditions, with emphasis on mental health, care of the elderly and aged, occupational hygiene, and the differences of health between various social and geographic regions of America. The importance of health to war production and morale is also stressed, but specific diseases are not described. There are several references to foreign conditions as well.

EBERSON, FREDERICK

The microbe's challenge. Lancaster, Pa.: The Jaques Cattell Press, 1941. 354 p. illus. 26 cm. \$3.50. 2762

Contents: The simple life. The times change. The way of a parasite. Changeable microbes. Jekyll and Hyde types. Chemistry and behavior. The borderland—animate or lifeless. Virus riddles. Little microbe—what next? Microbes run amuck. Epidemics to order. The challenge. Glossary. Index. Suggested readings.

Note: A narrative account for the general reader covering some of the highlights in the history of preventive medicine and bringing together in logical form the fundamental principles upon which the modern bacteriological control of infectious diseases is based. Although intended for the layman, the treatment avoids oversimplification. There is a list of 80 books and articles covering histories, biographies, classic monographs, and general works on microbiology.

FREEMAN, ALLEN WEIR, EDITOR

A study of rural public health service, for the Committee on Administrative Practice of the American Public Health Association by the Sub-committee on Rural Health Work. New York: The Commonwealth Fund, 1933. 236 p. illus. 23 cm. \$2.50. 2762a

Contents (abridged): General summary. Background of the survey. Local health organization in the surveyed counties. Health services performed by the state. Personnel. Expenditures. Communicable disease control. Tuberculosis control. Venereal disease control. Maternity hygiene. Infant and pre-school hygiene. School hygiene. Diagnostic laboratory service. General sanitation. Health instruction in the surveyed counties. Appendixes. Index.

Note: A survey compiled for public health officials containing material "dealing with the organization, budget and personnel of the various areas and related material in the form of indices of wealth and population make-up and problems and certain ratios of services and activities to the problem in the various fields." Tables (84) and graphs present the figures and comparisons. Questionnaires were sent to surveyed counties, some of which were inspected by members of the committee. Recommendations are made for standards for public health service in rural areas, based on discoveries of the survey.

GEIGER, JACOB CASSON

Health officers' manual; general information regarding the administrative and technical problems of the health officer. Philadelphia: W. B. Saunders Company, 1939. 148 p. illus. 20 cm. \$1.50. 2763

Contents: Organization of health department. Records and statistics. Medical services. Inspection and control services. Index.

Note: This manual was written especially for health officers, public health administrators, and all others concerned with the administrative and technical problems of organized public health work. Under organization, the author discusses developing and training the personnel, preparing the budget, and creating a financial department, as well as educating the public by various forms of publicity. Under records and statistics he tells what information should go on birth and death certificates and how they should be recorded. The various medical services are discussed, with attention focused on the functions and problems of the public health department in regard to communicable diseases, epidemiology, child hygiene, mental hygiene, nutrition, dental hygiene, and the equipment necessary for proper medical service to the community. Under inspection and control services, Dr. Geiger gives careful consideration to food inspection and control, and outlines the many problems associated with food production and marketing, restaurant inspection, inspection of milk and milk products, and of meats and markets.

HARDY, MARTHA CRUMPTON, AND CAROLYN H. HOEFER

Healthy growth; a study of the influence of health education on growth and development of school children. Chicago: The University of Chicago Press, 1936. 360 p. illus. 23 cm. \$3.50. 2763a

Contents (abridged): Introduction. Selection and composition of the group. Medical examinations. Physical growth and development. Mental growth. Educational achievement. School progress and success. Interests and attitudes. Behavior adjustment. Some influences of a health-education program during the elementary-school years. An appraisal of health of school children. The rôle of health in development during late childhood.

Note: Report of a study of 409 elementary-school pupils in Joliet, Illinois, during a twelve-year period. Yearly records were kept on health, growth, accomplishment, habits, and social development as the children progressed from the third grade to the junior high school, and are here interpreted and summarized. The book won the 1939 award of the American Educational Research Association for outstanding research in the field of special methods and psychology of elementary-school subjects.

HISCOCK, IRA VAUGHAN, EDITOR

Community health organization; a manual of administration and procedure primarily for urban areas. Third edition. New York: The Commonwealth Fund, 1939. 318 p. illus. 23 cm. \$2.50. 2764

Contents: The government and public health. The planning of community health work. Organization and administration. Public health education. Vital statistics. Communicable disease control: Epidemiology. Syphilis and gonorrhea control. Tuberculosis control. Maternal and child health program. School health program. Public health nursing. Milk and food control. Sanitation. Laboratory service. Newer health problems. Hospitals and outpatient facilities. Voluntary health service. The health survey. Financial aspects of community health work. Index.

Note: The 1939 edition of this well-known manual includes much new material. The health organization suggested in this edition contains, it is believed, the elements of the best current practice in the United States. The plan can be used for organizing a health department in any community.

HISCOCK, IRA VAUGHAN

Ways to community health education, with the collaboration of Mary P. Connolly, Marjorie Delavan, Raymond S. Patterson and William H.

F. Warthen. New York: The Commonwealth Fund, 1939. 306 p. illus. (part col.) 24 cm. \$3.00. 2765

Contents: Introduction. The basis for public health education. Participation of community groups. Meetings. The newspaper. Printed matter. The radio. Exhibits. Motion pictures. Some aids on the job. Promoting sanitation and safety. A campaign against an acute infectious disease: diphtheria. Campaigning against tuberculosis and syphilis. Teaching people how to live. Sources of material for public health education. Suggestions for the purchasing of printing. A pioneer health education leaflet: "Contagious consumption". A city health education program. Index.

Note: Techniques and devices which have proved effective in building community-wide understanding of health problems and stimulating individuals and groups of citizens to effort for their own and the community's health are discussed in this book. The author has had the collaboration of leaders in the field who have pooled their ideas on the objectives and principles of health education. The book is profusely illustrated with materials used successfully by official and voluntary agencies in different sections of the country, rural and urban.

JACOBS, PHILIP PETER

614.542 The control of tuberculosis in the United States. Revised edition. New York: National Tuberculosis Association, 1940. 387 p. illus. 23 cm. \$2.00. 2766

Contents (abridged): Part I, Some historical aspects of the anti-tuberculosis movement: Beginnings in the administrative control of tuberculosis. Distinguishing features of the American campaign and significant achievements. Part II, Methods for the control of tuberculosis in the United States: Development of technique. Adult health education. Publicity. Case-finding. Public health nursing. Hospitalization and treatment. Rehabilitation. Child health. Statistics. Fund-raising methods. Racial problems. Relations with the official and unofficial agencies and the professions. Part III, Programs for the control of tuberculosis in the United States: Fundamental principles. Organization policies. Program-making. Relations between tuberculosis associations. The National Tuberculosis Association. Expansion of programs. Control or eradication? Index.

Note: A comprehensive review of the evolution and application of the methods and programs employed for the control of tuberculosis in the United States since 1889, based on many years' experience of the author. Comparative data on European practice are given. Selected references follow each chapter. The revised edition incorporates statistics and data covering the years 1932 to 1940, plus new bibliographic material.

LANGTON, CLAIR VAN NORMAN

Orientation in school health. New York: Harper & Brothers, 1941. 680 p. illus. 22 cm. \$3.25. 2768

Contents: Part I, The prevention and control of communicable disease: General factors in disease prevention. The dissemination of disease. Immunity and resistance to disease. The school health service. Part II, Healthful school living: Sanitation and planning of the school plant. Sunlight, seeing, and illumination. Air, heating, and ventilation. Water supply systems. The school custodian. Part III, The hygiene of the school child: Growth and development. Nutrition and malnutrition. Oral hygiene. Hygiene of the eye, ear, nose, and throat. Tuberculosis. Part IV, The teacher, the curriculum, and school health: The hygiene of instruction. The teacher's health. Safety education. Index.

Note: This book is designed for use by school superintendents, teachers, and other school officials concerned with school health problems. It may also be used as a textbook in teachers' colleges. The author has not treated the subject exhaustively, but has made an effort to select material that is of practical value. The chapters are accompanied by extensive lists of references.

LAPHAM, MAXWELL EDWARD

Maternity care in a rural community, Pike county, Mississippi, 1931-1936. New York: The Commonwealth Fund, 1938. 65 p. illus. 19 cm. Paper, \$0.25. 2769

Contents: Maternity care in a rural community. Finding of the study: Health department medical service. Health department nursing service. Current midwife practice. Current medical prac-

tice: a study of one hundred recent cases. A review of mortality. A suggested maternity program. Appendix.

Note: This study was undertaken in Pike county at the request of the local medical society and the Mississippi State Board of Health, to take stock of what had been accomplished and to disclose ways of further improving maternity care.

LEAVELL, HUGH RODMAN

Teaching preventive medicine to medical students, with special reference to the use of health department facilities. New York: The Commonwealth Fund, 1941. 77 p. illus. 23 cm. \$0.25. 2770

Contents: Plan of the study. Questionnaire to medical schools. Questionnaire to health departments. Summary of the questionnaires. Other conclusions. Bibliography.

Note: Dr. Leavell has had first-hand experience in the use of health department facilities for the teaching of preventive medicine to medical students, and he has made an extensive study of such use by medical schools in all parts of the country. His findings and conclusions are important to all who are concerned with medical or public health education.

MARSHALL, MAX SCIDMORE, EDITOR

Handbook of public health bacteriology and chemistry; general information regarding epidemiology, collection and shipment of specimens, and bacteriologic, serologic and chemical procedures. Second edition. San Francisco, Calif.: J. W. Stacey, Inc., for the Department of Public Health, City and County of San Francisco, Calif., 1939. 150 p. 19 cm. \$1.50. 2771

Contents (abridged): Introductory information. Laboratory procedures: Bacteriology and serology. Milk and water. Chemical methods. Appendix information. Index.

Note: An official manual of the Department of Public Health of the city and county of San Francisco, California, it treats of laboratory methods for the epidemiologist, the sanitary inspector, the medical man, the statistician, and the laboratory technician, presenting condensed general information and laboratory procedures on the bacteriology of specific communicable diseases, the determination of certain chemicals and other substances, together with miscellaneous related data. The revised edition contains certain changes in technique and omits a previous section on epidemiology. Loose-leaf format with ring-binding.

MUSTARD, HARRY STOLL

An introduction to public health. Second edition. New York: The Macmillan Company, 1944. 283 p. 24 cm. \$3.50. 2772

Contents: The backgrounds and associations of public health work. Vital statistics. Organization and administration of public health work. The acute communicable diseases. Tuberculosis as a public health problem. The venereal diseases. Sanitation. Industrial hygiene. The individual and his hygiene. Childbearing and its relation to the public health. The hygiene of infancy and young childhood. School health service. Public health aspects of certain noncommunicable diseases. Medical care and public health. Index.

Note: A concise, simply written survey of public health principles and practices for beginning courses in nursing schools, schools of medicine and public health, and academic colleges. This edition has been thoroughly revised to reflect the modified perspectives and includes the new data available in this rapidly growing field. New chapters on industrial hygiene and medical care have been added. References are given with each chapter.

MUSTARD, HARRY STOLL

Rural health practice. New York: The Commonwealth Fund, 1936. 603 p. illus. 24 cm. \$4.00. 2773

Contents: Introducing the subject. The State Health Department and its relation to local service. Regulation of local health work through state legislation. Organizing a local health department in a rural community: Planning the local health program. Public health education and community organization. The collection of vital statistics. Tabulation and analysis of statistical

material. School health service. Maternity hygiene: The nature and extent of the problem. The maternity hygiene program. The public health aspects of infancy and young childhood. Control of communicable diseases: administrative considerations. Control of communicable diseases: isolation and quarantine. Communicable diseases: epidemiological considerations. Communicable diseases: investigation of sources. Typhoid fever. Syphilis and the public health. The rural tuberculosis program. Rural sanitation: Water supplies and dairy farms. Excreta disposal in rural situations. Sanitation and hygiene in the school. Index.

Note: The author has developed this comprehensive handbook for the health officer in rural areas and small cities out of some 20 years' experience in public health practice in Federal, state, city, and county work, and in connection with foundations and universities. The author has included a wide range of information, suggestions, and discussion—basic material applicable to larger communities as well as that peculiar to the rural situation. The volume is an everyday manual for health officers and their associates in rural areas and in cities other than the very large ones.

NEW YORK ACADEMY OF MEDICINE. COMMITTEE ON PUBLIC HEALTH RELATIONS

Preventive medicine in modern practice, edited, under the auspices of the Committee on Public Health Relations of the New York Academy of Medicine, by James Alexander Miller, chairman, George Kaehr, former chairman, and E. H. L. Gorwin, executive secretary. New York: P. B. Hoeber, Inc., 1942. 851 p. illus. 26 cm. \$10.00. 2774

Contents: Section I, Sociobiological aspects: Prevalence of disease, by Haven Emerson. Significance of population trends, by Frank W. Notestein. Medical attitude toward eugenics, by Haven Emerson. Section II, Clinical aspects: Preclinical medicine and the periodic health examination, by O. H. Perry Pepper. Nutrition and the deficiency diseases, by Norman Tolliffe. Problems of childhood, by S. Z. Levine and William M. Schmidt. Of maternity, by B. P. Watson. Of women, by Howard C. Taylor, Jr. Infections and infestations: Respiratory infections, by A. Raymond Rochez; Intestinal infections, by Thomas T. Mackie; Insect-borne diseases, by Saul Jarcho. Miscellaneous infections, by James A. Moull. Tuberculosis, by James Alexander Miller. Syphilis, by Harold Newton Cole. Gonorrhea, by P. S. Pelouze. Other venereal diseases and venereal prophylaxis, by Arthur W. Grace. Occupational diseases, by A. J. Lanza. Industrial dermatoses, by Louis Schwartz. Diseases of the skin, by George Miller MacKee. Degenerative diseases, by Edgar van Nuys Allen. Heart disease, by Paul D. White. Diabetes, by R. T. Woodyatt. Cancer, by Lloyd F. Craver and J. Samuel Binkley. Surgical aspects, by Charles Gordon Heyd. Aspects of orthopedic surgery, by Robert B. Osgood. Diseases of the genito-urinary tract, by J. A. Campbell Colston. Of the eye, by Arnold Knapp. Infections of the middle ear and nasal sinuses, by Wesley C. Bowers. Oral disease, by John Oppie McCall. Allergy, by Robert A. Cooke. Neurological problems, by Hubert S. Howe. Psychiatric problems in children, by Leo Kanner. In adults, by Winfred Overholser. Alcoholism and drug addiction, by Karl Murdock Bowman. Convalescence, by I. Ogden Woodruff. Section III, Environmental aspects: Control of insect vectors and rodent carriers, by Robert Matheson. Water supply and waste disposal, by Earle B. Phelps. Control of food and drugs, by James Houston Skradner. Hygiene of dwellings and other occupied spaces, by C. E. A. Winslow. Medical services in industry, by R. V. Kickcord. Accidents, by W. H. Cameron. Section IV, Organizational aspects: Legal aspects of preventive medicine, by James A. Tobey. Organization of official health services, by George H. Ramsey. Role of voluntary public health agencies, by Kendall Emerson. Methods of public health education, by J. Rosslyn Earp. Public health nursing, by Katharine Faville. Provisions for care of sick, by Ray Lyman Wilbur. Out-patient departments and social service, by G. Canby Robinson. International aspects of disease control, by Frank G. Boudreau. Index.

Note: This volume is dedicated to the practicing physician and is aimed to draw his attention to the possibilities afforded him in that marginal land between public health and medicine, and to outline the methods by which they can be realized. It aims to bring about an understanding of the common objectives in the practice of medicine and of public health, and thus serve to bring together these two main branches of the profession into whole-hearted cooperation. The book is mainly clinical and represents an attempt to combine in one volume the clinical and environmental aspects of health problems in a manner suited to the needs of both the general practitioner and the specialist. It forms the third edition, completely rewritten, of *Outline of preventive medicine*.

NYSWANDER, DOROTHY BIRD

Solving school health problems; the Astoria demonstration study, sponsored by the Department of Health and the Board of Education of New York City. Dorothy B. Nyswander, director of the study. New York: The Commonwealth Fund, 1942. 377 p. illus. 23 cm. \$2.00. 2774a

Contents: Problems of administration. Plan of the Astoria study. The school physician and his job. Findings and follow-up for the entering group and the specially referred group. Teacher participation. Educational opportunities of the nurse. Daily tasks of the school nurse. Referrals by the teacher as part of the nurse's case load. Keeping school medical records alive. Testing visual acuity. Testing for loss of hearing. Obtaining dental care. Care of the cardiac child. Private physicians and the school health program. Ventures in staff education. Serving the school child. Appendix. Publications relative to the Astoria school health study. Index.

Note: The Astoria demonstration study was set up under the auspices of the Department of Health and the Board of Education of New York City, aided by the American Child Health Association, the Milbank Memorial Fund, the Metropolitan Life Insurance Company, the United States Children's Bureau, and the New York State Department of Health to find how, within available means, the best health service could be given to children. Out of this experimental study has come a new and more effective program throughout which emphasis is placed upon the educational aspects. A simplified record system makes complete information about each child available to school physician, nurse, and teacher, enabling them to cooperate in giving the best health service.

ROSENAU, MILTON JOSEPH

Preventive medicine and hygiene; with chapters upon mental hygiene, by Abraham Myerson; sewage and garbage, by Gordon M. Fair; vital statistics, by John W. Trask; statistical methods, by Carl R. Doering; conservation of vision, by J. Herbert Waite; contraception, by Eric M. Matsner. Sixth edition. New York: D. Appleton-Century Company, 1935. 1481 p. illus. 24 cm. \$10.00. 2775

Contents (abridged): Prevention of the communicable diseases. Venereal diseases, including chapter on contraception by Eric M. Matsner, and a chapter on mental hygiene by Abraham Myerson. Infant and maternal mortality. Conservation of vision and ocular hygiene, by J. Herbert Waite. Public health principles and practice. Food. Air. Soil. Water. Sewage, and refuse disposal, by Gordon M. Fair. Vital statistics, by John W. Trask. Statistical methods, by Carl R. Doering. Industrial hygiene and diseases of occupation. School sanitation and child hygiene. Disinfection. Index.

Note: In writing this book the author's purpose has been to assemble in one volume recent data on hygiene, sanitation, and related fields in medical and other sciences. It is intended for the student of medicine and the physician as well as for those engaged in sanitary engineering or public health work. The chapter on communicable diseases is based on modes of transmission, in the hope that this unusual arrangement will be helpful to those concerned in prevention of infection. All important methods used in public health laboratories are described. In this sixth edition the following subjects are considered for the first time: contraception, maternal mortality, heart disease, diabetes, ringworm, snake poisoning, psittacosis; also periodic health examinations, hospitals, etc. Subjects extensively rewritten are: venereal diseases, sex hygiene, heredity and eugenics, drug addiction, vitamins and deficiency diseases, infant mortality, industrial hygiene and diseases of occupation, scarlet fever, and undulant fever. The following have been reorganized, with addition of much new material: tuberculosis, diphtheria, Vincent's angina, measles, insect-borne diseases, flukes, quarantine, etc.

SEDGWICK, WILLIAM THOMPSON, AND OTHERS

Sedgwick's Principles of sanitary science and public health, rewritten and enlarged by Samuel C. Prescott and Murray P. Horwood. New York:

The Macmillan Company, 1935. 654 p. illus. 22 cm. \$4.60. 2776

Contents (abridged): Health, old age and disease. The etiology or the causes of disease. The rise and influence of bacteriology. Sanitary aspects of the struggle for existence. Infection and contagion. Dirt, dust, air, and disease. Sewage and excreta as vehicles of disease, and their proper disposal. Refuse collection and disposal. Water as a vehicle of infectious disease. The protection and purification of public water supplies. Ice as a vehicle of disease. The sanitation of swimming pools. The sanitation of summer camps. Milk supplies and the public health. Certain uncooked foods as vehicles of disease. The prevention and inhibition of infection, decomposition, and decay. The destruction or removal of infection. Mosquitoes and the public health. Rats and the public health. Flies and the public health. Air in relation to health and comfort. Carbon monoxide poisoning. The relationship of housing to health. Nutrition and the public health. Public health aspects of tuberculosis. Child health. Public health aspects of chronic disease. Organization for public health administration in the United States. Index.

Note: This is a revision and enlargement of Sedgwick's original work which first appeared in 1901. Since that date great progress has been made in public health practice and in the fundamental sciences on which it is based, and it is the purpose of the present edition to incorporate the developments up to 1935. An effort has been made to present a view of modern sanitary science in a form which will appeal to the intelligent and interested general reader, as well as to students in science or engineering interested in sanitary science and public health, and public health officials.

SHRADER, JAMES HOUSTON

614.3
512.86 Food control, its public-health aspects; a manual for regulatory officers, food technologists, and students of the food industry. New York: John Wiley & Sons, Inc., 1939. 513 p. 23 cm. \$4.00. 2777

Contents: Problem of food control. Food technology. Relation of food to the public health. Control measures. Milk production. Milk certification. Milk pasteurization. Ice cream. Butter. Cheese. Concentrated milks. Other dairy products. Meat and its products. Poultry. Eggs. Fishery products. Cereals and bakery products. Fresh fruits and vegetables. Preserved foods. Appendixes: Equivalence of vitamin units. Digest of the new Federal Food, Drug, and Cosmetic Act. Index.

Note: This book provides not only a discussion of the public health aspects of control measures but also a discussion of the nutritional significance of different phases of food technology. Each class of products is discussed from the points of view of technology, relation to public health, and problems of regulatory control.

SMILLIE, WILSON GEORGE

614
512.86 Public health administration in the United States. Second edition. New York: The Macmillan Company, 1940. 553 p. illus. 24 cm. \$4.00. 2778

Contents: Functions of a health organization. Development of public health administration in the U. S. Administrative principles of communicable disease control. Administrative methods in control of diphtheria; scarlet fever; septic sore throat; measles; German measles; whooping cough; mumps; chickenpox; typhoid fever and allied diseases; tuberculosis; venereal disease; acute respiratory infections; smallpox; malaria; rabies; poliomyelitis; meningococcus meningitis; intestinal parasites; a miscellaneous group of diseases of public health importance. Vital statistics. Epidemiology. The public health laboratory. Public health nursing. Sanitation and sanitary inspection. Child hygiene. Public health education. Mental hygiene. Industrial hygiene. Nutrition. Adult hygiene. Municipal health administration. Rural health administration. Health administration in the Federal Government. Voluntary health organizations. Disaster relief; the Red Cross. The practicing physician and the public health department. Appraisal of health activities. Training of public health personnel. Budgets and budget making. The national health program. Appendix. Index.

Note: A source-book for public health workers describing prevailing practices in public health administration. This edition reflects the extraordinary advances of the previous five years and the increased knowledge of epidemiology that has made possible more precise control measures. References are given with each chapter.

SOULE, ELIZABETH STERLING, AND CHRISTINE MACKENZIE

Community hygiene. New York: The Macmillan Company, 1940. 218 p. illus. 19 cm. \$2.00. 2779

Contents: History of the development of community hygiene practices. Sanitation of the food supply. Water supply. Sewage disposal. Housing. Control of the communicable diseases. Community health problems in relation to maternity, infancy and childhood. Programs more recently instituted by official health agencies. The organization for the administration of public health services. Index.

Note: A brief presentation of the most important factors in the maintenance of the public health, stressing the community aspects of preventive medicine. It is written especially for college students, but is equally suitable as text or reference for student nurses, public health nurses, or any school where separate courses in this subject are given. References are given with each chapter.

STIX, MRS. REGINE (KRONACHER), AND FRANK W. NOTESTEIN

612.63
512.86 Controlled fertility; an evaluation of clinic service. Baltimore: The Williams & Wilkins Company, 1940. 201 p. illus. 21 cm. \$3.00. 2779a

Contents: Part I, The problem and the data: The approach to the problem. The group studied. The reliability of the data. Part II, Reproductive experience before clinic attendance: The prevalence of contraceptive practice before attendance at the clinic. The noncontraceptive experience of the group. The effectiveness of untutored efforts at contraception. Family planning. The outcome of the pregnancies experienced by clinic patients. Part III, Reproductive experience after clinic attendance: Clinic service and patient cooperation. The effectiveness of contraception after clinic attendance. Accidental pregnancies with the contraceptives prescribed at the clinic. Part IV, The broader implications of the study: Clinic policy. The birth control clinic as a research agency. The birth control clinic and public health. Birth control and population trends. Appendixes. Bibliography. Index.

Note: A somewhat detailed study of the relation of contraceptive practice to human fertility in a group of patients of the Birth Control Clinic Research Bureau in New York City. The authors have attempted to show the effects of the patients' contraceptive practices on their fertility, to evaluate the influence of the clinic's services, and to consider the place of such a clinic as an agency of public health and welfare. There are over fifty tables of statistical data.

TOBEY, JAMES ALNER

614.0973
756p2 Public health law. Second edition. New York: The Commonwealth Fund, 1939. 414 p. 23 cm. \$3.50. 2780

Contents: Public health and the law. The sources of public health law. The police power and the public health. State health organization. Local health departments. Health officers and employees. Vital statistics. The control of communicable disease. The control of tuberculosis. The control of the venereal diseases. Milk control. Foods, drugs and cosmetics. Nuisances and sanitation. Vaccination. School hygiene. Industrial hygiene and the control of occupational diseases. Liability of municipal corporations. Personal liability of health officers. Liability of individuals and corporations in matters affecting the public health. The preparation and adoption of health legislation. Law enforcement and court procedure. Appendixes.

Note: The current edition of this standard work on public health law for health officials, teachers of public health, and attorneys discusses the basis of laws enacted for the protection and promotion of public health, the law of public health organization and administration, the powers and duties of health departments, personal and corporate liability, and legislation and law enforcement in the United States.

WADSWORTH, AUGUSTUS BALDWIN

614
611.5a Standard methods of the Division of Laboratories and Research of the New York State Department of Health. Second edition. Baltimore: The Williams and Wilkins Company, 1939. 681 p. illus. 23 cm. \$7.50. 2781

Contents (abridged): General laboratory procedures. Methods for preparation of media, glassware, and diagnostic outfits. Methods of the diagnostic laboratories. Methods for sanitary and analytical chemistry. Methods in antitoxin, serum and vaccine laboratories. Methods of administrative offices. Methods in research, publications, and library department. Appendices. Index.

Note: The first edition of this book was undertaken chiefly as a means of maintaining a high standard of work among the many employees of the Department of Health by providing each one with precise, detailed directions for the routine technical procedures which he had to follow. In this second edition all technical details common to different branches of work have been assembled in a section on general laboratory procedures, thus making it possible to include much new material. Attention is called to the new quantitative technique in the complement-fixation tests, the revised colloidal gold test, and to new methods in production, concentration, and standardization of therapeutic sera. The book will be of value to individuals working in this field and also to any department faced with a similar problem.

WALKER, WATSON FRANK, AND CAROLINA R. RANDOLPH

Recording of local health work, by Watson F. Walker and Carolina R. Randolph, Division of Health Studies, the Commonwealth Fund, in coöperation with the Committee on Administrative Practice of the American Public Health Association. New York: The Commonwealth Fund, 1935. 275 p. illus. 31 cm. \$2.00. 2782

Contents (abridged): Foreword. Preface. Development of records. Service records. Preparing and filing record forms. Interpretation. Index of forms. Index.

Note: This volume sets forth a comprehensive and orderly plan of public health record-keeping for use by organized local services, whether health department, voluntary agency, or service administered by board of education. The Committee on Administrative Practice of the American Public Health Association cooperated in the development of the manuscript, which had the benefit also of suggestions from representatives of the National Organization for Public Health Nursing, American Social Hygiene Association, and National Tuberculosis Association.

WALKER, WATSON FRANK, AND CAROLINA R. RANDOLPH

School health services; a study of the programs developed by the health department in six Tennessee counties. New York: The Commonwealth Fund, 1941. 172 p. illus. 23 cm. \$1.50. 2782a

Contents: Plan of the study and characteristics of the sample. Dental caries and what is done about it. Vision findings and treatment. Tonsil defects and what is done about them. Other physical findings. Association of certain defects. Immunization

status of school children. Blue ribbon program and correction of defects. What we may conclude. What should the school health program be? Appendices.

Note: This study of school health services over a six-year span among some 58,000 children was carried on jointly by the Tennessee Department of Public Health and the Commonwealth Fund. Inquiry was directed to such questions as: Do repeated medical examinations influence the correction of physical defects? Does nursing follow-up stimulate correction of physical defects? To what extent are the same defects recorded on repeated examinations without correction? Does the presence of parents at physical examination promote the correction of defects? Is there any significant physical difference between children who have had pre-school supervision by the health department and those who have not? The study has endeavored to determine whether school health services have been effective, and what might be done to make them more effective.

WEBB, CONSTANCE BELL

A history of contagious disease care in Chicago before the great fire. Chicago: The University of Chicago Press, 1940. 169 p. 22 cm. (Social service monographs) \$1.25. 2783

Contents: Medical opinions regarding contagion. Period prior to 1838. Years of scant activity on health problems, 1838-1851. Gradual dissolution of the Board of Health, 1851-spring of 1860. Period of police responsibility for health matters, spring of 1860-1867. First years under the new Board of Health, 1867-October 1871. Conclusion. Bibliography. Appendices.

Note: This monograph summarizes the public health history of Chicago from about 1804, when the first white child was born in that city, to 1871, the year of the disastrous fire. The first chapter attempts to orient the reader to the general theories of contagious diseases then current as well as to the present-day attitudes. An account is given of the struggle of medical men to achieve adequate registration of vital statistics. At the end of each chapter a summary points out the salient features of the period covered. The appendix contains transcripts of certain documentary evidence and there are numerous references in footnotes throughout the text.

WEINZIRL, JOHN

General hygiene and preventive medicine; a text-book for college students, medical students, nurses, public health workers and social workers. Edited by Adolph Weinzirl. Philadelphia: Lea & Febiger, 1937. 424 p. illus. 24 cm. \$4.00. 2784

Contents: Introduction. Immunization. Use of specifics. Control of carriers of infection. Control of sanitary environment. Control of physical environment. Control of personal environment. Control of social environment. Group control.

Note: The subject is approached from the viewpoint of the methods employed to control disease and to improve the health of individuals. A considerable number of diseases are described, their control explained, and the results evaluated.

NURSING

General Works

AIKENS, CHARLOTTE ALBINA

Studies in ethics for nurses. Fifth edition, thoroughly revised. Philadelphia: W. B. Saunders Company, 1943. 378 p. illus. 20 cm. \$2.50. 2785

Contents: Unit I, Orientation, some guiding principles: Ethics: its principle, purpose and development. Evolution of nursing. The hospital and nurse as social factors in the community. Finding one's place in the new environment. Unit II, Problems of personal and professional conduct: Applied psychology and the nurse. Expressions of personality. Personal habits and professional obligations. Truth-telling and its difficulties. Morale, discipline and duty. Putting principles into practice. Ethics and economy. Tact and imagination. Some ethical phases of night duty. Ethics and everyday routine. Good tone in the school of nursing. Ethical aspects of hospital accidents. Developing a symmetrical life. Manner and temperament. Health, recreation and friendship. Unit III, Professional obligations and adjustments: After graduation. Ethical standards for head nurses. The widening field. A nurse and her money. Ethical problems in private nursing. Miscellaneous problems in ethics. Cooperation for wider service. Appendix: Suggestions to instructors. Index.

Note: This text was written for student nurses with the purpose of emphasizing the importance of ethical training, and to aid teachers and students in the study of conduct and duty as it relates to nurses and nursing life. There are some references. For the fifth edition, the opening chapter is new. New topics are discussed such as legal responsibilities, prejudices, social freedom, good citizenship, poverty, adjustments, etc. The appendix is new, as are the topics for student projects, subjects for discussion, and questions for chapter reviews.

BECK, AMANDA KATHRYN, AND LYLA M. OLSON

A reference handbook for nurses. Ninth edition. Philadelphia: W. B. Saunders Company, 1941. 347 p. illus. (part col.) 16 cm. \$1.60. 2786

Contents: Professional standards in nursing. First aid and emergencies. Materia medica. Nursing arts. Medical nursing, communicable diseases. Diet therapy. Obstetrics. Pediatrics. Operating room. Miscellaneous subjects. Improvised equipment. Index.

Note: This handbook is intended as a quick-reference source of practical, essential sick-room information for the graduate nurse and for the student nurse. The small size of the book permits it to be carried in pocket or handbag and the material is so set down as to present facts without need of lengthy reading. For the ninth edition, ten new chapters were added and new material incorporated throughout. Some of the new subjects covered are first aid and emergencies; diet therapy; improvised equipment; normal ranges in tests and significance of abnormal findings; synthesis of medical terminology; and anatomical sketches.

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DAKIN, FLORENCE, AND ELLA M. THOMPSON
Simplified nursing. 70 illustrations. Fourth edition. Philadelphia: J. B. Lippincott Company, 1941. 444 p. illus. (part col.) 21 cm. \$2.00. 2787

Contents (abridged): Nursing care and the non-professional worker: The trained practical nurse. The high school and vocational school home nursing class. Part I, Personal and public health: Getting along with people. The human body. The public's health. Your own health. Food: preparation, use. Simple housekeeping. Part II, Simple nursing procedures: Beds, baths. Personal care of patient, bedsores. Temperature, pulse, etc.,

common symptoms. Enemas, etc., assisting at examinations. Specimens and bedside notes. Medications. Disinfection, quarantine, etc. Bandaging and emergencies. Common injuries, poisons and antidotes, etc. Part III, Practical nursing in special conditions: The mother-to-be, and convalescence. The baby. The child. Chronic diseases. Convalescence and care of aged. Urologic patient. Death. Bibliography. Glossary. Index.

Note: This book, originally written for the practical nurse, has been revised with special attention to the needs of the mother of the family and the groups of women being trained to give simple nursing care in the home or hospital. The material is presented from the lay point of view. In this edition the introduction has been rewritten for directors of practical nursing courses and instructors. It embodies the experience gained in the development under state supervision of courses for practical nurses.

DAY, MARY AGNITA CLAIRE, SISTER

Principles and techniques of nursing procedures as developed in St. Mary's Group of Hospitals of St. Louis University. St. Louis: The C. V. Mosby Company, 1943. 574 p. illus. 22 cm. \$3.50. 2788

Contents (abridged): Part I, Nursing activities associated with the management of the patient's physical environment. II, Admission procedure and simple diagnostic and therapeutic measures: Providing for personal needs of patient. General physical therapeutic measures; application of heat and cold. III, Nursing techniques involved in diagnostic tests and in prophylactic and remedial measures: Special tests. Pre- and postoperative care. Administration of medicines and parenteral fluids. Aspiration and injection of body cavities. Irrigations, medications, etc. Medical aseptic technique. IV, The orthopedic patient in the general hospital. V, Psychiatric procedures. Index.

Note: This textbook is an outgrowth of the nursing procedure manual of the St. Mary's Group of Hospitals of St. Louis University. The plan set forth in the *Curriculum Guide for Nursing Education* has been followed to a certain extent, especially in the basic development. Each procedure is headed by a brief discussion of underlying principles, with its indications, contraindications, or other factors which seem essential to a proper understanding. Procedures have been simplified as much as possible, and principles have been stressed rather than technique, so that adaptations may be made for either home or hospital nursing.

DIEHL, HAROLD SHEELY, AND RUTH E. BOYNTON

Healthful living for nurses. New York: McGraw-Hill Book Company, Inc., 1944. 534 p. illus. 21 cm. \$2.50. 2789

Contents: Safeguarding the health of nurses. Attainment of better health. Nutrition and growth. The choice of foods. Digestive disturbances. Stimulants. Exercise, fatigue, rest. Sunlight and fresh air. Major health problems. Specific disease prevention. Other communicable diseases. Colds and influenza. Care of the nose, throat, ears and teeth. The conservation of vision. Care of the skin and hair. Care of the feet. Glands of internal secretion. Sex life and venereal diseases. Modern parenthood. Mental health. Health problems of advancing years. Choosing a health adviser. Community health. Appendixes.

Note: Much of the subject matter of the present work is based on Diehl and Boynton's *Textbook of healthful living*, New York, 1939. Information considered essential for nurses on matters of personal and community health is presented in informal and non-technical style. The subject of healthful living is discussed from the point of view of the nurse and her special problems, such as care of the feet, care of the skin and hair, and tropical and other communicable diseases. No attempt is made to outline specific treatments or remedies for the diseases discussed. The appendixes add reference material of normal weights, food values, and communicable disease control. Discussion suggestions and reading lists appear at the end of each chapter.

FLIKKE, JULIA (OTTESON)

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Nurses in action. Introduction by Lt. Col. L. L. Gardner. Philadelphia: J. B. Lippincott Company, 1943. 239 p. illus. 21 cm. \$2.50. 2790

Contents (abridged): The scene today. History of the Army Nurse Corps. Becoming an army nurse. Nurses at work. Nurses in action. Army nursing as a career. Other government services.

Note: This book was written primarily to give women interested in becoming nurses information about the nursing profession in times of war. The general activity of the nurse in the Army Nurse Corps has been stressed rather than the technical knowledge required.

FREDERICK, HESTER K., AND ETHEL NORTHAM

A textbook of nursing practice. Second edition, revised. New York: The Macmillan Company, 1938. 418 p. illus. 22 cm. \$3.00. 2791

Contents (abridged): The hospital and the school of nursing. The care of the environment of the patient. Open and closed beds. Admission of a patient. Special care of the mouth, skin and hair. Use of appliances for the care and comfort of the patient. Simple diagnostic measures and the observation of symptoms: temperature, pulse and respiration. Assisting with examinations. Collection of specimens. Charting and record keeping. Enemas. Discharge of a patient from the hospital. Post-mortem care. Bandaging. Isolation precautions. Preoperative and postoperative care. Surgical dressings, special compresses, drainage and irrigation of surgical wounds. Punctures of tissues, vessels and cavities: venepuncture and venesection, paracentesis, infusion or hypodermoclysis, intravenous injections. Local applications of cold and heat, diathermy. Counterirritants, heliotherapy. Hydrotherapy. Diaphoretic treatments. Rectal and colon treatments. Gastric analyses, lavage and drainage, gavage. Treatment of the genito-urinary tract. Treatments of the eyes. Treatment of the ears, nose and throat. Steam inhalations, croup tent, administration of oxygen and carbon dioxide. Introduction to pediatric nursing. The baby's bed, the admission and daily care of the baby. Pediatric procedures, punctures of tissues and body cavities. Index.

Note: A concise text for students of nursing art, giving the fundamentals of medical and surgical nursing care and treatment, including the specialties. A special section is devoted to nursing procedures in relation to the care of infants and children. This edition is a revision of the senior author's *A Textbook of nursing technique*, New York, The Macmillan Company, 1928.

FROST, HARRIET

Nursing in sickness and in health; the social aspects of nursing. New York: The Macmillan Company, 1939. 217 p. illus. 22 cm. \$2.25. 2792

Contents: Part I, The individual, the family and the community in sickness and in health: Development of nursing from a neighborly service to a profession. The student's health. The student and the patient. The patient in the hospital. Neglected stages of illness. What it means to have heart disease. Syphilis. Tuberculosis. "And in health." Health nursing. Nursing and social service. The patient in the clinic. In the home. The community. Development of public health nursing. The graduate nurse. Part II, Social aspects of nursing in the curriculum: The first year. The second year. The third year. Administrative problems. Index.

Note: This book is intended for directors, instructors, and head nurses in schools of nursing; for student nurses as an interpretation of nursing in general and of their own daily experiences in particular; for private duty nurses; and for public health nurses, especially those who are teaching affiliating students. It is also of interest to those contributing to nursing education such as physicians, social workers, and nutritionists. The first part of the book deals with the general philosophy of nursing and much of the material is based upon the author's experience as a teacher, first in The Visiting Nurse Society of Philadelphia, later in The New York Hospital School of Nursing. The second part of the book deals with the methods employed in incorporating the social elements of nursing into the curriculum at the latter school.

GARESCHÉ, EDWARD FRANCIS

Ethics and the art of conduct for nurses. Second edition, revised. Philadelphia: W. B.

Saunders Company, 1944. 358 p. illus. 20 cm. \$2.50. 2793

Contents (abridged): Meaning. Utility. Sources. Purpose of human actions. Pursuit of happiness. Final end of man. Ignorance and inadvertence. Desire. Violence. Fear. Formation of habits and character. Cardinal virtues. Natural law. Conscience. Principles of action. Rights and duties. Formal and material cooperation. Society. Civil government and civic duties. Preparedness. Intellectual qualities of nurse. Nurse's respect for her profession. Service of eminence. Nurse's discretion, reserve, personal refinement, and innocence. Graduate studies and nursing opportunities. Nurse as an educator. Nurse's self respect, personality, conversation, reading, religion, kindness, voice, care of her health, and dress. Discipline of feelings and emotions. Knowledge of the nurse. Nurse's respect for others, loyalty and honor, conscientiousness, conduct toward her patient, patience and diligence, standards and devotion. Nurse and marriage. Nurse's dealings with other nurses. Points for papers and discussion. Index.

Note: This text covers the science of ethics both in its general principles and its particular applications to the duties of nurses. The first part gives the student the philosophical basis for the subject and guides her as to general conduct; the second part covers guiding principles, problems of personal and professional conduct, and professional obligations and adjustments; and the third is devoted to lists of questions and problems related to individual chapters. In the second edition the chapters of Part II were rearranged to accord with the *Curriculum guide for schools of nursing*. New discussions include legal responsibilities, baptism, formal and material cooperation, ethics and the law, scrupulousness, the patient's last hours, the nurse's diligence, cheerfulness, smoking and drinking, sex information and instruction, and making a good start. Additional questions were included in the last part.

GOODNOW, MINNIE

Nursing history. Seventh edition, reset. Philadelphia: W. B. Saunders Company, 1942. 495 p. illus. 20 cm. \$3.00. 2794

Contents: A chronology in general history. A chronology in nursing history. Nursing in ancient times. Medieval nursing. Early English nursing. The reformation. The deaconess movement. Florence Nightingale and nursing in the Crimean War. Florence Nightingale's later work. Development of nursing in Great Britain. Early nursing in America. The first school of nursing. The Red Cross Society. Nursing in American wars. Development of nursing in America: The wide field organizations. Broadening responsibilities. Changing ideas and aims. Nursing in Canada, Australia, and New Zealand. Nurses and nursing schools: In Europe. In Asia. Nursing in other lands. Things accomplished and a forward look. Review questions. Index.

Note: This text is designed primarily for student nurses. Teaching aids consist of 169 illustrations and maps, lists of important dates, and summaries at the ends of chapters. It presents the chief facts in the development of nursing, from ancient days down to modern times, with enough detail to help students to visualize the era and situations in which these events occurred. In the seventh edition 21 new illustrations were included. The section on China was rewritten. New discussions were included on changes in uniforms and caps, a description of the Waltham School of Nursing, development of mental nursing, the Nursing Information Bureau, industrial nursing, changes in distribution of services of graduate nurses, household nursing, hospitalization plans, psychological tests, accrediting program, collegiate schools of nursing, subsidiary workers, schools of nursing versus all-graduate staff, and the second World War. The sections on the development of the status of Negro nurses, state associations, and state registrations were revised. Objective type review questions were added. An abridgment designed for shorter courses is available from the same publisher under the title *Nursing history in brief*, second edition revised, Philadelphia, 1943, 338 p., \$2.25.

GOODNOW, MINNIE

Technic of nursing. Fourth edition. Philadelphia: W. B. Saunders Company, 1941. 536 p. illus. 20 cm. \$3.00. 2795

Contents: Care of rooms and wards. Bed making. Routine work. Serving meals. Feeding. Baths. Patient's comfort. Enemata. Specimens. External applications. Pulse, temperature, respiration, charting. Operative cases. Physical examinations. Surgical dressings. Administration of medicines. Observation of symptoms. Night nursing. Care of the dead. Care of communicable disease.

Douches, catheterization, bladder irrigation. Therapeutic baths. Special enemata and medical procedures. Care of wounds and special surgical procedures. Care in special medical and surgical cases. Care of babies and small children. Convalescent patients. Chronic patients. Eye, ear, nose and throat nursing. Bandaging. Hospital emergencies. Index.

Note: Students in the United States use this book as a text, and graduate nurses find it useful as a reference, particularly if they may have been confining themselves largely to a specialty, and then find need for refreshing their memories on nursing procedures in general. The importance of fundamentals, system, and regulated routine are especially stressed as basic essentials to good nursing. The arrangement of material follows that used in teaching in the average North American hospital and is sufficiently flexible to fit special conditions. For the fourth edition many changes were made, among them the discussions of diet, blood pressure, fever therapy, oxygen therapy, suction siphonage, air conditioning, admission of patients. There are 30 new illustrations, making a total of 209. Review questions follow each chapter.

GOODRICH, ANNIE WARBURTON

649
G-26 The social and ethical significance of nursing; a series of addresses. New York: The Macmillan Company, 1932. 401 p. illus. 22 cm. \$3.50. 2796

Contents: The nurse and ethics. The nurse and education. The nurse and the hospital. The nurse and the community. The nurse and war. The nurse and the world. The nurse and the university. The nurse: three portraits. Index.

Note: A series of addresses and papers portraying the beliefs, aspirations, struggles, and achievements of the builders of the nursing profession, past and contemporary, based on the conception that good nursing is applied ethics.

HANSEN, HELEN FREDERICKA

A review of nursing, with outlines of subjects, questions, and answers. Fourth edition. Philadelphia: W. B. Saunders Company, 1943. 852 p. 20 cm. \$3.00. 2797

Contents: Chemistry. Anatomy and physiology. Psychology. Nutrition, foods, and diet therapy. Hygiene and sanitation. Pharmacology and therapeutics. Microbiology and communicable diseases. Medical nursing. Surgical nursing. Obstetric nursing. Nursing of children. Psychiatric nursing. History of nursing. Professional relationships of the nurse. Sociology. Answers to questions. Index.

Note: The plan of this book is to give a brief but inclusive over-all view of the subjects in the United States nursing school curriculum. Each chapter includes a list of definitions of pertinent terms and a detailed and systematized outline of the topic. Then follow several pages of questions of the matching, completion, true-false, and single or multiple choice types. For the fourth edition, changes were made in 82 percent of the pages and it now includes such material as war gases, first-aid treatment of burns, definitions for charting insulin shock, data on vitamins, lung abscess, trachoma, typhoid therapy, etc. Sociology is outlined. There are 1339 new questions bringing the total for all subjects and of the various types in the book to 6340.

HARMER, BERTHA, AND VIRGINIA HENDERSON

1428 Textbook of the principles and practice of nursing. Fourth edition, revised. New York: The Macmillan Company, 1939. 1047 p. illus. (part col.) 22 cm. \$3.50. 2798

Contents (abridged): Nursing and community health service. Fundamentals of nursing care. Assisting with diagnostic procedures. Assisting the physician with therapeutic measures. Introduction to medical and surgical nursing. Appendix. Index.

Note: A comprehensive treatise of the fundamentals of nursing care, including that of the commoner types of medical and surgical diseases. This edition includes new, simplified classifications, new procedures, and new material on the social aspects of nursing, health teaching, occupational therapy, and rehabilitation. The contents follow the plan outlined in the Curriculum Guide of the National League of Nursing Education. There is a list of references with each chapter.

HULL, EDGAR, AND OTHERS

Medical nursing, by Edgar Hull, Christine Wright and Ann B. Eyl. 169 illustrations, in-

cluding 12 color plates. Second edition. Philadelphia: F. A. Davis Company, 1941. 650 p. illus. (part col.) 22 cm. \$3.50. 2799

Contents (abridged): Unit I, Basic principles of medical nursing. Manifestation, signs and symptoms, recognition, treatment and prevention of disease. Unit II, Diseases of the respiratory system and their nursing care. Unit III, Diseases of the cardiovascular system and their nursing care. Unit IV, Diseases of the blood and blood-forming organs. Unit V, Diseases of the digestive system. Unit VI, Diseases of the urinary system. Diet in diseases of the urinary system. Unit VII, Diseases of the locomotor system. Diseases of the bones, joints and muscles. Unit VIII, Diseases of the ductless glands. Unit IX, Diseases of the nervous system. Unit X, Metabolic diseases and their nursing care. Unit XI, Diseases due to deficiency of nutrition. Unit XII, Diseases due to emotion. Unit XIII, Diseases due to allergy and to physical and chemical agents. Unit XIV, Infectious diseases. References. Index.

Note: Gives the student nurse an understanding of the principles of general medicine and provides brief, accurate descriptions of all diseases that fall within the realm of internal medicine. Theory, nursing care, dietetics, laboratory tests and findings, medical and surgical nursing are integrated to lead to an understanding of the actual needs as found at the bedside today.

JAMIESON, ELIZABETH MARION, AND MARY SEWALL

Trends in nursing history, their relationship to world events. Second edition. Philadelphia: W. B. Saunders Company, 1944. 651 p. illus. (part col.) 20 cm. \$3.00. 2800

Contents (abridged): Part I, Ancient civilization (circa 5000 B.C.-500 A.D.): Our changing world. Life among primitive peoples. Migration of tribes. The birth of Christ in Bethlehem. Part II, The middle ages (circa 500-1500 A.D.): The early middle ages: society in small cooperative units. The late middle ages: society becoming mobile; detachment of individuals. Part III, The modern era (circa 1500-): Scientific, economic, and social evolution: Renaissance, Protestant revolt, and a decline in nursing (1500-1860). Early hospitals and nursing in America. Sporadic efforts at social reform. Modern development of social agencies (1860-1893). Group consciousness develops with growth of schools (1893-1920). Raising the level of nursing education (1920-1935). Adjusting to rapid social change. International relationships. Nursing economics. The nurse as a citizen. Index.

Note: Designed for the use of undergraduate student nurses, this text sums up the general long-time trends in nursing history which have led to conditions of the present, and which also must influence the future. General history is included to explain how, step by step, adjustments have been made to contingent political and economic changes. Reference to the history of woman is emphasized, and changes indicated in her manner of life and social status. A sociological approach shows the student her responsibility for contributing a share to the building of the new and more democratic social structure demanded by our times. Events rather than people are emphasized to bring more forcibly to the student the close relationship of nursing to the whole process of social growth. Teaching aids consist of 114 figures, 6 maps, 6 charts, and a summary. Discussion topics and bibliography at the end of each chapter. In the second edition the section on modern history was thoroughly revised to stress the development of modern nursing trends in relation to world events.

JENSEN, DEBORAH (MACLURG)

The history of nursing. St. Louis: The C. V. Mosby Company, 1943. 310 p. illus. 22 cm. \$2.75. 2801

Contents: Part I, Backgrounds for the development of professional nursing: Economic background: the industrial revolution. Medical: the evolution of modern medicine. Physical: the hospital. Social: the emancipation of women. Pre-Florence Nightingale nursing as a background for the development of professional nursing. Part II, Development of professional nursing: Florence Nightingale. American nursing. British nursing since Florence Nightingale. Canadian nursing. The Red Cross; the Army Nurse Corps. Development of nursing outside the hospital. Nursing in other countries. International relations in nursing. The past, present and future. Appendix: Year of founding of some of the early American schools of nursing. Index.

Note: A study of the history of nursing from the modern sociological approach. It is designed for the student nurse and

aims to give her the background of the past in her own profession and also a brief account of the other currents in our social structure by which her profession has been influenced and moulded.

JENSEN, DEBORAH (MACLURG)

Nursing care studies. Third edition of Student's handbook on nursing case studies. New York: The Macmillan Company, 1940. 197 p. 20 cm. \$1.75. 2802

Contents (abridged): What the nurse should know. How to make the study. Specific instructions for making nursing studies. The family study. General bibliography. Appendix for supervisors: Supervision and grading of nursing care and family studies; suggestions for grading nursing care and family studies; grading scale for nursing care study; grading scale for family study; bibliography for teachers.

Note: A text designed to teach students of nursing to understand the full significance of nursing problems through the case study method, whereby individual social studies of patients are correlated with medical and nursing data, resulting in highly individualized rather than routine care. Questions and exercises are given at the ends of chapters.

JENSEN, JULIUS, AND DEBORAH (MACLURG) JENSEN

Clinical nursing in medicine. An appendix of diets prepared by Howard A. Rusk and collaborators. New York: The Macmillan Company, 1941. 808 p. illus. 22 cm. \$3.50. 2803

Contents (abridged): General introduction. Fundamental principles. Metabolic and deficiency diseases. The infectious diseases. Allergy. Diseases due to poisons, chemical and physical agents. Diseases of the respiratory system. Diseases of the cardiovascular system. Diseases of the blood and blood-forming organs. Diseases of the gastro-intestinal system. Diseases of the urinary system. Diseases of the musculo-skeletal system. Diseases of the ductless glands. Diseases of the nervous system. Appendixes: Diets. A record of the student's basic experience in medical nursing. Index.

Note: Designed as a text for the undergraduate nursing student and as a reference book for the practicing nurse, this work aims to include the knowledge necessary for the nursing care of the common diseases. It includes discussions of special services such as isolation hospitals, venereal disease clinics, tuberculosis sanatoria, and services for nervous and mental diseases. Public health and social aspects of disease are emphasized. The contents and arrangement conform closely to the requirements of the Curriculum guide of the National League of Nursing Education. There is a list of references at the end of each unit.

MINNESOTA. UNIVERSITY. SCHOOL OF NURSING

A manual of nursing procedures, University of Minnesota, by Marion L. Vannier and Barbara A. Thompson. Revised by the faculty of the School of Nursing. Fourth edition, revised. Minneapolis, Minn.: Burgess Publishing Company, 1941. 347 p. illus. 23 cm. \$2.50. 2804

Contents: Maintenance of a wholesome environment. Nursing for general hygiene and comfort of the patient. Observation and recording of symptoms. Assisting with diagnostic measures. Enemata. The administration of medicines. Pre- and post-operative care including handling of sterile materials. Local and general applications of heat and cold. Administration of fluids para-orally. Gastric expressions and irrigations. Catheterization and related procedures. Vaginal treatments. Paracenteses or withdrawal of fluid for diagnostic and therapeutic purposes. Nursing in relation to the eye, ear, nose and throat. Adaptation of communicable disease. Care of the body after death. Appendix. Index.

Note: A manual in outline form designed for use by student nurses as a compilation of work sheets, including a numbered step-by-step description of nursing procedures as demonstrated by instructors. Intended to supplement classroom instruction and other nursing texts which supply medical principles. The fourth edition contains new bibliographic references in each chapter.

NATIONAL LEAGUE OF NURSING EDUCATION

A curriculum guide for schools of nursing, second revision, 1937. Committee on Curriculum: Isabel M. Stewart, chairman. New York: National League of Nursing Education, 1937. 689 p. illus. 21 cm. \$3.50. 2804a

Contents: Curriculum revision—a cooperative enterprise: Organization and plan for curriculum revision. Philosophy and aims of the curriculum. Standards and specifications for the curriculum. Sources and techniques used in selecting curriculum materials. Planning the program of studies, constructing courses of study. Administration of the curriculum. Program of studies with outlines of proposed courses and extra-professional program: Biological and physical science—anatomy and physiology, microbiology, chemistry. Social science—psychology, sociology, social problems in nursing service, professional adjustments I and II. Medical science—introduction to medical science, pharmacology and therapeutics. Nursing and allied arts—introduction to nursing arts: Nutrition, foods, and cookery, diet therapy. Medical and surgical nursing, obstetric nursing, nursing of children, psychiatric nursing, nursing and health service in the family, advanced nursing and electives, the extra-professional program. Source material and curriculum aids: Practical objectives in nursing education. Master list of disease conditions. Characteristics of a nurse able to adjust well to nursing situations. Teaching methods. Measuring the outcomes of the educational program. Suggestions for arithmetic review and tests. Suggestions for using the curriculum guide in building the educational program of an individual school. Some suggestions for schools offering basic curricula in nursing leading to degrees. The curriculum committee.

Note: This guide for nursing educators, hospital administrators, and members of boards of trustees and nursing school committees interested in revising or building curricula for their nursing schools has had a wide influence on nursing education in the United States.

NATIONAL LEAGUE OF NURSING EDUCATION. CURRICULUM COMMITTEE

List of books suggested for libraries in schools of nursing. New York: National League of Nursing Education, 1942. 91 p. 23 cm. Paper, \$0.75. 2804b

Contents (abridged): Anatomy, physiology and related sciences. Chemistry and physics. Education. History. Hospital economy and administration. Introduction to the nursing arts. Library science. Medicine and surgery. Microbiology. Nutrition and diet therapy. Obstetrics and obstetrical nursing. Pathology. Pediatrics and nursing of children. Professional adjustments. Psychiatry, psychiatric nursing and mental hygiene. Psychology and educational psychology. Public health, public health nursing and industrial hygiene. Reference books. Social hygiene and sex education. Sociology and economics, social aspects of nursing and social work. Therapeutics including occupational therapy. Directory of publishers.

Note: Some 1700 titles are arranged under the headings given. Where the subject matter permits, titles have been listed under more than one heading.

NATIONAL ORGANIZATION FOR PUBLIC HEALTH NURSING

Board members' manual, for board and committee members of public health nursing services, by the National Organization for Public Health Nursing. Second edition, revised and reset. New York: The Macmillan Company, 1937. 173 p. 19 cm. \$1.90. 2805

Contents: What is public health nursing? What is a qualified public health nurse? How to administer public health nursing. Organizing a new service. Finances. The board of directors of a voluntary public health nursing organization. Promotion of citizen interest in tax-supported services. Functions of committees. Medical advisory committee. Publicity committee. Developing a volunteer program. Informing the board member. Meetings. Relationship of board to professional staff. Personnel policies. Relationships with other organizations. Appendix: Suggested constitution and by-laws. Suggested rules for an advisory public health committee. Bibliography. Index.

Note: This manual is written for board and committee members of public health nursing services to guide them in administering services, managing finances, determining policies, and planning programs in public health nursing agencies. It is intended, too, as a handbook of reference for members of committees which act in an interpretive or advisory capacity to the health agencies, whether public or private. The second edition contains new material on minimum professional requirements, citizen participation in nursing services, publicity, and community relationships.

NEW YORK (CITY) DEPARTMENT OF HOSPITALS. DIVISION OF NURSING

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Standard nursing procedures of the Department of Hospitals, city of New York. Prepared by the Committee on Nursing Standards, Division of Nursing, Department of Hospitals. Mary Ellen Manley, director. New York: The Macmillan Company, 1943. 436 p. illus. 22 cm. \$3.25. 2806

Contents: History of the development of the Department of Hospitals. The care of the sick: Our philosophy. Ward administration—administrative procedures relative to patients. Control of infections and accidents. Cleaning and care of the nursing area and its equipment. Preparation and care of beds. Observing, reporting, and recording of symptoms. General cleanliness, comfort and safety of the patient. Special problems of comfort and cleanliness. Preparing and assisting with examinations, treatments and diagnostic tests. Use and care of mechanical appliances. Nutrition. Administering medication. Irrigating or douching cavities of the body. The application of heat and cold to the patient's body. Introduction of fluid into the body. Withdrawal of fluid from the body. Collecting and disposing of pathologic specimens. Obstetric nursing. Nursing of infants and children. Basic procedures in neurologic nursing. The hospital in the community. Bibliography. Index.

Note: Describes methods and procedures used in New York's several municipal hospitals. Basic principles of nursing are kept in mind throughout, in order that the nurse may adapt specific procedures to the circumstances. It will be of use to all types of hospitals, large and small, as a text or reference work in the art of nursing.

PFEFFERKORN, BLANCHE, AND MARION ROTTMAN

610.73
647.2
Clinical education in nursing. New York: The Macmillan Company, 1932. 173 p. illus. 22 cm. \$2.50. 2807

Contents (abridged): Technique for measuring nursing quantitatively and qualitatively. Analysis of clinical teaching field of hospital and organization of nursing service. Assignments and rotation on services and correlated instruction. Methods of determining the amount of supervision provided. Job analysis as an administrative and educational tool. Appendix. Index.

Note: For nursing educators, supervisors, hospital administrators, and board members. This report is based on actual experiment and experience of methods and techniques for conducting a bedside teaching program and evaluating the quantity and quality of bedside care and clinical instruction. Numerous charts and tables illustrate the techniques employed.

ROTHWEILER, ELLA L., AND JEAN MARTIN WHITE

The art and science of nursing. With a section on hydrotherapy by John S. Coulter, and a section on bandaging, and a unit on first aid treatment by Felix Jansey. With 145 illustrations. Third edition. Philadelphia: F. A. Davis Company, 1942. 793 p. illus. (part col.) 22 cm. \$3.50. 2808

Contents (abridged): Unit I, Orientation to nursing and to the school of nursing. Unit II, The nurse and health conservation. Unit III, Orientation to the hospital, the patient and the nursing service. Unit IV, Organization and care of the patient's environ-

ment. Unit V, General care of the patient. Unit VI, The patient's rest, comfort, and recreation. Unit VII, Physical examinations and symptomatology. Unit VIII, Supportive, remedial, palliative and protective treatments. Unit IX, Medical nursing skills. Unit X, Surgical nursing skills. Unit XI, First aid treatment. Unit XII, Collateral reading. Index.

Note: The first edition of this book was the successor to *The science and art of nursing*, by the same authors, the name being changed because of the very numerous changes made in the text. Emphasis was placed on the scientific aspects of nursing and on the reasons for certain procedures and the results to be obtained by their use. In this third edition a new unit of three chapters on the nurse and health conservation has been added, also material on blood and plasma banks, the "iron lung," and many other subjects. Use of a double-column page has reduced the size of the book without necessitating reduction in the subject matter.

SEYMER, LUCY RIDGELY (BUCKLER)

A general history of nursing. New York: The Macmillan Company, 1933. 317 p. illus. 22 cm. \$3.25. 2809

Contents: Origins. Deaconesses and early Christian hospitals. Hospitals and nursing in the Middle Ages. From the Reformation and Renaissance to the end of the eighteenth century. The nineteenth century. Florence Nightingale and the Crimean War. The Nightingale School. Florence Nightingale's writings and contemporaries. The Red Cross and nursing. Military and naval nursing. The development of training schools. The development of nursing education and curricula. Public health nursing; private nursing. Psychiatric nursing. State recognition of nursing. Nurses' organizations. Appendices: Nursing magazines of a national character. Delegates to the nursing section, Cannes Conference (1919). National associations. Summary of registration requirements in England, France, State of New York, New Zealand, and Prussia. List (with dates) of countries where state regulations have been adopted. Bibliography. Index.

Note: A concise but comprehensive survey of nursing from earliest times, with emphasis on modern developments. The various nursing systems in various parts of the world are contrasted, and the development of specialized types of nursing outlined.

SMILEY, DEAN FRANKLIN, AND OTHERS

The principles and practice of hygiene, by Dean Franklin Smiley, Adrian Gordon Gould, and Elizabeth Melby. New second edition with corrections and additions. New York: The Macmillan Company, 1935. 495 p. illus. 22 cm. \$3.00. 2810

Contents (abridged): Introduction. The prevention of respiratory disorders. Diet and the digestive tract. Hygiene of the nervous system. Posture and exercise. The hygiene of the circulatory and uro-genital systems. Hygiene of the special senses. Prevention of communicable disease. The nurse and health education. Hygiene and health-habit formation. Community sanitation. Appendix. Glossary. Index.

Note: Designed to teach the undergraduate nurse the fundamental principles upon which good health is built and maintained, with emphasis upon prevention. The second edition considers the nurse as a teacher of hygiene and outlines a health program for schools of nursing. There is a new section on community sanitation. Each chapter is followed by a brief summary and suggestions for further reading.

SMITH, MARTHA RUTH, EDITOR

An introduction to the principles of nursing care. Science adviser, Jean Broadhurst. 83 illustrations in the text. Second edition, revised. Philadelphia: J. B. Lippincott Company, 1939. 661 p. illus. 21 cm. \$3.00. 2811

Contents (abridged): Introduction: A concept of good nursing. Unit I, Perspective of nursing and its relationships: Nursing in its personal, and community relationships. Planning nursing care. General principles. Unit II, General nursing care: Observation of the patient. Supportive measures, physical and mental. Routine in hospital and home. Creating and maintaining the right physical environment. Unit III, Principles of remedial nurs-

ing procedures: This human body. Disorders and conditions demanding nursing care. Clinical recording. The sicker patient. Scientific principles the basis of nursing procedures. Principles of nursing procedures and treatments grouped by tracts of the body. Scientific bases underlying nursing procedures, by Jean Broadhurst. Table of insecticides. Index.

Note: This book, of composite authorship, is written as a textbook for the nurse who is just beginning her nursing education. Its aim is to enable her to gain an understanding of the principles involved in planning and carrying out good nursing care so that she may adapt them to her nursing treatments in caring for the individual patient. In this second edition the changes made have been in Unit III. The added material covers: (1) inclusion of more specific information related to the scientific bases underlying the procedure principles in order more clearly to delineate cause-and-effect relationships for the younger students; (2) more specific indication of solutions used, their strength and methods of preparation; (3) more specific data related to observing and charting the effects and results of treatments. The chapter entitled "Nursing care of the sicker patient" is new.

SPALDING, EUGENIA (KENNEDY) 3rd, 1946

Professional adjustments in nursing; for senior students and graduates. Second edition, revised and reset. 30 illustrations. Philadelphia: J. B. Lippincott Company, 1941. 560 p. illus. 21 cm. \$3.00. 2812

Contents: Problem solving: an essential in making professional adjustments: Technique and general sources. Collection, evaluation and organization of sources. Nursing in the present social and economic situation. Nursing as a profession. A survey of vocational opportunities for professional nurses. A general view of fields of work open to nurses. Nurses in public service. Making an intelligent choice of a field of work. Continued education and professional growth. Securing, filling and resigning from a position. The alumnae association. The American Nurses' Association. International nursing relationships. The National League of Nursing Education. The National Organization for Public Health Nursing. The American Red Cross. Nursing and related legislation. Public relations in nursing. Some organization principles and practices which aid in professional adjustments. Legal relationships, responsibilities and problems. Economic security. Professional relationships and personal growth. Appendix. Index.

Note: A text for senior nursing students and a reference for graduate nurses, offering a guide to contemporary social and professional trends. The material is presented in four main units, each of which is arranged in catechetical form. The book is designed to aid the nurse in the intelligent use of the resources of current literature, to describe the vocational opportunities and their requirements, the problems and responsibilities involved, and the causes of success or failure. The second edition contains minor changes in arrangement of material and new data on the changes in the economic and social situation between 1939 and 1941. There are extensive bibliographies following each section.

TAYLOR, ANNA M.

Ward teaching; methods of clinical instruction. 16 illustrations. Philadelphia: J. B. Lippincott Company, 1941. 304 p. illus. 21 cm. \$3.75. 2813

Contents (abridged): Part I, Fundamentals of the ward-teaching program: Description and organization. Orientation. The written plan for informal instruction. Administration of the program. Part II, Methods and practices of ward teaching: The discussion methods. Questioning. Conferences, group and individual. Nursing clinic. Demonstration. Nursing-care plan, study. Insights from nursing-care studies. Daily patient assignment. Teaching aids. Evaluation. Part III, Supplementary materials: Topics for ward teaching. Records, ward-instruction, case-experience and nursing-procedure. Index.

Note: This book is intended to serve as a source of reference for the head nurse, the supervisor, and the ward instructor. Its aim is to help the head nurse in planning and conducting her ward-teaching program, in planning ward-teaching records, and in instructing students in the care of patients. The emphasis throughout is on methods of teaching. The problems of the beginning ward teacher are noted, and the responsibilities of the more advanced teacher are considered in detail. The material is based largely on the program now in effect at the Massachusetts General Hospital.

TRACY, MARGARET ANTHONY

Nursing, an art and a science. By Margaret A. Tracy and collaborators. Foreword by Annie Warburton Goodrich. With 183 illustrations. Second edition. St. Louis: The C. V. Mosby Company, 1942. 754 p. illus. 22 cm. \$3.50. 2814

Contents (abridged): Part I, General considerations: The patient's surroundings. Admission and discharge. Diet, elimination, and sleep. Special measures in communicable diseases. Nurse as health teacher. II, Diagnostic procedures: Temperature, pulse, etc. Collection of specimens. Function tests for kidney, gastrointestinal tract. Blood tests. III, Therapeutic procedures: Administration of medicines. Catheterization. Enemas. Pre- and postoperative care. Adapting nursing care to various types of patients. Procedures: tests, injections, therapies, etc. Appendices: Guide sheet for the study of a patient. How information about a patient and his disease may be assembled, interpreted, and used as a basis for planning nursing care. Table showing channels by which pathogenic organisms leave the body. Index.

Note: A presentation of nursing as it is taught in a modern medical center and as it is practiced in the hospital and in the home. Each chapter represents the collective thinking of a group of instructors engaged in teaching nurses. Several new chapters have been added in this second edition. Among them is the one concerned with hospital housekeeping which includes a detailed discussion of the care of the patient's environment, equipment used, control of pests, and safety measures used in hospitals. The chapter on charting has been expanded with a view to helping the young student learn how and what to observe and to record. A supplement including all of the commonly used nursing procedures has also been added. It is suggested that this may be of aid to the graduate nurse in carrying out procedures which have been developed since her graduation. The procedures presented are those used in the University of California Hospital.

YOUNG, HELEN, AND OTHERS, EDITORS

Lippincott's quick reference book for nurses, compiled and arranged from various sources, by Helen Young, with the assistance of Georgia A. Morrison and Margaret Eliot. Fifth edition, completely revised. Philadelphia: J. B. Lippincott Company, 1943. 602 p. illus. 17 cm. \$2.00. 2815

Contents: Abbreviations. Calculations. Solutions. Tables. Materia medica. Nursing technics. Dietotherapy. Medical and surgical nursing. Obstetrical nursing.

Note: A brief handbook which presents in outline form satisfactory procedures for most nursing situations. The material is based on data gathered from many modern textbooks and from procedures current in numerous hospitals. The subjects are arranged in alphabetical order under each of the headings indicated in the table of contents above. In the fifth edition the section on materia medica has been revised to include the sulfonamide derivatives and their applications, and there are additions to such subjects as blood pressure and blood transfusion, gonorrhea in men and women, pneumonia, shock, burns, fractures and head injuries. A summary of poison gases and their first-aid treatment is also included. The endpapers contain tabulated data on contagious diseases and common poisons and their treatment. The pages are not numbered and there is no index.

Works on Special Topics

ARNOW, LESLIE EARLE

Introduction to physiological and pathological chemistry, with laboratory experiments. With an introduction by Katharine J. Densford. Second edition. St. Louis: The C. V. Mosby Company, 1943. 574 p. illus. 22 cm. \$3.75. 2815a

Contents: Introduction. Metric system. Chemical substances. Atoms and molecules. Chemical shorthand and concept of valence. Oxygen. Energy transformation. Water. Solutions. Acids, bases, and salts. Ionization. Oxidation. Reduction. Introduction

to organic chemistry. Nature of enzymes. Chemical nature of lipids. Metabolism of lipids. Chemical nature of carbohydrates. Metabolism of carbohydrates. Chemical nature of proteins. Metabolism of proteins. Chemistry of digestive tract. Inorganic metabolism. Urine. Hormones. Vitamins. Introduction to nutrition. Introduction to laboratory chemistry. Introduction. Metric system. Chemical substances and reactions. Oxygen. Energy transformation. Water. Solutions. Acids, bases and salts. Ionization. Oxidation and reduction. Organic compounds. Enzymes. Lipids. Carbohydrates. Proteins. Digestive tract. Tests for some inorganic substances in blood and urine. Urine. Hormones. Vitamins and nutrition. Appendix.

Note: A text and reference book for nurses. The second edition incorporates advances in the field of biochemistry, including new material on the sulfonamides and on vitamins.

AVERILL, LAWRENCE AUGUSTUS, AND FLORENCE C. KEMPF

Psychology applied to nursing. Second edition, revised. Philadelphia: W. B. Saunders Company, 1942. 455 p. illus. 20 cm. \$2.50. 2816

Contents: Unit I, Regulation of our behavior: Motivation of our behavior. Habits, attitudes and other determiners of behavior. Conflict adjustment, and maladjustment. Unit II, Mechanisms behind our behavior: The sense organs and their functions. The nervous system and its relation to our behavior. Our muscles and glands. Unit III, Relationship of learning to behavior: How to learn efficiently. Further principles and conditions of learning. The individual learner. Unit IV, Behavior in specific life periods: Psychology of childhood. Psychology of adolescence. Achieving adulthood. Unit V, Behavior as related to emotional life: Feeling and emotion in our lives. The psychology of the family. The nurse as practical psychologist. Index.

Note: Designed for the student nurse, this text has been written from the mental hygiene point of view. It is a survey of the motives and adjustments of those who care for the ill, or who are associated with the ill, or who are themselves ill. Thought problems and suggested readings are given at the ends of chapters and footnotes are placed wherever advisable. In the second edition, rearrangement of contents has been made according to the unit system of presentation; new problems included, and new sections added on unconscious emotional factors in behavior, Freudian psychology, anxiety, and role of identification in childhood.

BIDDLE, HARRY CLARENCE

Chemistry in health and disease. Second edition. Over 200 illustrations. Philadelphia: F. A. Davis Company, 1942. 718 p. illus. 22 cm. \$3.50. 2816a

Contents (abridged): Part I, Inorganic chemistry: Some fundamental facts. The electron theory and equations. Oxygen—the life-supporting element. Water, the most important liquid. Solutions, liquids of everyday use. Ionization, the explanation of chemical action in solution. Acids. Bases. Salts. Nonmetals and metals. Part II, Organic chemistry: The chemistry of the hydrocarbons and their derivatives. Substitution products of hydrocarbons. Carbohydrates, fats, proteins. Part III, Biochemistry: The chemistry of digestion of blood and lymph, urinary excretion, chemical changes in the tissues, vitamins and milk. Part IV, Appendix. Part V, Laboratory chemistry. Introduction and exercises. Glossary. Bibliography. Appendix. Index.

Note: A comprehensive text, closely related to the practical experiences of the student nurse and providing sufficient material for the 60 to 90 hours course as given in American nursing schools. Laboratory exercises are included. The author has prepared also a brief work for short courses: *Chemistry for nurses*, (see above).

BIDDLE, HARRY CLARENCE

Chemistry for nurses, including certain essential principles from inorganic and organic chemistry, and biochemistry. With 153 illustrations. Second edition. Philadelphia: F. A. Davis Company, 1941. 327 p. illus. 22 cm. \$3.00. 2817

Contents: Part I, Inorganic chemistry: Exploring the make-up of the world. Structure and behavior of atoms. Oxygen: the breath of life. Water: the most important liquid in the world. Solutions: liquids of everyday use. Ionization: facts explaining chemical and electrochemical reactions in solution. Acids: a

study of the hydrogen ions. Bases: a study of the hydroxyl ions. Salts: compounds having no common ion. Metals and non-metals: base-forming and acid-forming elements. Part II, Organic chemistry: Introduction: compounds that make life possible. Important classes: substitution products of hydrocarbons. Carbohydrates: aldehydes or ketone derivatives or complex alcohols. Fats: our most important body storage foods. Proteins: tissue builders. Digestion: chemical changes in the alimentary canal. Part III, Appendix: Vitamins. Milk. Blood. Urine. Chemical balance of the body. Foods which help waste elimination. Antiseptics and disinfectants. Methods and measurements. Temperatures. Solubility. Antidotes for some common poisons. First-aid treatment. Some qualitative tests. Periodic table. Reference and collateral reading. Table of physical constants of the elements. Index. Part IV, Laboratory experiments. Part V, Glossary.

Note: This textbook, an outgrowth of the author's experience in giving lecture and laboratory courses for nurses, presents the essential facts of chemistry which may be covered in the minimum 45-hour course recommended by the National League of Nursing Education. The arrangement of the text is designed to aid the student in remembering the essential points—outlines at the beginning of the chapters, questions following the outlines, review questions at the end, topics for oral and written reports, etc. New discoveries have been incorporated in the present edition and older theories have been modified whenever necessary.

BIDDLE, WILLIAM EARL, AND MILDRED VAN SICKEL

Introduction to psychiatry. With a foreword by William C. Sandy. Philadelphia: W. B. Saunders Company, 1943. 358 p. illus. 20 cm. \$2.75. 2818

Contents: Unit I, Orientation to the nursing service: Introduction to the mental hospital. Care of the new patient. Special psychiatric problems. Unit II, Special therapies in treatment of psychiatric disorders. Unit III, Introduction to foundation of psychiatry: History of psychiatry. Etiology of mental disease. Symptomatology of mental disease. General types of abnormal behavior. Unit IV, Psychiatric disorders: The functional psychoses. The organic psychoses. Unit V, Psychiatry and the community: Legal considerations. Prevention of mental disease (mental hygiene). Psychiatric schools of thought. Appendixes: Answers to queries of a newly admitted patient. Annotated bibliography. Index.

Note: This book is addressed primarily to nurses and nursing attendants, and is also of interest to junior medical interns, theological interns, social service workers, and occupational therapists, whose work requires understanding of mental diseases and borderline psychoses, encountered both inside and outside of psychiatric hospitals. The object of the authors has been to present a broad viewpoint of the entire field, emphasizing the attitudes and approaches to the problem of mental disease. "Questions" are placed at the ends of chapters.

BLUMGARTEN, AARON SAMUEL

A textbook of medicine for students in schools of nursing with the assistance on "nursing care" of Eva Jimmerson. Second edition completely revised and rewritten. New York: The Macmillan Company, 1932. 662 p. illus. (part col.) 22 cm. \$3.50. 2819

Contents: Introduction. Principles of medical nursing. Part I, Infectious and allergic diseases: Infection and immunity. Septicemia. Specific toxemias. Contagious diseases. Specific infections of the intestinal tract. Specific local infections. Specific acute infections of the lungs. Tuberculosis. Specific infections of the nervous system. Uncommon infectious diseases. Infectious diseases caused by animal parasites. Worms. Tropical diseases. Allergic diseases. Diseases due to physical and chemical causes. Part II, Diseases of organs and systems: Diseases of: Nose, throat and larynx. Lung. Heart. Blood vessels. Blood and blood-forming organs. Mouth, salivary glands and esophagus. Stomach. Intestines. Liver, gall bladder and pancreas. Peritoneum. Kidneys and urinary tract. Diseases of metabolism. Deficiency diseases. Diseases of ductless glands. Diseases of joints, bones and muscles. Diseases of the nervous system. Index.

Note: The purpose of this book is to instruct nurses in the essential facts of internal medicine, and the subject matter is handled throughout from the nurse's point of view. The classification employed is that of the National League of Nursing Education. In the present edition the text has been thoroughly revised in an effort to present the material more clearly. In considering

each disease, the cause, pathological physiology, symptoms, diagnostic measures, course, complications, treatment, nursing care, etc., are described. Pertinent new information has been included, and a new chapter on the principles of medical nursing has been added, together with new material such as the public health nursing methods and sections on various subjects including compensatory mechanisms in each form of valvular disease, osteitis deformans, Simond's disease, and tularemia.

BOGERT, LOTTA JEAN

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Nutrition and physical fitness. Fourth edition, fully revised and reset. Philadelphia: W. B. Saunders Company, 1943. 500 p. illus. 20 cm. \$3.00. 2820

Contents (abridged): Part I. Foods. Part II. Body needs. Part III. Body processes. Part IV. Meal planning. Part V. Diets for special conditions. Appendix. Index.

Note: A text for students of nursing and home economics and for laymen. Its three-fold purpose is: (1) To gather into a single volume facts useful in meeting everyday nutritional problems, which have been gleaned from the fields of food composition and economics; the chemistry and physiology of body processes; dietetics, and medicine; (2) To present this information in a manner understandable to those with no previous knowledge of chemistry; (3) To point out how such knowledge may be utilized for preventing ill health and promoting physical fitness. Footnotes are given and in the appendix are found tables of nutritive values of foods, tables of weights, heights and ages of men, women and children, and 100-caloric portions of common foods. For the fourth edition, the discussion of minerals and vitamins has been expanded from two to six chapters. A discussion has been added on nutritional problems growing out of scarcity and rationing of certain foods in wartime.

BROADHURST, JEAN, AND LEILA I. GIVEN

Microbiology applied to nursing; a combined text book and laboratory guide. 314 illustrations and 2 color plates. Fourth edition, revised. Philadelphia: J. B. Lippincott Company, 1939. 653 p. illus. (part col.) 21 cm. \$3.00. 2821

Contents (abridged): Unit I, An introduction to the study of microbiology: The microscope. Cell study. How other organisms affect our welfare. Unit II, Some general types of microorganisms, their identifying characteristics and activities: Molds, including yeasts. Bacteria and Protozoa and related organisms. Cultivation of bacteria. Unit III, Control of microorganisms by direct attack and by measures affecting transfer agents: The inhibition and destruction of microorganisms. Bacterial relations of air, soil, and water; of foods, including milk. Disease organisms. Unit IV, Control of disease: Activities and effects of disease organisms. Body reactions in disease. Vaccines. Serums. Anaphylaxis. Tests. Unit V, Pathogenic organisms: Fungi or molds. Rickettsia organisms. Viruses. Worms. Arthropods. Unit VI, History of microbiology. Additional working data. Bibliography. Glossary. Index.

Note: The subject matter of this textbook for nurses has been rearranged in the fourth edition to conform to the unit plan of the *Curriculum guide for schools of nursing*. The introductory unit I may be omitted entirely or used only for review where students already possess a good background in biology. In this edition, new material is included on vaccines, immune serums and tests relating to disease and immunity. The book is designed to supply necessary information to the nurse for the care and protection of her patients, with sufficient additional material for the interpretation and application of bacteriologic principles. The short bibliography covers reference books published since 1918, and there are self-study tests at the end of each Unit.

COLIEN, FRANCIS EDWARD, AND ETHEL J. ODEGARD

Principles of microbiology. With 140 text illustrations and 18 color plates. St. Louis: The C. V. Mosby Company, 1941. 444 p. illus. (part col.) 22 cm. \$3.00. 2822

Contents (abridged): Part I, Introduction to the study of microorganisms: Historical survey of microbiology. General aspects of microorganisms. The microscope. The biology of microorganisms. Cultivation and methods of study. Part II, Destruction of microorganisms: Physical agencies. Chemical agencies. The application of sterilization and disinfection. Part III, Classification and related subjects. Microbiology and nursing: Microbic

variation. Bacteriophage. Classification. Part IV, Infection and immunity: Hypersensitiveness. Part V, Pathogenic microorganisms: Staphylococci. Streptococci. Pneumococci. Neisseria. Brucellosis. Plague. Tularemia. Glanders. The hemophilus group. The coliform group. The enteric group. Diphtheria. Tuberculosis. Leprosy. Rickettsiae. Spirochetes. Pathogenic fungi. Filtrable viruses. Pathogenic Protozoa. Part VI, Microbiology in relation to water and milk. Appendix. Glossary. Index.

Note: Intended as a textbook primarily for student and graduate nurses, this book deals with those aspects of microbiology which are essential in the field of nursing. Emphasis is laid on the importance of disease prevention and public health education, and the material is concerned mainly with what microorganisms do rather than what they are. The subject matter has been arranged largely in conformity to the recommendations of the Curriculum Committee on Education of the National League of Nursing Education, and provides enough material to cover the needs of students in the basic three-year nursing course as well as those of graduate nurses taking additional work in microbiology. Preparation of culture media, laboratory exercises, and references for further study are included.

COOPER, LENNA FRANCES, AND OTHERS

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Nutrition in health and disease, by Lenna F. Cooper, Edith M. Barber and Helen S. Mitchell. Ninth edition, revised. 99 illustrations and 7 colored plates. Philadelphia: J. B. Lippincott Company, 1943. 716 p. illus. (part col.) 21 cm. \$3.50. 2823

Contents: Principles of nutrition. Diet in disease. Feeding of mother and child. Nutrition and health service. Food selection and cookery. Cooking for the sick and the convalescent. Tabular material and special tests. Glossary. Index.

Note: The content of this textbook is arranged to cover certain courses consisting of one-hour class periods, laboratory periods, etc. Recipes, generally given for small quantities, are supplied for the latter. The material under each general heading is arranged to conform closely to *A curriculum guide for schools of nursing*. In this ninth edition new material has been added on vitamins and their physiologic significance; comments are made on the industrial nutrition problems and the nutrition implications of war-time food restrictions; results of recent research on improvement of cooking practices to avoid losses of nutrients are discussed; the tables of food values have been brought up to date, and in the table entitled "Proximate composition of foods including minerals and vitamins," new columns have been added to include niacin, pyridoxine, pantothenic acid, and biotin. The glossary is also new. The book is intended for use not only by the nurse but also by the home economics student and the housewife.

DARLINGTON, CHARLES GOODLIFE, AND GRACE G. APPLETON

Introduction to medical science on a basis of pathology, in conformity with recommendations of the Curriculum guide for schools of nursing. 170 illustrations and 4 colored plates. Philadelphia: J. B. Lippincott Company, 1942. 446 p. illus. (part col.) 21 cm. \$3.00. 2823a

Contents (abridged): Part I, Introduction to medical science: Development. Causes of disease. Manifestations. Diagnosis. Therapies. Control and prevention. Part II, Pathology of disease according to systems of the body: Respiratory system. Circulatory. Alimentary. Urinary. Integumentary, and breast. Allergy. Endocrine system. Vitamins and minerals. Nervous system. Musculoskeletal. Reproductive (female). Specific infectious diseases. Animal parasites. Part III, Clinical laboratory procedures, etc.: Blood. Urine. Miscellaneous. Tissue examinations: biopsies; autopsies. Records. References. Index.

Note: This textbook for nurses is designed to furnish a connecting link between the studies on basic sciences given in the first term and the clinical courses in medical and surgical nursing which follow. The special sections in Part Three are intended for reference use, in connection with study of the diseases in the various organs and systems, and later.

EMERSON, CHARLES PHILLIPS, JR.

Essentials of medicine. Fourteenth edition thoroughly revised and reedited by Charles

Phillips Emerson, Jr. and Jane Elizabeth Taylor. 194 illustrations and one colored plate. Philadelphia: J. B. Lippincott Company, 1940. 892 p. illus. (part col.) 21 cm. \$3.25. 2824

Contents (abridged): Introduction to nursing care: survey of nursing sciences; biologic analysis and synthesis; infection and immunity; observation of patient. Diseases of the organs of respiration. Of circulation. Alimentary system. Urinary tract. Integumentary system. Allergic conditions. Endocrine glands and metabolism. Nervous system. Musculoskeletal system. Reproductive system. Communicable diseases. Psychoneurotic reactions. Index.

Note: This book is intended for the medical student and the nurse and was written because the author felt, from experience gained in teaching both, that they need to learn the essential characteristics of a disease before proceeding to a more profound study of it. This text is designed to give the reader a clear if limited idea of the subject matter, to be used as a basis for further work. In this edition special attention has been paid to enhancing the usefulness of the book in the field of nursing education. Many changes have been made in order to conform to recent views regarding classifications, concepts, and modes of therapy. New therapeutic agents and devices have been described. Discussions concerning actual nursing technique, both in the hospital and in the home, have been made more precise and detailed, and whenever possible the physiologic justification for each type of therapy has been presented.

FADDIS, MARGENE O., AND HERSCHEL E. GRIME

The mathematics of solutions and dosage including simple arithmetic. Second edition. Philadelphia: J. B. Lippincott Company, 1944. 133 p. illus. 23 cm. Paper, \$1.00. 2825

Contents: Part I, Simple arithmetic: Why the nurse must know simple mathematics. Review test in arithmetic. Fractions. Decimal fractions. Ratio and proportion. Percentage. Changing from one unit of measure to another. Answers to part one. Part II, Making solutions, computing dosages, and pouring medications: Introduction. The solving of problems by ratio and proportion. Making solutions and preparing dosages. Pouring medications. A list of common abbreviations. Answers to part two.

Note: This booklet is intended for the use of students who have just entered a school of nursing or are about to do so. The first part presents the fundamentals of simple arithmetic as a basis for later nursing courses, while the material in Part II is designed to help the student gain skill in these calculations and become familiar with the interchangeable use of the apothecaries system and metric system. A new feature of the second edition is a summarizing page, with examples, of all types of problems, intended for the clarification of the formulas and their application. An additional laboratory exercise has been included and some formulas have been restated.

FADDIS, MARGENE O., AND JOSEPH M. HAYMAN, JR.

Textbook of pharmacology for nurses. 41 illustrations. Second edition, completely reset. Philadelphia: J. B. Lippincott Company, 1943. 433 p. illus. (part col.) 22 cm. \$3.00. 2826

Contents (abridged): Unit I, Orientation to the study of pharmacology and therapeutics: Introduction. Making solutions, computing dosages, and pouring medications. Administration of drugs. What the nurse should know about drugs, about poisoning. Unit II, Drugs used for their local effects. Unit III, For their effects upon the nervous system. Unit IV, Upon the respiratory tract. Unit V, Upon the circulation. Unit VI, Drugs which affect the gastro-intestinal tract. Unit VII, The reproductive system and the urinary tract. Unit VIII, Preparations used in certain diseases: Special drugs. Hormones. Vitamins. Anthelmintics. Sera and vaccines. Unit IX, Protection of the public in its use of drugs and cosmetics. Index.

Note: This textbook, which is intended for use in nurses' training courses, is planned to aid in preparing the nurse to assume her responsibilities in the administration of drugs and the intelligent observation of the patients who receive them. In this second edition the subject matter has been brought into accord with U.S. Pharmacopoeia XII, National Formulary VII, and New and Nonofficial Remedies, 1942. The sections on sulfonamides and vitamins have been entirely rewritten, and numerous additions and changes of a less extensive nature have been made.

The series of objective-type tests following each unit, with answers in the back of the book, has been retained as having practical value.

FRANCIS, CHARLOTTE ANNE, AND EDNA C. MORSE

Fundamentals of chemistry and applications chosen from inorganic, organic, and biochemistry, with applications in everyday concerns and in the applied sciences, including physiology, cookery, bacteriology, and materia medica. Second edition. New York: The Macmillan Company, 1943. 537 p. illus. 22 cm. \$3.50. 2826a

Contents: Substances and how they are recognized—mixtures. Physical and chemical change. Simple substances—compounds—elements. Oxygen the element—oxygen the substance. Catalytic agents. Burning or combustion. Chemical changes may involve energy transformations. Chemical measurements and related beliefs. Shorthand for chemical measurements. Bases, acids, and salts—radicals. Valence. With the atoms of various elements. A study of water. Acids, bases, salts—their reactions and applications. Solutions; colloidal solutions—emulsions. Acids, bases, salts, as electrolytes—ionization. Weak electrolytes—equilibrium—water as an electrolyte. Oxidation-reduction. Introduction to organic chemistry. Hydrocarbons and halogen derivatives. Alcohols. Aldehydes and ketones. Organic acids—organic salts—esters. Carbohydrates. Fats and related substances. Cyclic compounds and derivatives. Proteins. Chemistry of digestion. Function and fate of glucose, fats and proteins in the body. Important physiological functionings of salts and their ions. Index.

Note: Designed especially for schools of nursing and other schools offering single courses of a year or a half-year encompassing inorganic, organic, and biochemistry, this volume includes those portions of chemistry needed for the better understanding and application of the applied sciences and arts of nurse training. This second edition has been revised to include recent developments, reflect the newest concepts, and to facilitate its use in short courses of 45 and 60 hours. A section on chemotherapy has been added, and the chapter on cyclics has been rewritten to include new compounds and emphasize the relationship of chemical structure and therapeutic action. Questions are included at the end of chapters.

GILBERT, ALBERT JOSEPH, AND SELMA MOODY

Essentials of pharmacology and materia medica for nurses. Second edition. St. Louis, Mo.: The C. V. Mosby Company, 1944. 290 p. illus. (part col.) 22 cm. \$2.50. 2826b

Contents: Introduction. Drugs and solutions. Posology. Drugs having local action. Drugs acting on the nervous system. Drugs acting on the autonomous nervous system. Drugs which act on the circulation. Drugs which act on the blood. Drugs acting on the respiration. Drugs acting on the digestive system. Drugs which act on the urinary tract. Drugs acting on the uterus. Specifics. Hormones. Vitamins. Serums and vaccines. Toxicology. Prescription reading. Appendix.

Note: Each important drug recognized by the United States Pharmacopoeia and other authorities is discussed in regard to preparation, dosage, administration, action and uses, and untoward effects. The second edition adds the new drugs, revises text to conform with new editions of the standard works on pharmacopoeia (National Formulary, etc.), and includes new chapters on prescription reading and toxicology (with a discussion of war gases). The book is written for nurses and for others interested in a compact summary and review of the subject.

GOOSTRAY, STELLA, AND WALTER G. KARR

A textbook of chemistry. Fifth edition. New York: Macmillan Company, 1940. 384 p. illus. (part col.) 21 cm. \$3.00. 2827

Contents: Physical and chemical changes. Elements. Compounds. Atomic and molecular weights—the chemical equation. Types of chemical change—energy changes. The kinetic molecular hypothesis—the gas laws. Oxygen. Oxidation and reduction—oxidizing and reducing agents. Water. Solutions and colloidal dispersions. Acids. Bases. Salts. Electrolysis and ionization. The halogens—a chemical family. Carbon and its oxides. Organic chemistry: Hydrocarbons and alcohols. Other aliphatic

compounds. Aromatic compounds. Proteins. Carbohydrates. Fats. Food and nutrition. Digestion. Metabolism. The chemistry of tissues and glands. The inorganic salts of the body. The chemistry of the blood in health and disease. The excretions of the body. Bibliography. Suggested units of study. Index. Laboratory manual. Appendix: Removal of stains—table of elements.

Note: A text designed particularly for students of nursing. It includes the fundamentals of inorganic chemistry of practical use in the nursing field, selected phases of organic chemistry, and such physiological chemistry as is needed to afford a basis for the intelligent understanding of the physiology of the human body. Each chapter includes a brief summary, a list of exercises, and suggestions for supplementary reading. A 64-page laboratory manual is included. The fifth edition represents a rearrangement of chapters together with a new table of data, illustrations, and diagrams.

GREISHEIMER, ESTHER MAUD

Physiology and anatomy. 474 illustrations of which 52 are in color. Fourth edition, revised and reset. Philadelphia: J. B. Lippincott Company, 1940. 822 p. illus. (part col.) 21 cm. \$3.50. 2828

Contents: Part I, The body as an integrated whole: Introduction to anatomy. Introduction to physiology. Part II, The erect and moving body: The skeletal system. Physiology of the muscular system. Anatomy of the muscular system. Part III, Integration and control of the body by the nervous system: Anatomy of the nervous system. Physiology of the nervous system. The autonomic division of the nervous system. Anatomy and physiology of the senses. Part IV, Maintaining the metabolism of the body: Blood, tissue fluid and lymph. Anatomy of the circulatory system. Physiology of the circulatory system. Anatomy of the respiratory system. Physiology of the respiratory system. Anatomy of the digestive system. Physiology of the digestive system. Anatomy of the excretory system. Physiology of the excretory system and water balance. The regulation of the body temperature. Anatomy and physiology of the glands of internal secretion. Part V, The reproductive system: Anatomy and physiology of the reproductive system. Reference books. Glossary. Index.

Note: This book, now appearing in its fourth edition, is intended primarily for students of nursing. In its revised form the subject matter is divided into teaching units and follows closely the Curriculum Guide for Schools of Nursing. The structure and functioning of the human body are thus presented in a systematic and closely integrated manner. Many changes have been made in this edition. Illustrations have been simplified by removal of superfluous labels and in some cases by addition of color. Embryology and the reproductive system are combined. Recent information has been incorporated in the chapters on the skin, the skeletal and muscular systems, the blood and circulation, the anatomy of the lymphatic system, respiration, the digestive system, vitamins, the physiology of excretion, internal secretions, the reproductive system. The text is well illustrated.

HARRIMAN, PHILIP LAWRENCE, AND OTHERS

Psychology in nursing practice, by Philip Lawrence Harriman, Lela L. Greenwood and Charles E. Skinner. New York: The Macmillan Company, 1942. 483 p. illus. 22 cm. \$3.25. 2829

Contents: Introduction. The behaving organism. The muscles and sense organs. The neuro-endocrine systems. Motivation. Emotion. The mental processes. The learning process. Mental and educational abilities—their nature and measurement. The atypical and the socially maladjusted. The psychology of mental deficiency and mental disorder. Personality and its development. Mental hygiene. Psychology of the patient. Psychology and the art of nursing. Appendices: Personality and professional fitness record. Suggested reference books for students of nursing. Index of subjects. Index of names.

Note: A text for undergraduate students of nursing and for the practicing nurse, this book endeavors to present the material and points of view that will serve the nurse as a person in her everyday living as well as in her profession. It aims to guide her into making harmonious adjustments to her associates, achieving prompt and satisfactory personal insights, and applying the principles of psychology in her nursing practice. The bibliography contains 142 additional references grouped according to subject matter.

JUNG, FREDERIC THEODORE, AND OTHERS

Anatomy and physiology, by Frederic Theo-

dore Jung, Anna Ruth Benjamin, and Elizabeth Carpenter Earle. Philadelphia: F. A. Davis Company, 1941. 666 p. illus. \$3.50. 2829a

Contents (abridged): An introduction to anatomy and physiology. The osseous system: the erect body. The muscular system: the moving body. The nervous system: integration and control of the body. The circulatory system: maintenance of cellular metabolism. The respiratory system: the air line of the body. The endocrine system: the governor and regulator of the body. The integumentary system: the covering of the body. The alimentary system: maintenance of nutritional needs of the body. The excretory system: waste disposal of the body. Sensory organs: guardians of the body. The reproductive system: perpetuation of the species. Conclusion. Appendix. Index.

Note: This textbook of elementary human anatomy and physiology is designed mainly for student nurses. The book limits itself to the treatment of topics which the student nurse can apply directly or indirectly in her professional and personal life. The material on the muscles, for example, has been prepared in a general way, giving only those details of the specific muscles which are involved in nursing practice and omitting the details of individual muscles in areas which are considered of lesser importance to the student nurse. The authors assume that the student nurse will consult larger textbooks of anatomy and an exhaustive anatomical atlas to supplement the summary contained in the present text. The same publisher offers *Laboratory manual in anatomy and physiology*, by E. C. Earle, 1941, 151 p., \$1.25, which is designed for use with this text.

KARNOSH, LOUIS JOSEPH, AND OTHERS

Psychiatry for nurses, by Louis J. Karnosh and Edith B. Gage, in collaboration with Dorothy Mereness. Second edition. St. Louis: The C. V. Mosby Company, 1944. 339 p. illus. 22 cm. \$2.75. 2830

Contents (abridged): Historical review. Heredity and mental disease. Structure of personality. Defense mechanisms. Causes and classification of mental diseases. Examination. Management and observation. Affective reaction types: manic-depressive psychoses; involutional psychoses. Schizophrenic reaction types. Paranoid. Reaction types with somatic disease: symptomatic psychoses—endocrine disease. Delirious reaction types: psychoses due to alcohol—to drugs. Organic reaction types: syphilis of central nervous system—traumatic psychoses—brain tumor and other brain diseases—cerebral arteriosclerosis—senile psychoses. Epilepsy. Mental deficiency. Psychopathic personality. Psychoneuroses. Therapy: physical—occupational and recreational—shock. Psychiatry and the law. Mental hygiene. Glossary. Index.

Note: Writing with an eye to the needs of the nursing school, the authors have endeavored to stress the basic elements of psychiatry in as concrete and practical a manner as possible. Emphasis on the various mental ailments presented is in direct proportion to their frequency and importance from the standpoint of therapy and nursing care, and case reports are used as illustrative material. Much revision has been done in this second edition in order to incorporate in it the new developments in this field. Among others, the following items may be mentioned: the application of electroencephalography to psychiatric study; the Rorschach and other personality tests; the new psychosomatic medicine; electric shock treatment, and new agents in the therapy of epilepsy.

KILDUFFE, ROBERT ANTHONY

Bacteriology, pathology, and applied immunology for nurses. Second revised edition. New York: The Bruce Publishing Company, 1939. 377 p. illus. (part col.) 20 cm. \$3.00. 2831

Contents: Part I, Bacteriology. Part II, General pathology. Part III, Special pathology. Part IV, Applied immunology. Index.

Note: A thorough text limited to the needs of student and graduate nurses. Topics dealt with include types of important pathogenic bacteria, resistance to infection, and immunity; causes and classes of disease, prevention, and prophylaxis. There are laboratory exercises.

KIMBER, DIANA CLIFFORD, AND OTHERS

Textbook of anatomy and physiology, by Diana Clifford Kimber, Carolyn E. Gray, and

Caroline E. Stackpole. Eleventh edition. New York: The Macmillan Company, 1942. 769 p. illus. (part col.) 22 cm. \$3.50. 2832

Contents (abridged): Unit I, The body as a whole—structural and functional relationships and organization: Anatomy, physiology, hygiene. Cells, tissues, organs, systems. The cell as an emulsion of colloid particles, etc. Connective tissues. Unit II, The structural and functional relationships for correlation and coordination of external activities: Skeleton. Joints. Muscular tissue. Nervous system, neurons. Spinal cord and spinal nerves, etc. Unit III, The structural and functional relationships for correlation and coordination of internal activities—metabolism: Epithelial tissue. The blood. The blood vascular system. Divisions of vascular system. Physiology of general circulation. Tissue fluid and its functions, lymph and the vascular system. Glands, secretions, enzymes, etc. Respiratory system. Anatomy and histology of digestive system. Food, vitamins, physiology of digestion. Absorption, metabolism of carbohydrates, fats, and proteins, etc. Urinary system. Skin and appendages. Unit IV, Adaptive response and the special senses: Sense organs. Unit V, The structural and functional relationships for human reproduction and development: Reproduction and embryology. Reference books. Glossary. Index.

Note: This text is designed especially for schools of nursing. In the new edition the sections on physiology are more numerous, more extended, and easier to find than in previous editions. This is particularly true of the section dealing with the muscles of the circulatory system. The chapters on embryology and the reproductive organs have been combined; an entirely new chapter on the physiology of the cell has been added, and the sections dealing with the mechanics of digestion and absorption, circulation, lymph, respiration, and the visceral nervous system have been enlarged. In arranging the material inside the chapters, the authors have followed the general sequence of anatomy, histology, and physiology, but they have not hesitated to rearrange their material if a change made for greater clarity. Their expressed aim is to promote a real understanding of both anatomy and physiology by a study of each in terms of the other. Companion volumes are C. E. Stackpole and L. C. Leavell, *Laboratory manual in anatomy and physiology*, New York: The Macmillan Company, 1941, 214 p., \$1.50; and C. E. Gray and C. E. Stackpole *Study-guide textbook in anatomy and physiology*, fifth edition, New York: The Macmillan Company, 1943, 106 p., \$1.15.

McGUIGAN, HUGH ALISTER, AND ELSIE E. KRUG

An introduction to materia medica and pharmacology. Third edition. With 46 text illustrations and 37 color plates. St. Louis, Mo.: The C. V. Mosby Company, 1942. 779 p. illus. (part col.) 22 cm. \$3.50. 2832a

Contents (abridged): Opportunities for learning pharmacology of the hospital ward, by Elsie E. Krug. Introduction. Pharmacy. Arithmetic review. Weights and measures. The administration of medicines. The action of drugs. Dosage. Common poisons and antidotes. Common active principles of plant drugs. Astringents. Antiseptics and disinfectants. Pharmacology as related to the nervous system. Drugs which affect the autonomic nervous system. Pharmacology as related to the digestive tract. Pharmacology as related to the circulatory system, the respiratory system, the skin and mucous membranes, the urinary system, the liver, the eye, the reproductive system, and to metabolism and nutrition. Chemotherapy of specific diseases. Serums and vaccines. History of materia medica. Drug legislation. General references. Glossary. Index.

Note: Based on the fourth edition of Brodie's *Materia medica for nurses*, St. Louis, 1933, this textbook for the student nurse presents the study of drugs approached from the animal experimentation standpoint. Emphasis is placed on the nurse's work of administering drugs to patients and the use of various solutions and antiseptics in hospital routines. The nurse is shown what effect certain drugs have on the human physiology, why they are administered, and their correct dosage. The third edition omits some chapters on the chemistry of compounds given in earlier editions and includes new drugs and new forms of chemotherapy.

MITCHELL, KATHERINE

Food in health and disease; preparation, physiological action and therapeutic value. Third edition. Philadelphia: F. A. Davis Company, 1942. 528 p. illus. 22 cm. \$3.50. 2833

Contents: Part I, Food and nutrition: Food elements and their uses. Further food elements. Normal diets. Part II, Diet in disease: Diets which are modifications in consistency. Diets which are modifications in energy value. Diets in which there is modification of one or more constituents. Part III, Laboratory outlines. Part IV, Outline of the course in dietetics for student nurses. Part V, Appendix. Index.

Note: The subject matter is based on the lectures and class-work in use at Michael Reese Hospital, Chicago, and is intended for the teaching of nutrition and diet in disease to student nurses, student dietitians, and patients. The importance of the normal diet as part of the general health program, and as the basis of diet in disease, is stressed throughout. Additional emphasis is placed upon the administrative work and supervision of the general diet of patients by the young nurse and dietitian. The third edition incorporates new material on the vitamins and stresses the importance of food habits as part of the war effort. There are new tables, recipes, and menus included.

MORSE, MARY ELIZABETH, AND MARTIN FROBISHER, JR.

Microbiology for nurses. Sixth edition, entirely reset. Philadelphia: W. B. Saunders Company, 1941. 466 p. illus. (part col.) 20 cm. \$2.75. 2834

Contents: Unit I, General principles: General description of bacteria. Relation of bacteria to their environment. Laboratory study of bacteria. Class Schizomycetes as a whole. Distribution and activities of nonpathogenic bacteria. Yeasts and molds. Unit II, Asepsis, disinfection and sanitation: Disinfection and sterilization. The sterile field-asepsis. Disease transmission and ward sanitation. Food sanitation. Unit III, Infection, immunity and allergy: Infection and resistance. Immunity. Hypersensitivity. Unit IV, Special bacteriology: Pathogenic gram-positive cocci. Pathogenic gram-negative cocci (Neisseria). Gram-negative rods: enteric group. *Eberthella typhosa*. *Shigella dysenteriae*. *Vibrio comma*. *Escherichia coli*. Nursing and other precautions in enteric infections. Gram-negative rods: genus *Hemophilus* and genus *Brucella*. Gram-positive rods. Order Actinomycetales. *Corynebacterium diphtheriae* and diphtheria. *Mycobacterium tuberculosis*. Prevention of tuberculosis. Order Spirochaetales. Public health aspects of syphilis and gonorrhea. Ultramicroscopic viruses. Insect-borne diseases. Pathogenic Protozoa. Communicable diseases as public health and social problems. Index.

Note: This is a text designed for use in courses in microbiology as given to students of nursing in the United States. It contains 186 illustrations, some in color. There is an extensive appendix containing sections on collection of specimens for bacteriological examination, body fluids and discharges commonly carrying infectious organisms, and important formines likely to be infected; experiments and demonstrations; glossary and condensed chart of common pathogenic organisms. The section on exercises is flexibly arranged so that the instructor can modify these to meet classroom needs. For the sixth edition, revisions and additions were made throughout and obsolete material deleted. A number of new illustrations were included. The sections on streptococci, viruses and the hemophilic group were rewritten. The sections on disinfection, sterilization and sanitation were completely reconstructed and enlarged considerably. The laboratory exercises were presented in a new form. New material was added to the condensed tables in the appendix. Specific details were inserted throughout on nursing care or nursing precautions in each disease, and the role of the nurse in the prevention of disease emphasized. Earlier editions were published under the title *Bacteriology for nurses*.

MULLER, GULLI CHARLOTTE (LINDH), AND DOROTHY E. DAWES

Introduction to medical science. Philadelphia: W. B. Saunders Company, 1943. 454 p. illus. (part col.) 20 cm. \$3.00. 2835

Contents (abridged): Unit I, Development of medical sciences: Historical review. Unit II, Causes of disease: General classification and definition of terms. Endogenous and exogenous causes of disease. Unit III, How disease manifests itself in the body: Changes in the body produced by injury. Inflammation, a reaction of the body to injury. Circulatory disturbances. Tumors. Examination of tissues. Unit IV, How the doctor makes the diagnosis: Examination of the patient. Urine. Blood. Blood chemistry. Examination of other body fluids. Gastro-intestinal studies and tests. Sputum, smears and cultures. Special examinations.

Collection and handling of specimens. Unit v, How disease is treated: Forms of therapy. Physiotherapy. Unit vi, How disease is controlled and prevented: Development of health control. Federal and state health programs. Health of the community. Sanitary conditions in the home. Dairy industry and its control. Other food products. Water supply. Disposal of sewage and refuse. Industrial sanitation. Schools and summer camps. Health control in disaster situations. Index.

Note: The purpose of this book is to provide an overview of medical science for the beginner. Its chief use in the United States is as a text for student nurses as they start their clinical work on the wards. Emphasis is placed on fundamental principles which will enable her to adjust to the needs of the patient, physician, and others and to apply this knowledge to specific diseases. There is much information which would be of value to the graduate nurse as a source of reference, whether in hospital, home, or public health field. It is useful for workers in allied fields of medicine, such as laboratory technicians, physical and occupational therapists, social workers and other persons interested in a survey of modern medical science. Of special interest are data pertaining to modern diagnostic and therapeutic procedures. At the end of each chapter is a review to assist the student in studying the subject matter. To aid her further in understanding the relationship of scientific methods in clinical medicine and nursing, practical applications are included with each chapter. There are chapter bibliographies. Clinics are suggested to focus the attention of students on special topics. The text presents the point of view of both physician and nurse. It contains 98 carefully selected illustrations.

MUSE, MAUDE BLANCHE

Pharmacology and therapeutics. Fourth edition, revised. Philadelphia: W. B. Saunders Company, 1944. 633 p. illus. (part col.) 20 cm. \$3.00. 2835a

Contents: Part I, Drugs having local action: Remedies used on the skin, the mucous membranes and wounds. Tissue antiseptics and arithmetic of solutions. Part II, Drugs having systemic actions: Basic facts and principles in the study of systemic drugs. Drugs which stimulate the cerebrospinal nervous system. The cerebrospinal depressants. Drugs affecting the autonomic nervous system. Drugs acting directly upon muscle fibers. Drugs affecting the circulatory system. Drugs affecting the respiratory system. Drugs acting upon the gastrointestinal tract. Drugs affecting the genitourinary system. Chemotherapy of infectious diseases. Part III, Therapeutic agencies other than drugs: The biologicals, glandular therapy and vitamin therapy. Introduction to physical therapy and mental therapy. Part IV, Appendix. Definitions. The story of drugs. Index.

Note: This is an elementary text and as such is used in teaching the subject to nurses in the United States. In it an attempt is made to minimize rote memorization, and to help the student reason out the effects of drugs from their site of action and from a knowledge of physiologic functioning. To this end, drawings and diagrams of the central and autonomic systems are included, as well as many other figures. At the ends of chapters are review questions, pharmacotherapeutic principles, student activities, practice problems, and bibliographies. The author gives the source of each drug, its therapeutic uses, its characteristics, and the range of dosage. The chemical derivations and interrelationships are presented for the barbiturates and some of the other commonly used products. In the fourth edition the text was reset, having undergone a thorough revision based on the latest editions of the *United States Pharmacopoeia*, *United States formulary* and *New and non-official remedies*. Thirty new topics were included for discussion and many illustrations added. The bibliographies, problems, and periodical references were revised and expanded. Exercises for self-evaluation were added. New paragraphs were included on nursing care applied to the administration of a drug. Included are new discussions of chemotherapy, the sulfa drugs and penicillin as related to modern therapeutics. Earlier editions were entitled: *Materia medica, pharmacology and therapeutics*.

NELSON, MRS. KATHRYN LUELLA (JENSEN)

Massage in nursing care. Second edition of Fundamentals of massage. New York: The Macmillan Company, 1941. 152 p. illus. 19 cm. \$2.00. 2836

Contents: The history of massage. Nomenclature and rules to be followed in massage. General physiological effects of massage. Massage procedures. General application of massage. Massage in conditions involving the skeleto-muscular and circulatory sys-

tems. Massage and exercise in conditions affecting the nervous and gastrointestinal systems.

Note: This is written primarily for undergraduate students of nursing to give them the underlying fundamentals necessary for the nurse to know. This edition places more emphasis on the importance of understanding the nervous system in achieving good results in massage, also on the application of massage in conditions that are a routine part of nursing care. Each chapter is prefaced by an outline of its contents, and is followed by questions, exercises, and list of references.

NOYES, ARTHUR PERCY, AND EDITH M. HAYDON

A textbook of psychiatry. Third edition. New York: The Macmillan Company, 1940. 315 p. 22 cm. \$2.50. 2836a

Contents: Preface. Psychiatry and psychiatric nursing. Mind, its development and purpose. Motivating sources of behavior. Conscious and unconscious mental processes. Mental mechanisms and motives. Personality types. Causes and nature of mental disorders. Symptoms of mental disease. Classification of mental disorders. General paresis and cerebral syphilis. Psychoses with epidemic encephalitis. Psychoses with other infectious diseases. Alcoholic psychoses. Psychoses due to drugs or other exogenous toxins. Traumatic psychoses. Psychoses due to circulatory disturbances. Psychoses with convulsive disorders (epilepsy). Senile psychoses. Involutional psychoses. Psychoses with metabolic and somatic diseases. Psychoses with brain tumor. Psychoses with organic changes of nervous system. Psychoneuroses (minor psychoses). Manic-depressive psychoses. Dementia praecox (schizophrenia). Paranoia and paranoid conditions. Psychopathic personalities. Mental deficiency. Psychiatric nursing. Psychoanalysis. Mental hygiene. The nurse and her profession. History of psychiatry and of psychiatric nursing. Glossary. Index.

Note: A textbook for nurses. Included in the revisions, but not mentioned in the contents, is a section on shock therapy. The historical chapter is also new in this edition.

O'HARA, FRANK JOSEPH

Psychology and the nurse. Second edition, revised. Philadelphia: W. B. Saunders Company, 1943. 258 p. illus. 20 cm. \$1.75. 2837

Contents (abridged): Psychology. The mind and the reacting mechanism. Effect of sensation on the mind. Imagination and dreams. Memory. Feelings and emotions. Traits and tendencies. Conflicts and adjustments. The art of thinking. Attention and the laws of learning. Intelligence tests and measurements. Habit formation. Temperament, personality and character. Mental disorders. Glossary. Index.

Note: This is an elementary text and is used principally in teaching the subject to students in United States schools of nursing. In it the author develops principles on which the science is founded, without introducing controversies to confuse the student. On the basis of these principles he shows how the science may be applied in the nursing education curriculum. There are summaries, questions for review, and sources and references at the end of each chapter. This text unites modern experimental psychology of both the objective and introspective schools with the fundamental scholastic idea that the soul is the principal and substantial form of human activity. In the second edition alterations were made in the chapters dealing with sensation, perception, the art of thinking, and intelligence testing, to make the subject more easily understood and retained by the student nurse. The chapter on mental disorders was rearranged and enlarged to meet the needs of schools combining psychology and psychiatry under the accelerated program. This chapter serves as a summary of the material necessary for such a course. Terminology and content were revised. Abstract ideas were clarified by the application of practical examples to nursing situations. Review questions and references were revised and increased in number.

PROUDFIT, MISS FAIRFAX THROCKMORTON

Nutrition and diet therapy, a textbook of dietetics. Eighth edition. New York: The Macmillan Company, 1942. 1069 p. illus. (part col.) 22 cm. \$3.50. 2838

Contents (abridged): Normal nutrition. Feeding in obstetrics, lactation, and children of different ages. Normal nutrition—practical application. Laboratory lessons. Diet therapy. Recipes. Appendix: Food values. Proximate composition of American food materials. Percentages of certain of the mineral elements in the edible portions of foods. Table showing potassium, sodium and

water content of foods. Personal health standard and scale. Examination questions. A workable course in dietetics and diet therapy. General reference and reading list. Index.

Note: Especially designed for use in schools of nursing. This edition has a new section on feeding in pregnancy and lactation and feeding of children that may be used separately. Recipes now appear in a separate section. Many calculated recipes have been omitted in order that they may be calculated by the student from the figures recommended by the government. There is a bibliography with each chapter, as well as a general list of references at the end of the book.

RABIN, COLEMAN BERLEY

A textbook of pathology for nurses. Second edition, revised. Philadelphia: W. B. Saunders Company, 1939. 260 p. illus. 20 cm. \$1.75. 2839

Contents (abridged): Part I, General pathology: Introduction. Definition of terms. Method of study. The role of the cell in the study of pathology. The nature and causation of disease. Degeneration and necrosis of the tissues. Degenerative diseases of the liver. Degenerative diseases of the arteries—arteriosclerosis. Inflammation. Inflammation of the mucous membranes. Inflammation of the serous membranes. Inflammation of the endocardium. Inflammation of the lung. Inflammation of the kidney—nephritis. Typhoid fever. Tuberculosis. Syphilis. General infections. Ulcers. Neoplasms. Obstruction of the hollow organs. Obstruction to the passage of urine. Obstruction of the biliary tract. Obstruction of the gastro-intestinal tract. Obstruction to the general blood circulation which results in circulatory failure. Part II, Clinical pathology: Examination of the secretions of the body. Examination of the excretions of the body. Examination of the body fluids. Examination of transudates and exudates. Index.

Note: This is an elementary text written for the purpose of instructing students in United States schools of nursing. The author presents the facts of disease not merely to be memorized—he has applied these facts to the living patient. New terms are explained as they are used. There are 68 figures. The chapter on ulcers was added in the second edition. The chapter on neoplasms was enlarged to include the more unusual forms, because these are occasionally encountered and require some exposition since their nomenclature is often obscure and uninformative. New discussions were included in the section on clinical pathology, on the significance of the sedimentation time, immature leukocytes in the differential blood count, and on agranulocytosis. A table was added of normal values of the chemical constituents of the blood and the pathologic significance of changes in these values. There were minor revisions throughout.

RICE, THURMAN BROOKS, AND FERN COY

Microbiology and pathology. New York: The Macmillan Company, 1942. 397 p. illus. 21 cm. \$3.00. 2840

Contents: Introduction to the study of disease. The cell as the basis of disease. Congenital abnormalities and their causes. Abnormal cell growth—tumors, cancers, etc. Progressive and retrogressive changes in tissues. Inflammation. The circulatory system—the blood. Circulatory disturbances. Disturbances of the body fluids. The relation of pathology to diagnosis. Introduction to study of bacteria. The bacteriology of everyday life. The nature and properties of bacteria. Destruction of bacteria: physical means. Destruction of bacteria: chemical disinfectants. Practical disinfection. How bacteria cause disease. How the body resists disease. Principles of specific immunization and treatment. Pus-producing cocci: staphylococci; streptococci; pneumococci; meningococci; gonococci. The colon typhoid dysentery group. Diphtheria bacillus. Tubercle bacillus. Tetanus bacillus and related organisms. Miscellaneous bacteria. Filtrable viruses. Higher bacteria and pathogenic fungi. Animal parasites. Bacteriology of water supply. Bacteriology of food. Bacteriology of milk. Disposal of sewage and garbage. Insects and bacteria. Bacteriology of personal hygiene. Index.

Note: An elementary text for student nurses combining bacteriology and pathology to give a broad picture of disease and its causes. It is designed to give the student enough knowledge of both sciences to enable her to become proficient in disinfection and sterilization, in asepsis, isolation, and safe nursing procedures; in the collecting and handling of specimens, and in the teaching of the principles of hygiene, sanitation, and disease prevention.

RICHARDS, ESTHER LORING

Introduction to psychobiology and psychiatry, a textbook for nurses. St. Louis: The C. V.

Mosby Company, 1941. 357 p. illus. 22 cm. \$2.50. 2840a

Contents: Part I, Psychobiology, a study of functioning in normal behavior: Historical background of psychobiology. Psychobiology. Personality study material. Part II, Psychiatry or psychopathology: Historical setting of behavior abnormalities. Fact-gathering in psychiatry. Essential reaction types of psychopathology (pathergasias). Major reaction types (holergasias). Toxic, hallucinatory disorientative reactions (delirium). Affect disorders. Manic-depressive. Thymergasia (thymos mood). Disorders of thinking, para (twist) reactions. Index.

Note: This text is directed towards giving undergraduate nurses some idea of the need for understanding human behavior in its relationship to the practice of their profession. While no attempt is made to cover the province of psychiatric nursing, the book discusses and evaluates the biology, emotions, intellectual set-up, and life experiences of the individual as he works and functions in his job of living. Illustrated with numerous case histories and critical discussions of clinical data. References are given at the end of each chapter.

ROBINSON, EDWARD STEVENS, AND VIRGINIA KIRK

Introduction to psychology, with special applications to nursing and nursing problems. New York: The Macmillan Company, 1935. 368 p. illus. 22 cm. \$2.50. 2840b

Contents: The science of psychology. Human nature and the human body. Reflexes and habits. The formation of habits. The fixation and elimination of habits. The operation of habits. Perception and attention. The varieties of perception. Ideas and concepts. Memory. Imagination. Reasoning. Feeling. Personality. Abilities and their measurement. Index.

Note: A textbook designed to give a prospective nurse, with no training in psychology, some of the elements of the subject which will help her in solving the human problem with which she will be confronted in her professional work. Psychology is stressed as a way of the nurse's thinking about herself and her patients. Each chapter is provided with a summary, a list of problems, and references to suggested further reading. The text is based upon the senior author's *Practical psychology, human nature in everyday life*, New York, 1926.

ST. GEORGE, ARMIN VON

A textbook of pathology for use in schools of nursing. Second edition, revised. New York: The Macmillan Company, 1938. 238 p. illus. 19 cm. \$2.00. 2841

Contents: Introduction. Bacteria. The body fluids. Cell structure and metabolism. Inflammation. New growth of tissue and repair of injury. Division of life into periods in which the individual is most susceptible to certain types of disease. Diseases of the circulatory system; of the urinary system; of the liver and gall-bladder; of the gastro-intestinal tract; of the respiratory tract. Injuries produced by mechanical means; by chemicals, drugs and foods. Parasitic infections. Lesions produced by bacteria. Venereal diseases. Deficiency diseases. Diseases of the ductless glands; of the nervous system. Tumors. Application of pathology in clinical medicine. Aids to diagnosis. Methods for collecting and preserving specimens and the interpretation of results of pathological examinations. Index.

Note: A brief outline of the major pathologic processes designed to help the nurse understand the principal causes and nature of the commoner diseases, and the importance of diagnostic measures, particularly in relation to nursing. The nurse is taught to think in terms of cell-injury in order that she may observe and interpret symptoms and apply treatment intelligently.

SALSBUURY, CARMEN RUSSELL

Introduction to pathology. Second edition of Essentials of pathology. New York: The Macmillan Company, 1941. 439 p. illus. 22 cm. \$3.00. 2842

Contents: General introduction. Factors influencing disease. Disturbances of the circulation of the blood. Progressive and regressive tissue changes. Inflammation and repair. Tuberculosis. Syphilis. Tumors and cysts. The circulatory system. The respiratory system. The digestive system. The urinary system. The fe-

male reproductive system. The male reproductive system. Bones and joints. The central nervous system. The spleen. The lymphatic system. Conditions characterized by changes in the blood. Indications for and interpretation of certain of the more common laboratory procedures. Index.

Note: Designed particularly for use in schools of nursing, this work stresses the dependence of all disease conditions upon the primary principles of general pathology. The first eight chapters on general pathology and the concluding chapter on laboratory procedures cover pathology as outlined in the Curriculum guide of the National League of Nursing Education under "Introduction to medical science." The remaining eleven chapters serve as further introduction to medicine and surgery.

SINCLAIR, CHARLES GEORGE

Microbiology and pathology. With 102 illustrations. Sixth edition revised. Philadelphia: F. A. Davis Company, 1944. 396 p. illus. (part col.) 22 cm. \$3.25. 2843

Contents: Part I, Microbiology: Introduction and historical summary. General characteristics of microorganisms. Distribution of microorganisms. Activities of microorganisms. Methods of studying bacteria. Destruction of microorganisms. Infection and resistance. Pathogenic bacteria. The streptococci. Pneumococcus and the meningococcus. Colon-typoid group of bacilli. Bacilli of bacillary dysentery. Diphtheria bacillus. Acid-fast bacilli. Miscellaneous bacterial infections. Spore-forming bacilli. Spirochetes. Venereal diseases. Fungi (moulds and yeasts). Protozoa. Animal parasites. Virus diseases. Immunity. Part II: Laboratory exercises in microbiology. Part III, Elements of pathology: Nature and causes of disease. General pathology. Inflammation and repair. Illustrative examples of acute pathology. Illustrative examples of chronic pathology. Tumors. Applied pathology. Examination of the urine. Examination of the gastric contents. Feces examination. Hematology. Blood chemistry. Other laboratory examinations. Index.

Note: This introductory text for student nurses and medical attendants is based on lecture and laboratory-guide notes as revised from year to year in courses at the Army School of Nursing, and in similar classes in physiotherapy and occupational aids at Walter Reed General Hospital. The work presents an outline of the elements of neurobiology, a set of laboratory exercises arranged to fit with the corresponding chapters and an outline of the elements of pathology. The sixth edition contains new material on the colon-typoid-dysentery bacilli, plasma, pneumococcus, venereal diseases, the sulfonamides, penicillin, typing of streptococci, gas gangrene anaerobes, typhus, cholera, and many other additional subjects.

SMEETON, MARY ALICE

Practical microbiology. Fifth edition of "Bacteriology for nurses." New York: The Macmillan Company, 1939. 305 p. illus. 22 cm. \$3.00. 2844

Contents: Introduction to the study of micro-organisms. Inhibition and destruction of micro-organisms and how infection may be spread. Effects of the invasion of the body by micro-organisms. Characteristics of pathogenic micro-organisms and methods of control. Historical outline of microbiology. Appendix: Bacterial classification. Preparation of culture media. Index.

Note: A brief text designed particularly for students of nursing. This edition has been rearranged in accordance with the Curriculum Guide of the National League of Nursing Education. The scope has been increased to include microbial forms other than bacteria. It presents the members of the microscopic world as a group, in order to give the student a clear conception of their relationship and a better understanding of the whole. Greater emphasis is placed on underlying principles and practical applications in nursing procedures and on the disinfectants and their application in nursing procedures.

SOLOMON, CHARLES

Pharmacology, materia medica and therapeutics. Collaborator Hazel Houston. 91 illustrations, many in color. Fifth edition. Philadelphia: J. B. Lippincott Company, 1943. 823 p. illus. (part col.) 20 cm. \$3.25. 2844a

Contents (abridged): Part I, Introduction: An orientation to the study of pharmacology and therapeutics. Pharmacy (drugs and solutions). Part II, Pharmacology: Drugs having local action: those acting on the skin and mucous membranes; antiseptics and disinfectants. Drugs having systemic action: those acting on the

nervous system; those acting chiefly on the respiratory system; the circulatory system; the alimentary tract; the urinary tract; the reproductive system; affecting the temperature of the body; those used in the treatment of specific diseases. Part III, Toxicology. Part IV, Nonmedicinal therapeutics. Part V, Pharmacology and therapeutics in the specialties. Part VI, Treatment of emergencies. Glossary. General index. Index of symptoms and diseases.

Note: In this textbook for nurses the emphasis is on the practical. The authors remark that its keynote is the close relationship existing between pharmacology and clinical medicine. The administration of drugs, one of the important duties of the nurse, has received much consideration, and a section at the end of each chapter gives a summary, clinical correlation and practice, topics for class discussion and notebook exercises, projects for further study, and review questions. The material in this fifth edition conforms to the U.S. Pharmacopoeia XII and to the National Formulary VII. Latest contributions to the subjects of hormones, vitamins, chemotherapy, and blood substitutes have been included. Diagrams have been put in color to increase their usefulness as a visual aid in learning, and a few new diagrams and tables have been added. The bibliography has been brought up to date.

STERN, FRANCES

Applied dietetics; the planning and teaching of normal and therapeutic diets. Second edition. Baltimore: The Williams & Wilkins Company, 1943. 265 p. illus. 26 cm. \$4.00. 2845

Contents: Part I. Daily food requirements of the body. Construction of normal diet; of therapeutic diet. Environmental factors that influence effectiveness of diet. Education of the patient on normal diet; on therapeutic diet. II. Tables (57) to simplify computation of diets. III. Dietary outlines giving complete dietetic treatment for various diseases. IV. Typical diets and menus for various conditions.

Note: The author is chief of the Frances Stern Food Clinic of The Boston Dispensary, established in 1918 and subsequently named in her honor. This clinic is the first of its kind to undertake dietetic treatment of the ambulatory patient and to guide the fulfilling of the food prescription given by the physician. New material in this second edition includes new data on vitamins, quantitative estimates of their content in diets and in individual food items, in vitamin-enriched foods, etc.; tables giving values for various minerals in foods; new charts on diabetic diets, and charts showing the amount of each food constituent needed daily at different ages.

STEVENS, ARTHUR ALBERT, AND FLORENCE ANNA AMBLER (HAY)

A textbook of medical diseases for nurses, including nursing care. Fifth edition revised. Philadelphia: W. B. Saunders Company, 1943. 623 p. illus. 20 cm. \$2.75. 2846

Contents (abridged): Unit I, Causes of disease. Unit II, Respiratory system: Diseases of the nose, larynx, bronchi, lungs and pleura. Unit III, Circulatory system: Diseases of the heart, arteries and blood-forming organs. The anemias. Unit IV, Digestive system: Disorders of the gastric functions. Diseases of the mouth, tonsils, pharynx, esophagus, stomach, intestines, pancreas, liver and peritoneum. Unit V, Kidneys. Unit VI, Skin: Noninflammatory diseases of the sweat glands and the sebaceous glands. Hyperemic and inflammatory diseases of the skin. Atrophic and hypertrophic diseases. New growths and infectious granulomas. Superficial fungus diseases. Diseases caused by animal parasites. Neuroses. Unit VII, Allergic diseases. Unit VIII, Ductless glands and metabolism: Food deficiency. Unit IX, Nervous system: Brain, spinal cord and nerves. Psychoneuroses and neuroses. Peripheral nerves. Sunstroke and intoxications. Unit X, Muscles and joints. Unit XI, Communicable diseases. Measures and weights. Glossary. Index.

Note: This book is used in the United States both as a text for student nurses and as a review for the graduate nurse. In it the authors first take up each disease and present a simplified, easily comprehended description of pathology, etiology, symptoms, diagnosis, prognosis, and treatment. Then they describe each step in nursing care. A bibliography is included at the end of each main discussion. There are 95 illustrations. Changes were made in every section for the fifth edition and the book was reset in new type. Thirty-four new illustrations were added and the number of references was expanded. New discussions were introduced on pulmonary atelectasis, erythromelalgia, obesity, pseudoremia, menopause, anaphylaxis, serum sickness, osteomalacia,

tumors of bones, fragilitas ossium, the Kenney treatment, and equine and St. Louis types of epidemic encephalitis. Rewritten and expanded sections include anemias, chronic nephritis, true nephrosis, allergy, functional diseases of the ductless glands, vitamins and avitaminosis, oxygen therapy, laboratory tests in liver disease, and sulfa drugs.

STOKES, JOHN HINCHMAN

Dermatology and syphilology for nurses, including social hygiene. Third edition, revised. Philadelphia: W. B. Saunders Company, 1940. 365 p. illus. 20 cm. \$2.75. 4th, 1948 2847

Contents (abridged): Examination of the patient with a skin disease. Inflammation and infections. Eruptions due to animal parasites, drugs and self-inflicted injuries. Acne. Psoriasis. Pityriasis rosea. Lichen planus. Lupus erythematosus. Herpes. Pemphigus. Pellagra. Scleroderma. Dermatitis herpetiformis. Diseases of the hair and nails. Birth marks and warts. Granulomas. Ulcers. Lesions of mucous membranes and genitalia. Cancer of the skin. Cleansing. Baths. Wet dressings. Powders. Lotions. Ointments. Bandaging. Fixed dressings. Diet and constitutional measures. Actinotherapy. Nursing of severe dermatoses. Dermatology of pregnancy, infancy and childhood. Itching. Skin sensitization tests. Ivy poisoning. Primrose dermatitis. Gonorrhea. Syphilis: History. Cause. Infectiousness. Course. Diagnosis and diagnostic tests. Syphilis in marriage, the family and the child. Treatment. Social hygiene and the nurse. Individual attitude of mind. Changing viewpoint. Social and economic background. Organized venereal disease control and social hygiene movements. Contact tracing and case holding principles applied to venereal disease control. Normal ideals of sex life. Bibliography. Glossary. Index.

Note: This book is addressed to nurses: as students, practitioners, and women of intelligence and civic initiative. It is characterized by its practical application of each nursing procedure to the actual duties of the nurse in caring for patients with diseases of the skin. The nurse's important part in promoting social hygiene is explained. The chapter on contact-tracing and follow-up technique is applicable in public health nursing. Eighty figures provide assistance for study. The book was reset for the third edition. New discussions were included on urticaria, sulfa drugs, ring worm, Rocky Mountain spotted fever, decubital ulcers, lymphopathia venereum and new methods of treatment of syphilis and gonorrhea. The section on venereal disease control was expanded to include the widespread public health activity in the treatment and control of venereal disease.

SUTTON, DON CARLOS

Introduction to medicine. With introduction by Ada Belle McCleery. With 144 text illustrations and 14 color plates. St. Louis: The C. V. Mosby Company, 1940. 642 p. illus. (part col.) 22 cm. \$3.25. 2848

Contents (abridged): Part I, Social service. Mental reaction of patient to disease, and effect on his mentality. Functional nervous disorders. Bacteria. Parasites. Communicable diseases. Pathology. History, physical examination. Laboratory tests. Diet, vitamins. Heredity. Body temperature. Abnormal environments. Part II, Diseases transmitted by blood-sucking insects. By bite of insects. By animals. Contagious diseases. Carried by food and drink. Due to inoculation. To acute infections. Diseases of the respiratory system, etc. Diseases due to chemicals and drugs. Allergy. Diseases of the nervous system. Index.

Note: This is a textbook written primarily for nurses, and their need for familiarity with the symptoms, complications, and the course of disease has been considered in its preparation. Questions at the end of each chapter cover the minimum requirements. In Part I the student is given a quick survey of the fundamental background of medicine, and in Part II, a description of disease entities, including those required by the standards of the Committee on Curriculum of the National League on Nursing Education. Whenever possible, treatment stresses especially the nurse's relation to such care.

THOMAS, GERTRUDE IDA

Dietary of health and disease. Third edition, thoroughly revised. Philadelphia: Lea & Febiger, 1940. 317 p. illus. (part col.) 24 cm. \$3.50. 1946 2849

Contents (abridged): The introduction to nutrition. The processes by which the body makes use of food. Vitamins—the regulatory substances. Mineral matter. Water and cellulose. Carbohydrates. The lipids or lipins. Proteins. Metabolism. The economic aspects of nutrition. Society and nutrition. Dietary conditions of the sick. Meal planning and food purchasing. Diet for infancy. Diet for various ages and conditions. Nutritive intake for surgical patients. Modified recipes for cases requiring special dietary considerations. Diet therapy. Appendix.

Note: Designed for the use of dietitians, nurses, and instructors in the sciences that pertain to nutrition. It presents the fundamentals of food chemistry, food preparation, and dietary management in those cases where modification of the normal diet is indicated. The book includes the findings of research in the vitamin field, the newer knowledge of food allergy, a discussion of nutrition as a factor in the care of mental cases and assistance in the intelligent self-selection of food for individuals in various states of health.

THOMPSON, LA VERNE RUTH

Introduction to microorganisms. Philadelphia: W. B. Saunders Company, 1944. 445 p. illus. 20 cm. \$2.75. 2850

Contents (abridged): Unit I, Life in miniature: Living cells. Living cells in nature. Living cells in the laboratory. Bacteria. Yeast and molds. Protozoa. Unit II, Bacteria and the environment: Favorable and unfavorable physical agents. Unit III, Parasites and the host: Parasitism. Infection. Immunity. Vaccines. Immune serums. Chemotherapy. Environmental control. Hospital sanitation. Unit IV, The pathogens: The detection and recognition of the pathogens. Organisms transmitted by food and water. Bacteria and viruses transmitted by respiratory secretions. Bacteria transmitted by contact with wounds. Organisms transmitted by contact with mucous membranes. Fungi transmitted by contact with the skin or mucous membrane. Organisms transmitted by contact with animals. Organisms transmitted by fleas, lice or ticks. Organisms transmitted by mosquitoes. Unit V, Man against parasites: From superstition to scientific protection. Appendix: The microscope. Bibliography. Index.

Note: The emphasis in this book for nurses is on what bacteria do rather than on the details of morphology and classification on the theory that the nurse is not required to recognize or identify parasites. The presentation is in relatively simple language and, whenever possible, experimental evidence is incorporated to support the statement of facts. A series of original illustrations are included. The topic of parasitism is presented at some length to give a foundation for future study of the unusual diseases that the student may meet in military service. Some multicellular parasites are included. There are summaries and bibliographies at the ends of chapters and a section devoted to suggested laboratory experience at the end of each unit.

WOODERS, MARIE A., AND DONALD A. CURTIS
Emergency care. 201 illustrations. Philadelphia: F. A. Davis Company, 1942. 560 p. illus. 22 cm. \$3.50. 2851

Contents (abridged): Unit I, General emergencies: First aid—wounds—unconsciousness—artificial respiration—shock—hemorrhage—poisons and poisoning—fractures—transportation of sick and injured. Unit II, Hospital accidents: Emergencies in the medical, surgical, maternity departments, and children's wards. Mental emergencies, by Samuel A. Sandler. Emergency department—emergencies in operating room. Unit III, Accidents due to individual activities: Home, farm, and motor vehicle accidents. Back injuries. Unit IV, Occupational emergencies: Camp, school and industrial nursing. Unit V, Public emergencies: Disasters. Boy Scouts' and Girl Scouts' emergency hospital service units. Unit VI, National and civil emergencies: Army and Navy medical departments. Army Nurse Corps. Chemical warfare, diagnosis of casualties, protection and decontamination. Evacuation. Army hospitals and hospital trains. Field sanitary measures. Evacuation of wounded by air. Venereal disease control. Notes on war surgery, shell shock and malingering. The Red Cross. Unit VII, Appendix. Index.

Note: This textbook was prepared because the authors felt that instruction in this field in schools of nursing was inadequate and a professional course of instruction on this subject should be planned for both student and graduate nurses. They have endeavored in this text to cover all aspects of emergency care. Bibliographies accompany some of the chapters. A table entitled Signs, symptoms and treatment in first aid, giving much of the information in condensed form, is to be found in the appendix.

WRIGHT, HAROLD NOEL GRANT, AND MILDRED MONTAG

A textbook of materia medica, pharmacology and therapeutics. Third edition, revised. Philadelphia: W. B. Saunders Company, 1944. 706 p. illus. (part col.) 20 cm. \$3.00. 1948 2851a

Contents (abridged): Types of official drug preparations. Coloring, flavoring, diluting and other auxiliary agents. Fractions, apothecaries and metric systems of weights and measures. Physical and chemical properties of solutions, methods of expressing the concentration of solutions. Preparation and administration of solutions, dosage for children, temperature scales and thermometers. Prescription reading. Administration of drugs. Pharmacological basis of drug action and the classification of drugs. Drugs producing stimulation and depression of the central nervous system. Oxygen therapy and other forms of gas therapy. Drugs acting on special brain centers. Drugs acting on the peripheral nervous systems. Drugs acting on the circulatory system. Irritants. Chemotherapeutic drugs. Drugs acting locally. Drugs used as X-ray contrast media, and other diagnostic aids. Irritants. Emollient, demulcent and protective drugs. Biological preparations. Hydrogen ion, water and salt balance, diaphoretics and diuretics, mineral salt balance. Coagulation of the blood, hemostatics, anemias, and the use of hematinics, agranulocytosis. Toxicology. Glossary. Index.

Note: This textbook includes materials for the course in drugs and solutions and pharmacology and therapeutics as given to nursing students in the United States. Drugs are discussed according to a system of classification based upon fundamental pharmacological mechanisms: stimulation, depression, irritation and demulcent action, salt or osmotic effect, and replacement of essential biological functions. In general the plan of study of the drugs follows in order the main subdivisions of the subject—materia medica, the properties, preparations, dosages and methods of administration of the drug itself, pharmacodynamics, therapeutics, and toxicology. Study helps consist of exercises and bibliographies at the ends of chapters and 93 figures. In the third edition, the book was reorganized to conform to the new edition of the *United States Pharmacopoeia* and *The National Formulary*. Greater emphasis was placed upon the uses of the various chemotherapeutic drugs, the entire group being brought together in the middle of the book. The use of these drugs in the treatment of war wounds is described and the extension of their use in the treatment of virus diseases. A new chapter was included on drugs used in the treatment of protozoal infections.

Special Types of Nursing

ALEXANDER, EDYTHE LOUISE

Operating room technique. With 221 illustrations. St. Louis: The C. V. Mosby Company, 1943. 392 p. illus. 25 cm. \$3.75. 2852

Contents (abridged): General arrangement of an operating room for general surgery. Care and cleaning of operating rooms. Personnel. History of asepsis. Sterilization. Cleansing of skin. Care and sterilization of equipment. Suture material. Duties in anesthesia rooms. Standardization of duties and precautions. Surgical positions. Preparation of skin and draping of patient for general surgery. Instruments, needles, and suture material. Operations: On throat and neck. Chest. Abdominal wall. Stomach and bowel. Small intestine. Gall bladder and bile duct. Large intestine. Lower sigmoid, rectum, and anal region. Spleen and kidney. Vaginal and abdominal gynecologic operations. Urology. Reconstructive surgery. Nervous system. Vascular operations. Index.

Note: This book presents, together with much useful general information, carefully detailed directions for all nursing procedures which have to do with the operating pavilion in a modern hospital. Not only are the procedures described, but the principles involved are also explained and reasons given why various details are essential. Whenever possible, something of the history of the evolution of a procedure is included. In the sections dealing with operations in the various regions of the body, a brief note explains the anatomy of the region and gives the definition of the condition for which the operation is being performed. This is followed by instructions regarding the necessary equipment, anesthesia, position of the patient, operative preparation, draping, incision, procedure, etc. The book is intended for use both as a textbook for student nurses and as a reference book for graduate nurses.

AMERICAN NATIONAL RED CROSS

American Red Cross textbook on Red Cross home nursing, prepared under the direction of Nursing Service, American Red Cross, by Lona L. Trott. Formerly American Red Cross textbook, Home hygiene and care of the sick, by Jane A. Delano. Philadelphia: The Blakiston Company, 1942. 431 p. illus. 19 cm. Paper, \$0.60; cloth, \$1.10. 2853

Contents (abridged): Health and happiness in home life. How the community protects the health of the home and family. How to take care of mother and baby. What to do when sickness invades the home. Appendices. Index.

Note: This is the official Red Cross manual on home nursing. It has been written to provide the necessary information to guide the homemaker or potential homemaker in keeping herself and family in good health, in assisting with the care of members of the family who are ill, and in supporting community action for the promotion of health. An edition for young people of high school age is available also: *American Red Cross textbook in Red Cross home nursing, school edition*, Philadelphia: The Blakiston Company, 1943, 363 p., paper \$0.60, cloth \$1.10.

BAILEY, HARRIET

Nursing mental diseases. Fourth edition, completely revised and reset. New York: The Macmillan Company, 1939. 264 p. 22 cm. \$2.75. 2854

Contents: History of the care of the mentally sick. Some legal aspects of mental disorders. Personality development, alteration and adjustment. Causes—general classification of mental disorders. Symptoms of mental disorders. Qualifications for mental nursing—administration of food—relief of insomnia—other nursing procedures. Dangers and precautions—accidents and emergencies. Nursing—general paresis and the psychoses with cerebral syphilis—psychoses with encephalitis lethargica and other infectious diseases—alcoholic psychoses and the psychoses due to drugs—traumatic psychoses—psychoses due to arteriosclerosis and other disturbances of the circulation—psychoses with convulsive disorders (epilepsy)—senile psychoses and psychoses with involutional melancholia—psychoses due to metabolic and other somatic diseases—psychoses due to brain tumor—psychoses associated with organic changes of the nervous system—psychoneuroses—manic-depressive psychoses—dementia praecox and paranoia. Mental deficiency. Therapeutic measures. Physiotherapy. Mental hygiene. Bibliography. Glossary. Index.

Note: This book is designed to aid in the training of nurses for work with the mentally ill. The necessary information regarding the various mental diseases and conditions is supplemented by detailed instructions as to the nursing procedures needed in each instance, and in the present edition greater emphasis has been laid on this feature of the text. The author stresses also the importance of the proper qualifications for this type of nursing, especially sympathy and resourcefulness. The revised classification of mental disorders adopted by the American Psychiatric Association has been adhered to in arranging the subject matter in this edition, and the recommendations of the Curriculum Guide (National League of Nursing Education) have been followed. The glossary should be helpful to students.

BENNETT, ABRAM ELTING, AND AVIS B. PURDY

Psychiatric nursing technic. Philadelphia: F. A. Davis Company, 1940. 172 p. illus. 22 cm. \$2.00. 2855

Contents (abridged): Establishment of rapport between the psychiatric nurse and patient. General principles in care of mental patients. The problem of the disturbed patient. Precautions against suicide and escape. The administration of food. Therapy by activity; occupational and recreational. Physiotherapy. Specific psychiatric diagnosis and treatment procedures. The administration of medications. The management of bowel elimination. Observation and recording of patient's behavior. General ward regulations concerning nurses and attendants. The relationship of the private duty nurse to the psychiatric patient. Nursing care of neurologic patients. Bibliography. Index.

Note: A procedure guide to supplement theoretical textbook information on mental diseases, psychiatric nursing, or mental hygiene. Gives the actual, detailed nursing techniques of diagnostic and therapeutic procedures used in up-to-date private sanatoria, state hospitals, or psychiatric department.

BOWER, ALBERT GORDON, AND OTHERS

Communicable diseases for nurses, by Albert G. Bower and Edith B. Pilant, with the assistance of Wilton L. Halverson. Fifth edition, revised. Philadelphia: W. B. Saunders Company, 1943. 592 p. illus. (part col.) 20 cm. \$3.00. 2856

Contents: Communicable diseases. Immunity and infection. Medical aseptic technic. Care of communicable disease in the home. Public health control of communicable disease. Sulfonamide therapy. Diphtheria. Epidemic sore throat. Infectious mononucleosis. Vincent's angina. Scarlet fever. Measles. Rubella. Smallpox. Chickenpox. Mumps. Whooping cough. Typhoid fever. Paratyphoid fever. Typhus fever. Cholera. Amebic dysentery. Bacillary dysentery. Food poisoning. Influenza. Pneumonia. Pneumonia psittacosis. Tuberculosis. Epidemic meningitis. Acute anterior poliomyelitis. Epidemic encephalitis. Acute nonsuppurative encephalitis. Erysipelas. Gonorrhea. Syphilis. Tetanus. Anthrax. Rabies. Glanders. Leprosy. Plague. Dengue. Undulant fever. Rocky Mountain spotted fever. Tularemia. Actinomycosis. Yellow fever. Malaria. Trachoma. Trichinosis. Hookworm disease. Trichophytosis. Favus. Impetigo contagiosa. Pediculosis. Scabies. Conjunctivitis. Glossary of medical terms. Index.

Note: In this text each communicable disease is discussed from the standpoint of medical aspects, predisposing and exciting causes, symptoms, prognosis, differential diagnosis, prophylaxis, treatment and nursing care. Emphasis is placed on the public health viewpoint. In the revision for the fifth edition, a new chapter was added on the sulfonamides. Questions have been appended to each chapter, references grouped at the ends of chapters and the glossary included at the end of the book.

BRADY, LEO, AND ETHNA LOUISE KURTZ

Essentials of gynecology. New York: The Macmillan Company, 1941. 257 p. illus. 22 cm. \$3.00. 2857

Contents: Anatomy. Physiology of the female reproductive organs. The gynecological history and examination. Gynecological symptoms and their importance. The gynecological infections. Uterine displacements and obstetrical injuries. Ectopic or extrauterine pregnancy. Sterility. Gynecological cysts and tumors. Gynecological surgery. The equipment and supplies in the gynecological operating room. The student nurse in the operating room. Postoperative treatment. Postoperative complications. Female urology. Index.

Note: This book is largely a summary of lectures on gynecology which Dr. Brady delivered to the nurses at the University Hospital in connection with his work at the University of Maryland. Observations of the part played by the nurses in the Gynecological Operating Room of the Johns Hopkins Hospital have served to supplement this material. The book is well illustrated, many of the drawings having been made by Max Broedel. Since nursing procedures are described throughout the text, the book is of especial importance to nurses, but it will be of value also as a means of rapid review to medical students and physicians.

BROOKES, HENRY SPENCE, JR., AND PEARL CASTLE

A textbook of surgical nursing. Second edition. St. Louis: The C. V. Mosby Company, 1940. 663 p. illus. 22 cm. \$3.50. 2858

Contents (abridged): The nurse and her patient. Inflammation and special infections. Burns and skin grafts. Ulcers, gangrene, and necrosis. Wounds. Tumors. Dressings and dressing room technique. First aid. Routine pre- and postoperative care. Anesthesia. Operating division. Surgery of the various regions, tracts, and systems of the body, considered under separate headings. Hernia. Gynecologic surgery. Postoperative complications. Special procedures. Medicolegal points. Glossary. Index.

Note: This book presents the various surgical conditions and methods of surgical and nursing care as an aid in coordinating the activities of the nurse and the physician before, during, and after an operation. The routines described are largely based upon or taken from those in use at Barnes Hospital, St. Louis. In this edition the co-author has added considerably to the subject matter devoted to nursing care. Some new subjects have been incorporated and later methods of treatment have been included. The book is intended for use in nurses' training courses.

BROWNELL, KATHRYN OSMOND

A textbook of practical nursing. Second edition, revised. Philadelphia: W. B. Saunders Company, 1944. 411 p. illus. 20 cm. \$3.00. 2859

Contents (abridged): Anatomy and physiology: Cells. The skeletal, muscular, nervous, circulatory, respiratory, digestive, lymphatic, excretory, glandular, and reproductive systems. Special senses. Ethics of the nursing profession. Personal hygiene and development. Personal economy of the nurse. Household management. Community health. Cooking and foods. The expectant mother. Care of the convalescent mother and her newborn infant. Formula, supplementary and protective feeding. Growth in children; their diseases. Care of special cases. Methods of practical nursing: General directions. Bed making. General care of patient. Temperature. Pulse. Respiration. Enemas. Perineal care. Counterirritants. Flaxseed poultice. Mustard paste. Turpentine stupes. Binders. Ice caps. Hot water bottles. Eye and ear treatments. Foot baths. How to give a hypodermic. How to disinfect excreta and secretions. How to collect specimens. Care of equipment. Charting. Symptoms. Medication. Hemorrhage. Professional word list. Index.

Note: A book used as a text in the United States for elementary courses given to practical nurses and trained attendants, as distinguished from those studying to become registered nurses. It covers principles, techniques, and methods with their relation to nursing care in the home. There are problems for study and discussion, review examinations, and bibliographies at the ends of chapters. There are 51 original illustrations. Twenty-two new figures were included in the second edition, devoted particularly to home nursing. The problems were rewritten and new review questions included. The bibliographies were revised and expanded. The following chapters were thoroughly revised: Cooking and foods. Expectant mother. Care of mother and newborn infant. Care of special cases. Methods of practical nursing. A new chart on communicable diseases was added. Treatments usually ordered in the more serious types of illness only, such as wet pack and cold sponges, were eliminated.

CABOT, HUGH, AND MARY DODD GILES

Surgical nursing. Fourth edition, revised. Philadelphia: W. B. Saunders Company, 1940. 513 p. illus. (part col.) 20 cm. \$3.00. 2860

Contents: Development of modern surgery. Preoperative management. Anesthesia. Postoperative management. Hemorrhage and shock; thrombosis and embolism. Skin and adjacent tissues. Surgical fevers. Strains, sprains, dislocations, and fractures. Diseases of bone. Scalp and skull. Spine and cord. Face, jaw and tongue; neck. Thyroid and thymus glands. Diseases of the breast. Pleura and lung. Diseases of the abdomen, stomach and duodenum, intestines, rectum, gallbladder, bile ducts, and pancreas. Hernia. Diseases of urinary tract, kidney, bladder, urethra, prostate, and female reproductive organs. Index.

Note: These authors give a description of surgical diseases and the technique of their nursing care, emphasizing the patient's needs as an individual, both mental and physical. Diseases are defined, and their causes, symptoms, treatment, and the prognosis given. The fourth edition includes a new chapter on diseases of the female reproductive organs, also new discussions of intravenous anesthesia, alkalosis, acidosis and water balance, acute dilation of the stomach, uses of chemotherapy. Among the several rewritten subjects is that of pre- and postoperative nursing care.

CLARKE, ERIC KENT

Mental hygiene for community nursing. Minneapolis: The University of Minnesota Press, 1942. 262 p. illus. 23 cm. \$3.00. 2861

Contents: A challenge to the public health nurse. Mental hygiene as a community responsibility. The pre-school child. The child at school. The handicapped child. The adolescent. The family. The convalescent and the chronic invalid. The psychoneurotic. The psychotic. Community care of the feeble-minded. The mental hygiene of the community nurse. Suggested reading. Index.

Note: The author discusses the signs and symptoms of mental disorders in a simple, direct fashion, stresses the importance of early recognition of mental deviations, and charges the community nurse with the responsibility of recognizing the problem and guiding the patient to the proper channels for diagnosis and treatment. A selected group of personal histories of children and adults gives a cross section of the problems the community nurse may encounter.

COLTMAN, GAYLE

649
c-22x
Textbook for male practical nurses. New York: The Macmillan Company, 1941. 215 p. illus. 19 cm. \$2.00. 2862

Contents: The hospital. The ward unit and furnishings. The admission of a patient. The discharge of a patient. Open and closed beds. Critical cases and post-mortem procedure. Isolation precautions. The use of appliances for the care and comfort of the patient. Care of the patient at meal hours; for the night; for the porch and bed. The cleaning bath. The administration of hypodermics. Nursing care of genitourinary cases. Simple diagnostic measures and the observation of symptoms. Important points in giving medicines. Charting and record keeping. Enemas. References. Index.

Note: Designed for the training of male practical nurses according to the specifications of the New York State Nurse Practice Act, this text provides a simple but detailed outline of instructions for all the procedures usually performed in hospitals by male practical nurses.

CUTLER, BESSIE INGERSOLL, AND OTHERS

1923
Pediatric nursing, by M. Corinne Bancroft, Elizabeth Pierce, and Bessie Cutler. Third edition, completely revised, reset and enlarged. New York: The Macmillan Company, 1938. 652 p. illus. 22 cm. \$3.50. 2863

Contents (abridged): Part I, Growth and development of children, care and nutrition: Growth and development during infancy, during early childhood, during later childhood and early adolescence. Care of the child from infancy through early adolescence. Part II, General nursing care: General nursing needs of the sick child. Preparation and serving of food. Therapeutic procedures. Procedures related to the clinical laboratory and clinical investigation. Isolation in the care of children. Care of the child requiring treatment by surgery. Infection, immunity, serum, and vaccine therapy. Part III, Nursing in diseases of infancy and childhood: Medical aspects and nursing care in diseases of the newborn—in disorders of nutrition and dentition—diseases of the gastro-enteric tract—upper and lower respiratory tract—heart and circulatory system—genito-urinary system—blood—lymphatic glands—in diabetes and other diseases of the glands of internal secretion and in allergy—in communicable diseases—in tuberculosis—in syphilis—in diseases of the eye, skin and hair—nervous system. Appendix. Index.

Note: The book is divided into three sections corresponding to the three aspects of pediatric nursing: growth and development of the child, general nursing care, and the specialized nursing required in specific diseases. In the first part attention is directed not only to physical growth but to mental, emotional, and social development as well. Revision of this portion of the book has enhanced the portrayal of the child as a growing, developing individual. The section on the care of the child, including discussion of the principles of nutrition, has also been enlarged. Several chapters in the section dealing with diseases of infancy and childhood have been rewritten, in order to keep abreast of recent advances in medicine, and essentials of nursing care have been added to the discussion of the medical aspects of the various diseases. A bibliography is given with each chapter. The authors were assisted by Dr. A. Graeme Mitchell, Lola B. Emerson, and others.

DAVIS, DAVID MELVIN

448, 1946
Urological nursing. Third edition. Philadelphia: W. B. Saunders Company, 1941. 203 p. illus. 20 cm. \$2.25. 2864

Contents: Diseases of the urogenital tract: Urinary obstruction. Infection. Calculi. Tumors. The bladder and the nervous system. Wounds and injuries. Malformations. Foreign bodies. Urinary obstruction and principles of urinary drainage. Nursing care: Preoperative care. Postoperative care. Urological equipment: Instruments for clinic or office diagnosis and treatment. Instruments for cystoscopy. Anesthetics. Instruments for urological operations. Equipment used in bedside care of urological cases. Linen supplies. Summary. Urological procedures: Subcutaneous infusion. Cleaning up for urethral instrumentation. Catheterization. Instillation. Irrigation. Urethral instrumentation. Simple cystoscopy (bladder only). Cystoscopy and urethral catheterization. Cystoscopy with pyelography. Operative cystoscopy. Cystoscopy, miscellaneous. Simplified set-up for cystoscopy. Endoscopy. Lithotripsy. Circumcision. Transurethral prostatic resection.

Operation on the kidney. Operation on the bladder. Perineal operation on the prostate, seminal vesicles, or urethra. Operation on the scrotal contents. Caudal or transsacral anesthesia. Miscellaneous. Postoperative bladder irrigation. Phenolsulfonephthalein test. Operations, nomenclature. Index.

Note: This book, designed for the use of student nurses, emphasizes nursing care. The special points in the care of urological cases are developed in detail. Both surgical and medical treatment of all the common genito-urinary disorders are covered with stress on the knowledge a nurse needs in order to care for the patient. Collection of specimens, handling of fluids, dressings, urinary drainage, and many other duties the nurse must perform are included. In the third edition the illustrations were revised, new ones added, and all of them tied in more closely with the text material. The section on nursing care was enlarged to include the care of the female patient. There was added a discussion of the use of the sulfanilamide group of drugs in the treatment of urinary infection and a table of diets for use in conjunction with these treatments.

DAVIS, M. EDWARD, AND MABEL C. CARMON

Obstetrics for nurses. Thirteenth edition, revised. Philadelphia: W. B. Saunders Company, 1944. 597 p. illus. (part col.) 20 cm. \$3.00. 2865

Contents: Introduction. Unit I, Human reproduction: Anatomy and physiology of the reproductive system. Anatomy of the female generative organs. Physiology of reproduction. The diagnosis of presentation and position. Unit II, Nursing in pregnancy: Material changes. The diagnosis of pregnancy. The hygiene of pregnancy. Disturbances of pregnancy. Toxemias of pregnancy. Hemorrhages during pregnancy. Unit III, Nursing during labor and delivery: Physiology of labor. Conduct of labor at home. Conduct of labor in the hospital. Analgesia and anesthesia in labor and delivery. Complications during labor. Obstetric operations. Unit IV, Nursing during the puerperium: The physiology of the puerperium. Care during the puerperium. Complications of the puerperium. Unit V, Nursing during the neonatal period: The newborn infant. Care of the child. The infant's layette. Infant feeding. The disorders of the first weeks of life. The care of premature infants. The reasons for failure of the fetus or young infant to survive. Appendix. Glossary. Index.

Note: This is a text for undergraduates and postgraduates and a reference for the practicing nurse. It was reorganized and reset for the thirteenth edition, which contains 306 illustrations, mostly original, of which 10 are full-page plates in colors. The content was expanded to include the whole maternity cycle. Selection of material is based on the concept that pregnancy is not a disease but a natural physiologic process and that obstetric care is a protective health service to mother and baby. Stress is placed upon those factors which contribute to normal pregnancy, labor, and puerperium; the need of preventing complications in the process of reproduction; and the place of the nurse as an essential factor in any program for maternal care—her special contribution and the necessity for close collaboration between the doctor and nurse to give continuous medical and nursing service. The chapter on the reason for failure of the fetus or young infant to survive is new. New questions appear at the ends of chapters and new bibliographies at the ends of units. New material is included on caudal anesthesia, prenatal care, diet in pregnancy, exercises and posture, use of chemotherapy and antibiotics to combat infection, and advantages of breast feeding.

DENISON, ABBY-HELEN

A textbook of eye, ear, nose and throat nursing; completely revised by Lyyli Eklund. Second edition. New York: The Macmillan Company, 1937. 367 p. illus. (part col.) 22 cm. \$3.25. 2866

Contents: Anatomy and physiology of the eye. Diseases of the eye and special points in their nursing care. Hygiene of the eyes. Drugs and solutions used in treatment. Technique of nursing procedures in relation to diseases of the eye. Preparation of supplies and appliances used in eye treatments. The eye operating room. The out-patient department eye clinic. Anatomy and physiology of the ear. Diseases of the ear and special points in nursing care. Drugs and solutions used in ear treatment. Technique of nursing procedures in relation to diseases of the ear. Anatomy and physiology of the nose and accessory sinuses. Diseases of the nose and accessory sinuses and nursing care. Anatomy of the mouth, pharynx, larynx, trachea and esophagus. Drugs and solutions used in the treatment of nose and throat diseases. Technique of nursing procedures. Ear, nose and throat

operating room. The function of a social service department in a specialized hospital. Index.

Note: For graduate and undergraduate students of nursing, this concise text emphasizes nursing care and gives detailed instruction on specific techniques of various therapeutic measures and nursing procedures. This edition has been revised throughout to include the newer methods and techniques and the latest knowledge concerning etiology, prevention, and treatment. There is a bibliography with each section.

ELIASON, ELDRIDGE LYON, AND OTHERS

Surgical nursing. Sixth edition thoroughly revised and re-edited. By E. L. Eliason, L. Kraeer Ferguson and Evelyn M. Farrand. 245 illustrations. Philadelphia: J. B. Lippincott Company, 1940. 673 p. illus. 21 cm. \$3.25. 2867

Contents (abridged): Unit I, Introduction to surgical nursing: Inflammation. Antiseptics and asepsis. Anesthetics. Pre- and post-operative nursing care. Methods. Postoperative complications. Tumors. Unit II, Nursing in conditions of the respiratory system. Unit III, The circulatory system, blood and blood-forming organs. Unit IV, The alimentary system. Unit V, The urinary tract. Unit VI, The integumentary system. Unit VII, The eye and ear. Unit VIII, The endocrine glands. Unit IX, The nervous system. Unit X, The musculoskeletal system. Unit XI, The reproductive system. Unit XII, Surgical communicable diseases. Unit XIII, Operative aseptic technic. Index.

Note: In this textbook for nurses' training courses an effort has been made to explain the reason as well as the method for each procedure. To accomplish this purpose, sections on anatomy and physiology have been inserted where deemed advisable. Revision of this edition has been extensive and the subject matter has been completely rearranged in many instances in order to conform to the *Curriculum guide for schools of nursing*. The portion on the actual nursing care has been revised by the new co-author, Miss Evelyn M. Farrand, and sections dealing with the nursing care of diseases of the lungs, lymphatics and adrenals, of furunculosis, carbunculosis and infections of the hands and fingers have been added. Other subjects receiving special attention are peripheral vascular disease, peptic ulcer, erysipelas, tetanus, gas gangrene, surgical conditions of the brain and spinal cord, and the care of the colostomy. The most recent Wangenstein apparatus is explained in detail, and a description of the Miller-Abbott tube and the nursing care incident to its use has been included. Attention has been given to chemotherapy and the newer drugs and anesthetics. Chapters on bandaging and solutions have been omitted.

ENSWORTH, HERBERT KLEBER, AND LELA GREENWOOD

Pneumonia and its nursing care. With a foreword by Russell L. Cecil, M.D.; 44 illustrations. Philadelphia: J. B. Lippincott Company, 1940. 177 p. illus. (part col.) 17 cm. \$1.50. 2868

Contents: The cause of pneumonia. Pathogenesis and pathology. The symptoms and diagnosis. Prevention. Serum therapy. Oxygen therapy. Chemotherapy. General measures in treatment. Pneumonia in children. Complications. Care of the pneumonia patient in the home. Public health nursing in pneumonia. The responsibility of the nurse to the patient and to the physician. References. Index.

Note: This brief handbook covers the recent advances (exclusive of penicillin) in the treatment of pneumonia and is designed to acquaint the nurse with the increased knowledge and skill required for adequate nursing care of the patient. Explanations of oxygen therapy, serum therapy, and chemotherapy are given with the techniques of their application. In discussing pneumonia and its medical care, the authors discuss the etiology, causes, nursing aspects, treatment, convalescence, and prevention of infection.

FELTER, ROBERT KENNETH, AND FRANCES WEST

Surgical nursing. With 242 illustrations and 7 color plates. Third edition. Philadelphia: F. A. Davis Company, 1942. 545 p. illus. (part col.) 22 cm. \$3.50. 2869

Contents (abridged): Unit I, Introductory and basal pathological states: Inflammation and infection. Unit II, Surgical lesions

and nursing: Preoperative and postoperative nursing care; anesthesia. Unit III, Respiratory system: The chest. Pulmonary tuberculosis. Unit IV, Diseases of the blood vessels and lymphatic system. Unit V, Diseases of the gastrointestinal system: Surgery and nursing care of the mouth, esophagus, stomach, duodenum, colon, rectum, small intestine, hernia, liver, gallbladder, pancreas, spleen. Unit VI, Urology. Unit VII, Surgery of the osseous and muscular systems. Unit VIII, Endocrine diseases. Unit IX, Surgery of the nervous system. Unit X, Integumentary system: Burns. Surgery of breast and nursing care. Unit XI, Reproductive system: Male generative organs; gynecological nursing care. Unit XII, Plastic and reconstructive surgery. Unit XIII, The nurse in the operating room: Operating room technic. References. Index.

Note: In this textbook for nurses, the various subjects in the curriculum have been correlated, so far as possible, with surgical nursing by directed study. Emphasis has been placed upon the mental aspects of nursing throughout the text, and a surgical picture of the more important conditions has been presented, giving the patient's condition and the surgeon's part in his care. In this edition, the material has been rearranged to a very great extent, and new units have been introduced. A new section entitled "The central supply room" was contributed by Catherine E. Rilly, R.N.

FUNSTEN, ROBERT VIVIAN, AND CARMELITA CALDERWOOD

Orthopedic nursing. With 181 text illustrations. St. Louis: The C. V. Mosby Company, 1943. 602 p. illus. 22 cm. \$3.75. 2870

Contents (abridged): Introduction for the teacher and the student. General features of orthopedic nursing. Congenital and acquired deformities. Bone disorders in children. Acute and chronic inflammation of joints. Fractures, dislocations, sprains, and other joint injuries. Static deformities and disabilities. Conditions resulting from injury or disease of the brain, spinal cord and nerves. Bone tumors. Conditions of the low back. Bone disorders in adolescent and adult life. The orthopedic nurse and the war. Glossary. Index.

Note: This textbook on orthopedic nursing is presented in an attempt to bring together in one volume the background of medical information and nursing techniques necessary to assist the nurse in caring for the orthopedic patient. Emphasis has been placed upon established principles of knowledge and procedure, since the principles remain constant, even though techniques vary. The book is well illustrated, and written in an interesting style.

GAGE, NINA DIADAMIA, AND OTHERS

Communicable diseases, by Nina D. Gage and John Fitch Landon with the collaboration of Grace M. Loughurst and George F. Hoch. 52 illustrations including 14 color plates. Fourth edition. Philadelphia: F. A. Davis Company, 1944. 525 p. illus. (part col.) 22 cm. \$3.50. 2871

Contents (abridged): Unit I, General principles and care of infection and immunity: Technic in caring for communicable diseases. Cross infection. Unit II, Commoner communicable diseases: Diphtheria, scarlet fever, measles, mumps, pertussis, smallpox, chickenpox, erysipelas, meningitis, poliomyelitis, tetanus and encephalitis and their nursing care. Unit III, Rarer communicable diseases: Hookworm, dysentery, influenza, septic sore throat, Vincent's infection, undulant, yellow and bubonic fevers, malaria, cholera, dengue and tropical diseases rare in the United States and their nursing care. Unit IV, Diseases less readily transmitted: Lobar pneumonia, pulmonary tuberculosis, typhoid, typhus, psittacosis fevers, syphilis and gonorrhea and their nursing care. Unit V, Appendix: The United States Public Health Service. The nonhospitalized communicable disease patient. Administration of antitoxins and antisera. Chemotherapy—sulfanilamide and its derivatives. Penicillin. Glossary. References. Index.

Note: Designed for student nurses in communicable disease hospitals, this text has been arranged so that the subjects most likely to be encountered in ward work are placed foremost. A feature is the reference synopsis of tropical diseases unfamiliar in the United States.

GARDNER, MARY SEWALL

Public health nursing. Third edition revised. New York: The Macmillan Company, 1936. 476 p. illus. 22 cm. \$3.50. 2872

Contents: Early home care of the sick. Birth and development of the modern movement in England. Public health nursing in the United States prior to 1900. Early years of the twentieth century in the United States. Later developments in the United States. Public health nursing as a world movement. Fundamental principles of public health nursing. Public health nursing education. Records and statistics. Starting public health nursing under private auspices. Organization. Functions of the board. Officers, board and committees. Public health nursing under state auspices; under county auspices; under municipal auspices. Shall I become a public health nurse? The field nurse working on a staff. The field nurse working alone. The supervisor. The director. Staff leadership. Classification of services and home teaching. Maternity and child health work. School nursing and the nurse in industry. Three communicable diseases. Mental hygiene. Present-day issues. Educational problems. Bedside care for the patient of moderate means. The volunteer worker. The community chest. Public and private control of public health nursing. Chronology. Index.

Note: A text for graduate and undergraduate nurses outlining the whole subject of public health nursing, showing first the historical development of the public health nursing movement and then describing public health principles, education, and records, the various phases of public health nursing under both private and official auspices, the various positions of the public health nurse, and the kinds of public health nursing services. The final section discusses five current problems confronting the public health movement.

GILBERT, RUTH

The public health nurse and her patient. New York: The Commonwealth Fund, 1940. 396 p. 23 cm. \$2.25. 2873

Contents: Introduction: mental hygiene in public health nursing. The nurse's attitudes toward bedside nursing. The patient's attitudes toward illness. Emotional reactions to physical defects and injuries. Mental defect and disease as seen on the district. Building a relationship between nurse and patient. The nurse's relation with the individual patient: some techniques. The nurse's relation with groups of patients. Nurse and maternity patient. Introduction. The child grows, matures, and learns. Familiar training situations. Problem behavior. Relationships between nurses in the same organization. Interagency relationships. Bibliography. Index.

Note: Every thoughtful public health nurse realizes that attention to the physical problem of her patient, arduous and exacting as this is, is only a part of her responsibility. The essence of her work is in her relationships with the patient and his family, in helping the patient through emotional stresses related to, and often a part of, his illness. Miss Gilbert, who has had training and experience as both public health nurse and psychiatric social worker, considers ways in which the public health nurse can work with persons rather than take care of cases. Her suggestions are not intended to add to the nurse's duties, but rather to make her work more effective through understanding the patient, obtaining his interest, and helping him solve his problems.

GOTTEN, NICHOLAS, AND LETITIA WILSON

Neurologic nursing. Philadelphia: F. A. Davis Company, 1940. 195 p. illus. 22 cm. \$3.00. 2873a

Contents (abridged): Unit I, Anatomy and physiology: The nervous system; peripheral nerves; cranial nerves; sympathetic nerves; cerebrospinal fluid. Unit II, Neurologic signs and symptoms. Unit III, Neurologic disorders: The paralyses. Birth trauma. Mental deficiency. Spina bifida. Degenerative diseases of the spinal cord. Muscular disorders. Neuritis. Meningitis. Anterior poliomyelitis. Syphilis. Encephalitis. Encephalitis lethargica. Chorea. Cerebral vascular diseases. Epilepsy. Migraine. Alcoholism. Brain tumors. Spinal cord tumors. Trigeminal neuralgia. Head injuries. Spinal cord injuries. Diagnostic tests. Bibliography. References. Index.

Note: A concise and simple description of the etiology, pathology, symptoms, and methods of treatment of neurologic diseases for nurses. Much of the material contained in this specialized text is not available in general nursing textbooks.

GRANT, AMELIA HOWE

Nursing: a community health service. Philadelphia: W. B. Saunders Company, 1942. 277 p. 20 cm. \$2.50. 2874

Contents (abridged): Unit 1, Public health nursing an essential community service: Development of public health work. The nurse in public health. Organizations. Official agencies. Non-official agencies. Relationships between public and private agencies. Professional nursing organizations. The nurse and the family. The nurse and the community. Working with others. Administrative aids. Unit 2, Preparation for public health nursing: Basic preparation. Programs of study for graduate nurses. Securing a position: Qualifications of public health nurses. Choosing a position. Method of selecting and promoting staff. Merit system. Staff education: content of, participation in. Methods of. Unit 3, Special phases of public health nursing: Morbidity nursing. Maternity nursing. Child health. Health service for school children. Communicable disease nursing. Social hygiene nursing—control measures. The role of the public health nurse. Clinic service. Home visits. Tuberculosis nursing. Newer developments: Cardiac diseases. Diabetes. Cancer. Nutrition. Industrial health service. Vocational and academic high schools. Mental hygiene. Suggested readings. Index.

Note: Intended for professional students of public health nursing and for students in basic nursing education. It provides a general survey of the field and is useful for vocational guidance.

HASENJAEGER, ELLA

Asepsis in communicable-disease nursing; principles and practice as applied in a communicable-disease hospital with practical teaching suggestions. 27 illustrations. Philadelphia: J. B. Lippincott Company, 1940. 151 p. illus. 17 cm. \$1.50. 2876

Contents: Part I, Technics in communicable-disease care: Principles of medical asepsis and aims to be attained. Technics in nursing care of communicable diseases. Technics applied to home, general hospital, and army hospital. Technics in admission, transfer, and discharge of patients. Technics for kitchen maids, porters, and other helpers. Part II, Instruction in communicable-disease care: Content of course in communicable diseases. Instruction methods. Our courses in communicable diseases. Tests and teaching suggestions. References. Index.

Note: Presents the principles and practices of medical asepsis which are applicable not only for the communicable-disease hospital but in general and military hospitals and in the home as well. General instruction for the nursing care of the patient, gown and hand technique, temperature and blood pressure technique, and related topics are discussed in detail. The material is based on experience at the Essex County Hospital for Communicable Diseases in Belleville, New Jersey. The second edition contains minor textual changes and 27 specially posed photographs which illustrate details in technique and give emphasis to the principles discussed.

HODGSON, VIOLET (HOFFMAN)

Handbook on tuberculosis for public health nurses. Revised edition. New York: National Tuberculosis Association, 1942. 91 p. 21 cm. Paper, \$0.50. 2877

Contents: General information about tuberculosis. Community relationships. Concept of tuberculosis nursing. Case-finding. Determining the tuberculosis nursing problem. Home visiting. Case load. Nursing supervision, when and how long. Substitutes for home visiting. Nursing records. Chest clinics. What to teach the patient and family. Hospital care. Collapse therapy. Hospital regimen in the home. Appraisal of the nursing service.

Note: A pamphlet presenting the problem of tuberculosis as part of the service of a public health nurse working in a generalized program. The need for special knowledge of the disease is stressed, as well as the need for suspecting the possible presence of tuberculosis in any family approached by the public health nurse although no obvious disease may be present. The revised edition incorporates new terminology, classifications, and methods of treatment developed between 1939 and 1942.

HODGSON, VIOLET (HOFFMAN)

Supervision in public health nursing. New York: The Commonwealth Fund, 1939. 376 p. illus. 23 cm. \$2.50. 2878

Contents: The essential element in supervision. The historical development of supervision in public health nursing. What is required of the supervisor. The philosophy of supervision. Organization and supervision: principles. The teaching function of

supervision: methods. Planning a program of supervision. The field visit of the supervisor. The supervisor at the clinic. The group conference. Records and reports. New staff nurses and affiliating students. Specialized supervision. Supervision of volunteers. Advisory committees. Supervision of school and industrial services. Evaluation and rating. Satisfaction of the supervisor. Bibliography. Index. List of diagrams.

Note: The author discusses supervision from the standpoint of developing leadership which, informing and improving policies and methods, draws upon the intelligence and abilities of the staff members. She considers ways of encouraging individual thinking and planning, self-analysis, self-appraisal, and self-improvement. The principles and methods of organization and administration are discussed at length in order to define the framework within which supervision operates.

INGRAM, MADELENE ELLIOTT

Principles of psychiatric nursing. With a foreword by Ross McC. Chapman. Second edition, revised. Philadelphia: W. B. Saunders Company, 1944. 511 p. illus. 20 cm. \$2.75. 2879

Contents (abridged): History and development of mental nursing. Teaching of psychiatric nursing. Approach. Personal hygiene. Personal property. Feeding problems. Suicide, escape, hazards, accidents. Admission, transfer, discharge. Management of active patients. Group management. Parole. Occupational and recreational therapy. Hydrotherapy. Bibliotherapy. Treatments. Behavior. Reaction types: organic group, functional group. Miniature case studies. Specific psychiatric treatments: Aschner treatment, fever therapy, sodium amylal narcosis, convulsive therapy, insulin shock treatment, electro-encephalography. Charting. Traveling with patients. Mental hygiene. Glossary. Index.

Note: Designed for use as a text in undergraduate and postgraduate psychiatric nursing courses. Summary outlines, questions, and references are included at the ends of chapters. The various nursing procedures and their technique are described, with special emphasis on the needs of the patient as an individual. In the second edition a new introductory section was added describing the methods of approach in this text. The number of references was increased. Specific details of nursing care were expanded. The chapters on reaction types and mental hygiene were expanded, the latter to include a new discussion of child guidance. Student reports were included on the following: Approach to patients. Personal appearance and hygiene. Care of personal property. Dining room. Ward dietary problems. Admission. Management of active patients. Group morale. Parole. Ward occupation and industry. Library and bulletin board. Twenty new illustrations and charts were included.

LEWIN, PHILIP

Orthopedic surgery for nurses, including nursing care. Third edition, revised and reset; illustrated by Harold Laufman. Philadelphia: W. B. Saunders Company, 1940. 462 p. illus. 22 cm. \$3.50. 2880

Contents (abridged): Terminology. Specialties related to orthopedic surgery. General orthopedic considerations. The cripple. Orthopedic nursing care. Fields for specialization in orthopedic nursing. The orthopedic department of a general hospital. Plaster of Paris technic. Braces. Splints. Slings. Aids in locomotion. Orthopedic operating room. Clubfoot. Congenital dislocation of the hip. Torticollis. Other congenital defects. Postural defects. Scoliosis. Rickets. Scurvy. Tuberculosis and syphilis of bones and joints. Osteomyelitis. Periostitis. Arthritis. Gout. Neurologic orthopedic conditions. Acute anterior poliomyelitis and treatment. Spastic paralysis. Brachial birth palsy. Epiphyses. Tumors of bones and joints. Traumatic, industrial, and military conditions. Adhesive strapping. Fractures. Dislocations. Muscles. Tendons. Sesamoids. Bursae. Fascial. Circulatory disturbances of the extremities. Disorders of metabolism and endocrine function. Allergy. Blood and lymphatic diseases. Unusual orthopedic conditions. Physical therapy. Occupational therapy. Special drugs and diets. Regional disturbances. Elbow. Forearm. Wrist. Hand. The back. Spondylolisthesis. Sacro-iliac lesions. Coccyx. Sciatic syndrome. Pelvis. Hip. Thigh. Knee. Foot. Ankle. Index.

Note: A text for nurses for both undergraduate and graduate courses in conditions of the musculo-skeletal system. The author keeps the nursing point of view always in the foreground by discussing the various orthopedic conditions of different parts of the body from the angle of their proper nursing care. The 457 illustrations on 195 figures picture features of most of the defects described and often give the progressive steps utilized in treatment. The third edition was completely revised and reset.

Approximately 200 new illustrations were included. The preventive aspects were stressed, and data supplied on the various social agencies at work on physical restoration and vocational rehabilitation and a summary of the benefits of the Social Security Act in connection with the administration of orthopedic nursing. New chapters were included on orthopedic nursing care, fields for specialization, neurological orthopedic conditions, and treatment of infantile paralysis. New discussions were included on preoperative and postoperative measures; anesthesia; intravenous therapy; blood transfusion; water balance; roentgenology; spastic paralysis; bone tumors; traumatic, industrial and military conditions; fractures; muscles; vitamins; blood and lymphatic diseases; physical therapy; special drugs and diets; and drugs.

LOCKWOOD, CHARLES DANIEL, AND OTHERS

The principles and practice of surgical nursing, by Charles D. Lockwood and John A. Wolfer, in collaboration with Mildred E. Newton. Second edition, revised. New York: The Macmillan Company, 1935. 371 p. illus. 22 cm. \$3.50. 2881

Contents: Principles of surgery: Inflammation. Wounds. Burns, ulcers, and gangrene. Tumors and cysts. Anesthesia. Preoperative and postoperative care of surgical patients. Surgery of the head. Surgery of the face, mouth and jaws. Surgery of the neck. Surgery of the chest and chest wall. Surgery of the abdomen: the stomach, gall-bladder, liver, pancreas, spleen. Surgery of the intestines: intestinal obstruction. Appendicitis and peritonitis. Hernia, or rupture. Diseases of the rectum and anus. Surgical diseases of the genitourinary system and organs. Surgical diseases of the female reproductive system. Surgical diseases of the vascular system. Surgery of the nervous system. Surgical complications and emergencies. Fracture and dislocations. Diseases of bones and joints. Deformities. Application of physical therapy to surgery. Index.

Note: Designed for undergraduate students of nursing, this text aims to provide them with sufficient knowledge of disease processes and treatments to enable them to understand, observe intelligently, and carry out nursing care. This edition has been extensively revised and enlarged, especially by the addition of new sections on nursing care by Mildred E. Newton.

LONGHURST, GRACE MAY

Tuberculosis nursing. With the collaboration of N. Stanley Lincoln, Bernice E. Tansey and Caroline T. White. 67 illustrations. Second edition. Philadelphia: F. A. Davis Company, 1944. 307 p. 22 cm. \$3.50. 2882

Contents: Clinical tuberculosis: Definitions and tests. Classification, symptoms, diagnosis and complications. Medical management of pulmonary tuberculosis. Aseptic technic: Modern concept of the field of tuberculosis and tuberculosis nursing. Aseptic technic in a tuberculosis hospital. Collection of sputum for examination of tubercle bacilli. Nursing care. Chest surgery: Collapse therapy in tuberculosis. Therapeutic pneumothorax. Thoracotomy. Oleothorax. Intrapleural pneumonolysis. Phrenic nerve interruption. Thoracoplasty. Bronchoscopy and laryngoscopy. Behavior problems: Nurse's attitude toward behavior problems of tuberculosis patients. Case histories. Discharge and rehabilitation of the patient: Instructions to the patient and his family. Rehabilitation. Out-patient service: Chest clinics. Clinic routine. Nursing care in extrapulmonary tuberculosis: General routine care. Orthopedic care of tuberculous bones and joints. Care given to miscellaneous tuberculous lesions. The sterilization of materials for collapse therapy. Glossary. Bibliography. Index.

Note: Intended chiefly for nurses or student nurses who are interested in the institutional care of the tuberculosis patient, mainly in the tuberculosis hospital. Because of the number of other texts available on communicable disease nursing, no effort has been made to describe the details of aseptic technique except where a procedure is typical of tuberculosis nursing. There are short bibliographies at the end of each unit and reference questions following each chapter.

LYNCH, THERESA I.

Communicable disease nursing. With 156 text illustrations and 5 color plates. St. Louis: The C. V. Mosby Company, 1942. 678 p. illus. (part col.) 22 cm. \$3.75. 2883

Contents (abridged): Part I, Orientation to communicable disease nursing: Historical introduction. Preparation. Infection and resistance to disease. Vaccines, immune sera, and serum reactions. Part II, Medical aspects and nursing care of communicable diseases: A. Diseases spread mainly by discharges from the nose and mouth: Measles, rubella, chicken pox, smallpox, etc. B. Through discharges from the skin and mucous membranes: Impetigo contagiosa, scabies, leprosy, trachoma. C. Through discharges from the gastrointestinal tract: Amebic and bacillary dysentery, typhoid fever, cholera, etc. D. Diseases transmitted mainly by infected animals: Psittacosis, undulant fever, tularemia, etc. E. By infected insects: Malaria, Rocky Mountain spotted fever, plague, etc. F. Diseases resulting from infection of wounds and abrasions: Anthrax, gas gangrene, etc. Part III, Tuberculosis. Part IV, The venereal diseases. Part V, Communicable diseases and the community: Home care, etc. Appendices: Lists of diseases. Those not discussed in text. New York State Department of Health requirements. Precaution techniques for hospitals. Nursing procedures, and plan. Glossary. Index.

Note: This book, which is intended for use as a textbook in nurses' training courses, presents the subject as it may be practiced in both hospital and home, and in addition shows the part the nurse may play in the community by aiding in the prevention and control of communicable diseases. The subject matter includes diseases suggested for study in the *Curriculum guide for schools of nursing*, and most of those listed in the *Control of communicable diseases*. Lists of references and suggested readings follow the chapters.

MACDONALD, M. GRAY

Handbook of nursing in industry. Philadelphia: W. B. Saunders Company, 1944. 226 p. illus. 20 cm. \$2.50. 2883a

Contents (abridged): History of industrial nursing in U. S. Personal educational qualifications. Organizing and equipping medical department. Factory. Office. General industrial. Suggestions for guidance. Occupational diseases. Workman's compensation. Medical records. Home visiting. The nurse in relation to personnel. Social service and welfare. Recreation. Résumé. Index.

Note: This text is intended for the just-graduated registered nurse who seeks to become an industrial nurse. The author takes this candidate through the types of places where she is likely to work, shows her the health hazards and other complications that she will encounter, and counsels her what she must do—and with almost equal emphasis, what she must not do, while employed there. The author argues for more ethical methods and greater efficiency in the nurse's own field without infringement upon fields where the nurse does not rightly belong. The writer, herself, is a widely experienced industrial nurse.

MACFEE, WILLIAM FRANK, AND MANELVA WYLIE KELLER

Textbook of surgical nursing. Fourth edition. New York: The Macmillan Company, 1942. 559 p. illus. 22 cm. \$3.50. 2884

Contents: Introduction to surgical nursing. Surgery and surgical nursing of the integumentary system; of the musculoskeletal system; of the respiratory system; of the cardiovascular system; of the hemic and lymphatic systems; of the digestive system; of the urogenital system; of the endocrine system; of the nervous system. Arrangement, organization and equipment of the operating room. Operating room sterilization. Operation room in use. Instrument passing. Index.

Note: This is designed for undergraduate students of nursing, and aims to provide them with a concise but adequate knowledge of surgical diseases as well as a knowledge of nursing care for each. In this edition, newer subjects such as the use of sulfonamide drugs in infection, blood plasma, and the retained suction tube in certain gastric and intestinal conditions have been added. Other minor changes have been effected to incorporate the newer nomenclature and make the plan of study coincide more closely with that recommended in the Curriculum guide of the National League of Nursing Education. Each chapter concludes with a list of questions for review.

MANHATTAN EYE, EAR, AND THROAT HOSPITAL

Nursing in diseases of the ear, nose, and throat. Seventh edition. Edited by David H. Webster and others. Philadelphia: W. B. Saunders Company, 1942. 313 p. illus. 20 cm. \$2.50. 2885

Contents (abridged): I, The eye: Anatomy and physiology. Diseases. Common remedies used in treatments. Eversion of lids. Retractors. Drops, solutions, ointments, and salves. Contagious diseases. The nurse's duties at operations. Postoperative care. Instruments and appliances. Orthoptic training. II, The ear: Anatomy and physiology. Examination: general methods and instruments commonly employed. Diseases of the auricle and external auditory canal. Diseases of the middle ear. Diseases of the internal ear. III, The nose: Anatomy of the nose and paranasal sinuses. Diseases. IV, The pharynx and larynx: Anatomic description of the pharynx. Diseases of the pharynx. The larynx. V, General: Clinical pathology in ophthalmology and otorhinolaryngology. Vitamins. Allergy. The sulfonamide drugs. Use of tuberculin in ophthalmology. Treatment of syphilis. Preparation of surgical dressings. The nurse's duties in emergencies. Management of troublesome children. The care and feeding of children. Index.

Note: A text for student nurses, based on the methods practiced at the Manhattan Eye, Ear and Throat Hospital, New York City. It covers general principles and outlines the specific duties of the nurse in the care of patients and the nursing procedures necessary. The 94 figures illustrate details of anatomy, instruments, and techniques. The seventh edition contains new material on syphilis, tuberculin, sulfa drugs, allergy, vitamins, and clinical pathology, plus revisions in the chapters on external diseases of the eye, tracheotomy, and bronchoesophagology. There are also new sections on foreign protein therapy, postoperative duties, orthoptic training, acute laryngotracheo-bronchitis, and nursing care.

MILLER, NORMAN FRITZ, AND VIRGINIA BRYANT

Gynecology and gynecologic nursing. With a chapter on the gynecology operating room, by Molly Kowal. Illustrated with 227 diagrammatic line drawings. Philadelphia: W. B. Saunders Company, 1944. 378 p. illus. \$2.75. 2886

Contents: Introduction. Anatomy and physiology. Functional disturbances. Mechanical disturbances. Pelvic infections. Benign tumors and other benign lesions of the vulva, vagina, urethra, and uterus. Malignant tumors of the vulva, vagina, and uterus. Tumors of the ovary. Pregnancy as a gynecological complication. Irradiation in gynecology. Involutional period. Gynecological nursing procedures. Index.

Note: This text was designed primarily as a text for student nurses in the United States. Its objective is to help the nurse understand the significance of diseases of the female reproductive system and to develop an attitude toward this branch of nursing that is wholesome, scientific, and social. Throughout the book, basic fundamentals are stressed, as are basic changes which lead to dysfunction. Thus, physiology and normal gland function precede consideration of such common complaints as hypermenorrhea, polymenorrhea, and amenorrhea. Similarly, the description of mechanical factors predisposing to uterine displacement, prolapse, and pelvic floor relaxation permits a clearer understanding of both occurrence and logical remedy. Of special interest is the coverage of gynecologic nursing procedures, presented in order that the reason for, as well as each step in, the procedure can be understood.

MOHR, JENNIE

The industrial nurse and the woman worker. Washington, D.C.: Government Printing Office, 1944. 47 p. 23 cm. (United States. Women's Bureau. Special bulletin no. 19) \$0.10. 2886a

Contents (abridged): The women come to the nurse. Getting tired out. Everyday good health habits. Health and safety on the job. Taking part in a health and safety program in the plant. Sources referred to in text. Additional suggested readings.

Note: A report analyzing both broadly and in detail the widening field of responsibility on the part of the industrial nurse and the vital importance of her being informed as to working conditions, actual and desirable; occupational hazards and accident prevention; plant service and food facilities; the personal problems that lower women's efficiency on the job; and other developments of the war years.

NATIONAL ORGANIZATION FOR PUBLIC HEALTH NURSING

Manual of public health nursing. Third edi-

tion. New York: The Macmillan Company, 1939. 529 p. 19 cm. \$2.75. 2887

Contents: What is public health nursing? Relationships to health and social agencies. Plan of work. Administrative responsibilities. Office administration. Education of the public health nurse. Reports and records. Family health service. The home visit. Health conferences, classes, clubs, and clinics. Standing orders. Maternity nursing service. Child health service. School nursing service. Industrial nursing service. Morbidity nursing service. Tuberculosis nursing service. Service for the control of syphilis and gonorrhea. Orthopedic nursing service. Appendix: Minimum qualifications for those appointed to positions in public health nursing. Acute communicable diseases for which care is frequently given by the public health nurse. Index.

Note: Written as a guide for the field worker in public health nursing, whether in country, small-community, state, or large-city services. It does not dictate programs, but guides the reader rather to an understanding of general underlying principles which will help her to evolve a program suitable for her community. This edition has been completely revised under the direction of a committee representing many types of public health nursing agencies. Each section has been checked by experts on the subject. Lists of references for further reading are given with each section.

NATIONAL ORGANIZATION FOR PUBLIC HEALTH NURSING

Principles and practices in public health nursing, including cost analysis. New York: The Macmillan Company, 1932. 129 p. illus. 20 cm. \$1.75. 2888

Contents: History. General principles. Personnel. Salaries. Health of staff. Supervision. Educational program of public health nursing agencies. Available working hours. Visits. Records and reports. Transportation. Contractual relations. Special studies, investigations, new and special programs. Relation to and use of other agencies. Appendix to Part I. Computing the cost of a visit: General recommendations. Description of visits. Description of "cost" of making visits. Special computations involving time. Other special computations. How to compute the cost of a visit. Suggested forms for use in calculating cost of visit. Appendix to Part II. Index.

Note: A handbook about factors of organization and administration having a bearing on the quality and cost of nursing service. It is written to guide board members, executives, and supervisors of public health nursing agencies in the determination of the cost of a visit and the maintenance of the best possible standards of nursing care.

NATIONAL ORGANIZATION FOR PUBLIC HEALTH NURSING

Survey of public health nursing; administration and practice, by the National Organization for Public Health Nursing. Katharine Tucker, general director; Hortense Hilbert, assistant director for the survey. New York: The Commonwealth Fund, 1934. 262 p. 24 cm. \$2.00. 2889

Contents: The purpose, method, and scope of the survey. Conclusions and recommendations. Organization. Personnel. Provisions for the education of nursing personnel. Working conditions. Student affiliation. Financing the service. Community relationships. The nursing program. Performance. Appendices. Index.

Note: This book reports in detail the findings of the survey conducted by the National Organization for Public Health Nursing for the purpose of learning the details of organization, administration, program, and performance, evaluated in the light of nationally accepted standards and practices. On the basis of these findings, recommendations are made for eliminating the defects and improving the quality of public health nursing.

NORLIN, ELINOR E., AND BESSIE M. DONALDSON

Everyday nursing for the everyday home. Illustrations by Mary Simas. New York: The

Macmillan Company, 1942. 306 p. illus. 22 cm. \$2.75. 2890

Contents: Nursing—what is it? What the home should know about its nursing responsibilities. Fundamental principles of nursing for maintaining health. The right to be well born and born well. Keeping a baby well and happy (first year). When the baby walks and talks (second year). The child's first schooling (second to sixth year). Life in school (beginning sixth year). The needs and desires of the teen age. Honor thy father and thy mother. A place for the aged person in his own home. Forestalling illness in the home. Making the home a place of safety. Modern scientific attitudes versus pseudo-scientific beliefs and practices. Illness always creates problems. Making a room in the home fit the needs of a sickroom. The home bed and its correct use for the sick person. Alert watchfulness for signs and symptoms. Bedside notes for the physician. Everyday care of the patient. Therapeutic measures commonly prescribed. Providing for the nutritional needs of the patient. Significance and importance of the convalescent period. When a chronic condition develops. Special devices and procedures used to obtain relief and comfort. Special nursing procedures necessary when a disease is communicable. What to do in emergencies arising in the home. Suggested readings. Glossary. Index.

Note: Written for persons without professional training. It is designed to teach them how to keep illness away from the home, what to do if illness comes, how to adapt home facilities to the situation, and how to cooperate with the physician. It distinguishes between procedures safe for the layman to carry out and those requiring professional skill.

OLSON, LYLIA MAE

Improvised equipment in the home care of the sick. Third edition. Philadelphia: W. B. Saunders Company, 1939. 264 p. illus. 17 cm. \$1.50. 2891

Contents (abridged): Appliances for sterilizing instruments. Bed cradles and supports for bed clothing. Tables and trays. Babies' beds. Baby's restraints and supports for bed clothing. Binders. Bandages and muslin supports. Crutches. Cellophane and its uses. Delivery room appliances, newspapers, and their various uses. First aid kits. Fowler's position, knee rolls, support for knees. Fireless cooker. Hot wet pack, hot fomentations, hot dressings. Hot dry pack. Inhalation apparatus. How to increase humidity. Incubator. Invalid walker. Mask for giving anesthetic. Night lights. Substitutes for woven fabrics. Postural drainage. Pressure rings. Refrigeration. Restraints. Standards for giving enemata. Support for foot drop. Support for lifting and turning bedridden patient. Surgical table. Sterilization of supplies for surgical and obstetrical use. Surgical gown, mask, and cap. Stretchers. Sitz bathtub. Splints. Tourniquet. Wheel chairs.

Note: The professional and lay nurse alike find this little book useful. It shows how to take the equipment found in the average home and adapt it or fashion it into a valuable article in the proper care of the sick. There are 419 line drawings.

O'NEILL, ANNA M.

Operating room technic. Philadelphia: F. A. Davis Company, 1943. 300 p. illus. 22 cm. \$3.50. 2892

Contents (abridged): Part I, General technic: History of surgery. Teaching program. Ward teaching program. Planning the operating suite. Operating room personnel. Duties of the nurse. Operating room apparel. Operating room technic. Preparation of patients. Positions used. Sterile draping. Sterilizing. Ligatures, sutures and drains. Anesthesia. Daily routine. Surgical nomenclature. Blood and blood chemistry. Blood transfusion. Blood plasma. Fractures. Peroral endoscopy. Part II, Operations: Instruments, sutures, surgical accessories. An alphabetical listing of over 125 operations, together with equipment required, operating room set-up, etc. Index.

Note: A manual intended to give the student nurse a better understanding and appreciation of technique and also to help allay the fear which she may have when she first comes to the operating room for her practical experience in operating room technique. Simplicity is aimed at throughout and technical terms and expressions are avoided. General information is also given regarding equipment and material necessary for the successful performance of the more common types of operations.

PILLSBURY, MARY ELIZABETH

Nursing care of communicable diseases; prophylactic technics for the prevention and con-

trol of disease, with a chapter on fungous diseases by Grace Maguire Swanner, M.D., and a brief picture of public health nursing by Mary E. Edgecomb, R.N. Science adviser, Jean Broadhurst. Sixth edition, revised. 139 figures and 3 charts. Philadelphia: J. B. Lippincott Company, 1942. 604 p. illus. 21 cm. (Lippincott's nursing manuals) \$3.00. 2893

Contents: Part I, Prevention and control of communicable diseases: The causal organism and communicable diseases. Resistance. Disease control, the part played by the nurse. Public control through national, state and local boards of health and other organizations. Prophylactic technics and nursing. Part II, The nursing care of communicable diseases: Chapters on individual diseases, arranged alphabetically. Part III, Additional information: Public health nursing. Historical review of the care of communicable diseases. References. Miscellaneous procedures. Index.

Note: As this book is primarily a textbook for nurses, and with this object in view principles are presented and reasons given for the procedures described. The subject matter conforms to the suggestions made in the *Curriculum guide for schools of nursing*. A second object of the book is to give information regarding the means and agencies in the community available for the prevention and control of communicable diseases, and to offer reasonable techniques for use in the care of the sick in the home. Among the changes made in this edition of the book are addition of new material on chemotherapy; the latest information on syphilis, poliomyelitis, bacillary dysentery, and rheumatic fever. The charts, illustrations, and references have also undergone revision.

RANDALL, MARIAN G.

Personnel policies in public health nursing; a report of current practice in a sample of official health agencies in the United States, prepared for the Committee on Personnel Practices in Official Agencies of the National Organization for Public Health Nursing. New York: The Macmillan Company, 1937. 170 p. 19 cm. \$2.00. 2894

Contents: Method, purpose, and scope of the study. Summary and recommendations. Classification of public health nursing positions on the basis of the programs of official agencies. Educational requirements. Salaries. Methods of selection of personnel. Application forms. Promotions and rating. Health examinations. Citizenship, residence, age, personality. Hours of work, vacations, leaves of absence. Retirement, pensions, and insurance. Brief history of public health nursing in official agencies. Legislation. Brief history of civil service in the United States. Extent of public health nursing under civil service. Approximate count of official agency public health nurses in each governmental unit of the states in the United States, 1936. Percent of increases during period 1931-36 in the total number of public health nurses employed by tax-supported agencies in states for which complete figures are available. Index.

Note: A report of current practices in a survey of official health agencies in the United States, as obtained from questionnaires and personal interviews, for executives and board members of public health nursing agencies.

REILLY, CATHERINE E.

Night nursing. Philadelphia: F. A. Davis Company, 1940. 156 p. illus. 22 cm. \$2.00. 2895

Contents (abridged): The difference between day and night nursing. Responsibility, visitors, and co-workers. A night nurse nursing. Routine duties of night nurses. Laboratory and X-ray routines. Maternity. Nursery, children's ward, etc., routines. Special departments. Emergencies. Medical night nursing. Surgical night nursing. Night nursing in communicable diseases. Administration of medicine in night nursing. Night records. Night nursing in the home. Private duty night nurse in the hospital. Bibliography.

Note: Night nursing is developing its own specialized, modern technique. This volume records the main features of that technique and makes available a summary of its principles and practices.

ST. MARY'S HOSPITAL, ROCHESTER, MINNESOTA

The operating room: instructions for nurses and assistants. Third edition, revised, with 155 illustrations. Philadelphia: W. B. Saunders Company, 1937. 286 p. illus. 20 cm. \$2.50. 2896

Contents: Equipment of the operating room. Outline of class work in operating-room technic. Training in the operating room. Routine schedule in the operating room. Preparation of patient for operations performed in dorsal recumbent position. Preparation of patient for operations in Trendelenburg position and the operations themselves. Preparation of patient for posterior resection operation; for operation on the kidney; for operations on the neck; for operation on the breast; for operation on thorax; for operations in the lithotomy position. Preparation of patient for neurosurgery; for operations on bones and joints. Technic of blood transfusion. Anesthesia. Miscellaneous procedures. Surgical dressing room supplies. Index.

Note: This guide in operating-room procedures is the outcome of extensive experience in teaching nurses how they can most satisfactorily help the surgeon before he operates, while he operates, and after he operates. It is a development of methods that are used in the management of surgical work performed at St. Mary's Hospital, Rochester, Minnesota, where the central thought is to get the patient well with as little loss of time as possible. This aim has been carried over to the textbook. Every procedure is presented with the fact in mind that details vary not only in hospitals but also in the technical methods of different surgeons. There are 322 illustrations. These pictures show the arrangement of the hospital, the preparation of tables, the positions of patients, the step-by-step details of technique, and the use of the various instruments in actual operations. Every instrument is pictured in a drawing, with legend underneath. For the third edition, 90 per cent of the material was rewritten in order to include new operations and other improvements in procedure and technique. Several chapters are included for the first time which is also true of a number of the illustrations.

SANDS, IRVING JESSE

Nervous and mental diseases for nurses. Fourth edition, reset. Philadelphia: W. B. Saunders Company, 1941. 354 p. illus. 20 cm. \$2.25. 2896a

Contents: Elementary neuro-anatomy. The glands of internal secretion (endocrines). Elementary medical psychology. The common neurological disorders. The nature, causes, symptoms and classification of mental disorders. The common psychogenic psychoses. The common organic psychoses. Infectious and toxic psychoses. Borderline mental diseases. The development of modern psychiatry. Mental hygiene. Psychoanalysis and psychobiology. Special nursing procedures. Index.

Note: This text aims to provide a concise presentation of the basic facts and principles of management of the various neuro-psychiatric conditions that the average nurse may meet in the nursing of neurological and mental patients. It is particularly valuable for use in general hospitals. A bibliography is included at the end of each chapter. For the fourth edition the chapters on elementary medical psychology, psychoanalysis and special nursing procedures were revised and new material included. The section on multiple neuritis was completely rewritten. References throughout were revised and expanded.

SELLEW, GLADYS

Nursing of children. Fifth edition, revised and reset. Philadelphia: W. B. Saunders Company, 1942. 579 p. illus. 20 cm. \$2.75. 2897

Contents (abridged): Unit I, Orientation to the nursing of children and to the children's division or hospital. Unit II, Growth and development of the child: Physical characteristics and general development of the infant from birth to two years. The child from two to six years—early childhood. Later childhood; six to twelve years—the school child. The adolescent. Unit III, General nursing care of children: Infant. Young child. Older child. Adolescence. Admission of child to hospital. Unit IV, Nursing in diseases of infancy and childhood: Abnormal conditions and diseases of the newborn. Disorders of nutrition. Gastrointestinal tract. Diseases of the upper and lower respiratory tract. Heart and circulatory system. Genito-urinary system and the glands. Communicable diseases. Disturbances of the nervous system. Disorders of the eye, skin and hair. Unit V, Nutrition of infants and children: Breast feeding. Artificial feeding. Ways of feeding the infant. The milk laboratory. The economic prob-

lems of maintaining good nutrition in infancy and childhood. Index.

Note: This is an elementary text on children, their diseases, and the nursing care of those diseases. It is written from the point of view of the well child with modification for the care of the sick child. The difference between the nursing care of the adult and of the child is indicated. The nursing care of each disease and condition is discussed. At the end of each chapter are questions, problems, and bibliographies. In the fifth edition appear new normative summaries of the infant and young child, attributes of the normal infant, and play materials for children. New chapters were included on the adolescent, general nursing care of children, diseases of the glands, and the economic problems of maintaining good nutrition in infancy and childhood. The questions and problems throughout the book were revised and many new ones included. There were included new lists of books, play materials, etc. for the various ages. New bibliographies were included. Modifications of nursing care in the home were introduced. The content was reorganized in conformity with the outline of the *Curriculum guide for schools of nursing* (published by National League of Nursing Education, 1790 Broadway, New York 19, New York). Much of the material on detailed procedures was omitted. The whole book was placed on a more advanced level.

SHEPARD, KATHARINE, AND CHARLES H. LAWRENCE

Textbook of attendant nursing. Second edition. New York: The Macmillan Company, 1942. 419 p. illus. (part col.) 22 cm. \$3.00. 2899

Contents (abridged): Elementary anatomy and physiology and diseases. Elementary dietetics and nutrition. Nursing procedure. Miscellaneous. Appendix. Index.

Note: A simple, concise text designed to train non-professional hospital attendants and provide them with sufficient knowledge of medicine, nursing arts, and hygiene to enable them to perform their duties intelligently. In this edition, the more recent developments in the field of nutrition and therapeutics have been added. The arrangement of the course of instruction as given by the authors at the Household Nursing Association of Boston will be found in the appendix.

STEELE, KATHARINE McLEAN

Psychiatric nursing. Philadelphia: F. A. Davis Company, 1941. 390 p. illus. 22 cm. \$3.50. 2900

Contents (abridged): Unit i, Introduction to psychiatric nursing: Orientation; mental hygiene and prevention; disturbance of mind function; symbolism in sanity and in mental derangement. Unit ii, Practical procedures in psychiatric nursing: Psychiatric nursing; care of the mental patient in the home; care of the mental patient in the general hospital; the mental patient in the psychiatric hospital; specific procedures in psychiatric nursing; hydrotherapy; occupational therapy; case study. Unit iii, Specific mental disturbances: Psychoses with mental deficiency; psychopathic personality; psychoneuroses; organic psychoses; toxic psychoses; affective disorders; involuntional melancholia; paranoia and paranoid types; schizophrenia (dementia precox); treatment of schizophrenia by hypoglycemic shocks produced by insulin, by metrazol and by electricity. Unit iv, Jurisprudence and public health work: The legal aspects of psychiatric nursing in public health work. Unit v, Historical background: Psychiatry and its heritage; the psychiatric institution and its organization. Pioneers in mental hygiene. Appendix. Bibliography. Index.

Note: An approach with dignity, kindness, sympathy, and a sense of naturalness to the problems of nursing care of patients in psychiatric ward, mental hospital, and in the community.

VAN BLARCOM, CAROLYN CONANT

Obstetrical nursing; a text-book on the nursing care of the expectant mother, the woman in labor, the young mother and her baby. Third edition. Revised with the assistance of Calvina MacDonald, Lottie M. Morrison, Lilla J. Napier, Anne A. Stevens, Chelly Wasserberg. With 251 illustrations and 12 charts. New York: The Macmillan Company, 1933. 651 p. illus. 22 cm. \$3.50. 2901

Contents: Anatomy of the female pelvis and generative organs. Physiology. Development of the ovum, embryo, fetus, placenta, cord and membranes. Growth and development of the fetus. Signs, symptoms, and physiology of pregnancy. Prenatal care. Mental hygiene of the expectant mother. Complications and accidents of pregnancy. Presentation and position of the fetus. Symptoms, course, and mechanism of normal labor. The nurse's duties during labor. Obstetrical operations and complicated labors. Physiology of the puerperium. Nursing care during the normal puerperium. The nursing mother. Nutrition of the mother and her baby. Complications of the puerperium. Community facilities for maternity care. Preparation of room, dressings and equipment for home delivery. Some simple, homely needs of the maternity patients. Diversional therapy for maternity patients. Characteristics and development of the average newborn baby. Nursing care of the newborn baby. Common disorders and abnormalities of early infancy. A final word. Glossary. Index.

Note: A concise but broad presentation of obstetrics and the nursing care of mother and baby, for undergraduate and graduate nurses. It is the author's aim to present a survey of the various methods of management of obstetric cases with emphasis on basic principles, to orient the nurse to the varying types of care required by different physicians, and to show her how to apply her knowledge in home cases as well as hospital cases. In this edition, two trends are reflected: the simplification of procedures; and the increased recognition of the relation of mental hygiene to obstetrical patients. There is a tabular summary with each chapter.

WALES, MARGUERITE

The public health nurse in action. With a foreword by Lillian D. Wald. New York: The Macmillan Company, 1941. 437 p. illus. 22 cm. \$3.50. 2902

Contents: Better care for mothers and babies. Infant and preschool health. The school child. Communicable disease. Tuberculosis as a problem in a generalized nursing program. Orthopedic nursing. The public health nurse in the control of syphilis and gonorrhea. The chronically ill patient. Industrial nursing service. The public health nurse marches on. Appendix. Index.

Note: An unusual presentation of public health principles through the description of a public health nurse's activities, day by day, in various types of situations. The principles are set off as special notes running through the informal case histories. This is written primarily for field workers in public health, but is also suitable as a text for the teaching of student nurses.

WOODWARD, HENRY LYNDE, AND BERNICE GARDNER

Obstetric management and nursing, with a section on home deliveries by William P. Gillespie, also with a section on diseases of the newly born by Harold F. Downing. 358 illustrations. Second edition. Philadelphia: F. A. Davis Company, 1940. 752 p. illus. 22 cm. \$3.50. 2903

Contents (abridged): Unit i, Background of obstetrical nursing: Preparation and qualifications for obstetrical nursing; significance of the care of the mother and the newly born. Unit ii, Anatomy and physiology of the female generative organs: Development of the ovum and embryo. Unit iii, Normal pregnancy and prenatal care: Changes in the maternal organism; symptoms, signs and diagnosis of pregnancy; prenatal care; diet in pregnancy; mental hygiene of the pregnant woman; minor disorders of pregnancy. Unit iv, Normal labor, its management and nursing care: Management of normal labor; stage of dilation, of expulsion, placental stage. Care during normal puerperium; care of normal newly-born infant. Unit v, Abnormalities of pregnancy and nursing care: Toxemias and hemorrhages of pregnancy and their nursing care. Uterine abnormalities. Unit vi, Abnormalities and complications of labor. Unit vii, Obstetric injuries and operative obstetrics. Unit viii, Puerperal complications. Unit ix, Abnormal infant and its care. Unit x, Home delivery. Glossary to each unit. Index.

Note: The purpose of this textbook for nurses is (1) to supply the student with what she should know about obstetrical nursing; (2) to add to her general knowledge pertaining to obstetrical management, the part the obstetrician plays and her duties in assisting him, and (3) to provide for the needs of the student who would specialize as an obstetrical nurse or supervisor of obstetrics. The illustrations have been made as full and self-explanatory as possible and are arranged in a serial manner.

Features of the book are "continued study units," "questions and investigations," and "correlation with the next chapter." In this second edition there are changes in procedures to conform to modern practice in the care of the normal mother and child, also in the chapters on toxemia, hemorrhage, and sepsis. The chapter on abnormalities of the infant has been rewritten. More than 40 new photographs have been added.

ZABRISKIE, LOUISE, AND NICHOLSON J. EAST-MAN

Nurses handbook of obstetrics. Seventh edition, completely revised and reset. 376 illustrations including 15 subjects in color. Philadelphia: J. B. Lippincott Company, 1943. 714 p. illus. (part col.) 21 cm. \$3.25. 2904

Contents (abridged): Unit I, Human reproduction: Aims of obstetric nursing. Anatomy, physiology in relation to obstetrics. The fetus. Presentations and positions. II, Nursing in pregnancy: Signs and symptoms. Prenatal care. Complications. Mental hy-

giene. III, Nursing during labor and delivery: Anesthesia. Complications. Operative obstetrics. IV, Nursing during the puerperium: Normal. Complications. V, The neonatal period: Nursing care of the new baby, of the premature baby. Disorders of newborn. After-care. VI, Additional maternity information: History of obstetrics. Teaching aids. Key for self-evaluation of nursing attainments. Glossary. Index.

Note: The authors of this textbook state that its purpose is to provide teachers and pupil nurses with a concise, present-day, practical picture of the underlying anatomic and physiologic facts and the approved routine principles and practices of obstetric nursing, both in hospitals and in homes. Emphasis has also been placed on public health nursing in obstetrics. In this edition the association of an obstetrician as co-author has aided in integrating the viewpoints of nurse and physician. New illustrations have been added, and those depicting pigmentary alterations are in color. The subject matter on anesthesia and analgesia has been revised in accordance with modern concepts, and the chapter dealing with the conduct of normal labor has been rewritten, with particular attention to the nurse's duties in each stage. A separate chapter has been added giving a detailed program for parents' classes to be held in the out-patient departments of hospitals. The "Student self-examination questions" have undergone revision, as has the bibliography.

HOSPITALS

AMERICAN COLLEGE OF SURGEONS

Manual of hospital standardization. History, development, and progress of hospital standardization. Detailed explanation of the minimum requirements. Chicago: American College of Surgeons, 1942. 112 p. 25 cm. 2905

Contents (abridged): History, development, and progress of hospital standardization. Detailed explanation of minimum requirements. Clauses 1 to v of the minimum standards for hospitals. Additional departments and services. Standardization of the small hospital. Tables. Minimum standards. Addenda. Bibliography.

Note: This pamphlet summarizes the rules and principles of hospital standardization as laid down by the American College of Surgeons in order to promote better hospitalization. It covers details of facilities, personnel, and procedures in diagnostic, therapeutic, and laboratory work in the treatment of all types of diseases and disorders. Requirements and arrangement of medical records, analysis of clinical work, function of medical staff conferences, autopsies, and general supervision are among the topics discussed. Organization charts and sample record forms are included.

BACHMEYER, ARTHUR CHARLES, AND GERHARD HARTMAN, EDITORS

The hospital in modern society. New York: The Commonwealth Fund, 1943. 768 p. 24 cm. \$5.00. 2906

Contents: Historical review. Hospital service. The trustee. Hospital organization and management. The hospital administrator. Medical staff organization and relationships. Nursing education and nursing service. Operating room. Obstetrical service. X-ray service. Out-patient department. Special services. Medical social service. Clinical and pathological laboratories. Pharmacy. Medical records. Admitting and discharge. Financial control. Legal aspects. Hospital construction. Plant maintenance. Purchasing. Food service. Housekeeping. Laundry management and linen control. Personnel relations. Public relations. Group hospital and health insurance. Public health. Index of authors.

Note: The best and most stimulating thought of recognized leaders with regard to the social function of the hospital, administrative relationships, and other problems has been brought together in this volume. The various readings were selected, not for the information they contain or for their conformity to predetermined views, but for their judicious analysis and their contribution to better understanding of the subjects discussed. Hospital administrators will find this a valuable reference book; it is designed also for use as a text in training courses.

BAY, EMMET BLACKBURN

Medical administration of teaching hospitals. Chicago: The University of Chicago Press, 1931. 136 p. 21 cm. (The Medical economics series) \$2.00. 2907

Contents: Introduction. Administration of some external relationships. Some internal problems of medical co-ordination. The mixture of functions in institutional management. What is administration? Appendixes.

Note: The investigation which Dr. Bay reports in this volume is one of a group of studies made by Michael M. Davis through a grant made by the Rockefeller Foundation. Dr. Bay has selected for his study nineteen hospitals and clinics, nearly all of which are associated with medical schools. He has listed a series of necessary tasks or functions which, in behalf of the patient or of medical education, are performed in all these institutions, and has made a comparative functional analysis, indicating how, by whom, and in what relationships these various functions are carried out in each place.

CHADWICK, HENRY DEXTER, AND JAMES H. RITCHIE

Tuberculosis sanatorium planning. Second edition. New York: National Tuberculosis Association, 1939. 46 p. illus. 23 cm. Paper, \$0.50. 2907a

Contents: Site requirements. Determining the bed requirements. Auxiliary rooms and facilities. Other architectural requirements. Administration section. Medical and surgical. Service facilities. Personnel quarters. Utilities.

Note: A pamphlet outlining the various details to be considered in the design and construction of a tuberculosis sanatorium, for hospital and public health officials and architects specializing in this type of structure. Floor plans, types of building materials, special plumbing features, service facilities, operating room design, electrical systems, and other details are briefly presented, together with recommendations. The second edition incorporates the advances in sanatorium design from 1929 to 1939.

CRILE, GEORGE, AND FRANKLIN L. SHIVELY, JR.

2nd, 1946, \$3.50
The hospital care of the surgical patient, a surgeon's handbook. Foreword by Evarts A. Graham. Springfield, Ill.: Charles C. Thomas, 1943. 184 p. illus. 21 cm. \$2.50. 2908

Contents: Physiological principles related to the care of the surgical patient. Management of surgical complications. Technique of common hospital procedures. Relationships of the house officer. Drugs, doses, data. Diet for patients subjected to gastric surgery. Bibliography. Index.

Note: Presenting useful information for house officers desirous of quick, accurate, practical knowledge of the problems, procedures, and complications which arise in the hospital management of the general surgical patient. Clinical, physiological, and technical principles for preoperative and postoperative care of the surgical patient are established.

CURRAN, JEAN ALONZO

Internships and residencies. New York: The Commonwealth Fund, 1938. 522 p. 29 cm. \$2.50. 2909

Contents: Introduction. Glossary. Resources for intern and graduate education in New York City. The history of internships and residencies. The relation of intern and graduate education to practice: A survey of 1,904 practicing physicians, graduates of New York City medical colleges. Geographic distribution of the medical colleges supplying house staffs to New York City hospitals. Factors contributing to house staff efficiency. Hospital libraries and their use. Preparation and training of the intern. Organization of the internship program and capacity of the hospital in relation to quality of the internship. Residencies and fellowships in New York City hospitals. Summary of findings. Supplementary tables. Internships and residencies in hospitals not approved by the American Medical Association. Comments on their internships by practicing physicians who graduated from the five New York City medical colleges. Forms for recording interns' services and rating, conditions and procedures to be considered in intern training. Opinions of directors of service and attending staff members regarding the value of residencies. Descriptions of internships and residencies in selected hospital situations. An intern's day. Bibliography. Index.

Note: Aided by a grant from the Commonwealth Fund, the five medical schools of New York City and the New York Academy of Medicine set up the New York Committee on the Study of Hospital Internships and Residencies. There were 1760 internships and residencies approved by the American Medical Association in the 77 hospitals participating in the study. Attention was directed to the nature of the internships and residencies,

their correlation with previous instruction, the value of the experience to the physician in his later practice, the place of internships in the entire scheme of medical education, and to many other phases of the subject.

MACEachern, MALCOLM THOMAS

Hospital organization and management. Chicago: Physicians' Record Co., 1940. 1000 p. illus. 24 cm. \$7.50. 2910

Contents (abridged): History of hospitals. The hospital of the twentieth century. Promoting and building the new hospital. Organization of the hospital. Admitting department. Medical staff. Clinical departments. Adjunct diagnostic and therapeutic facilities. Nursing department. Dietary department. Outpatient department. Medical social service department. Medical records department. Business department. Service departments. Ethics. Public education. Standing orders. Index. Vita.

Note: A comprehensive guide to hospital administration. The work is liberally illustrated with charts and diagrams, including specimens of printed forms.

PONTON, THOMAS RITCHIE

The medical staff in the hospital. Chicago: Physicians' Record Company, 1939. 288 p. illus. 25 cm. \$2.50. 2910a

Contents (abridged): The governing body and the medical staff. The physician in the hospital. Selection and appointment of the medical staff. Organization of the medical staff. By-laws of the medical staff. Meetings of the medical staff. The medical staff and medical records. Professional accounting. Resident medical staff. Addenda. Bibliography. Index.

Note: A practical guide for hospital administrative officers. It reflects good American practice at the time of writing. Many of the illustrations show sample administrative forms.

ROREM, CLARENCE RUFUS

Blue cross hospital service plans; description and appraisal of a nation-wide program for the distribution of adequate hospital care on a non-profit, non-political basis. Second edition. Chicago: Hospital Service Plan Commission, American Hospital Association, 1944. 88 p. 22 cm. Paper, \$0.50. 2910b

Contents: Introduction. Origins of blue cross plans. Role of American Hospital Association. Approval program and standards. Legal aspects of blue cross plans. Community sponsorship and

control. Subscription rates. Benefits of subscriber contracts. Member hospital contracts. Public relations and enrollment. Organization, accounting and statistics. Medical service plans. Summary and conclusions.

Note: The purpose of this brochure is to summarize the historical, economic, and professional aspects of hospital service plans for such readers as the following: administrators, employees, and trustees of blue cross plans, superintendents and trustees of member hospitals, persons interested in establishing blue cross plans in their own communities, and students and administrators of health and welfare services. It is written by the director of the Hospital Service Plan Commission, American Hospital Association. Its first edition appeared in 1940 under the title *Non-profit hospital service plans*.

SOUTHMAYD, HENRY J., AND GEDDES SMITH

Small community hospitals. New York: The Commonwealth Fund, 1944. 182 p. illus. 21 cm. \$2.00. 2911

Contents: Introductory. The rural hospital as a community institution. The rural hospital and the medical team. Organization and administration. Hospital finances. The hospital plant. The hospital and the countryside. Appendix.

Note: Since 1925 the Commonwealth Fund has had a hand in the organization and building of 14 community hospitals serving rural districts in twelve states of the United States, and has followed their subsequent history in great detail. Out of this experience, members of its staff have written a handbook setting forth the objectives, policies, and methods of the small community hospital, and including concrete and practical information on staff organization and relationships, educational services, administration, finances and fiscal control, and the general principles of hospital design. Prepared especially for the use of board members; useful also to hospital administrators.

UNITED STATES. CHILDREN'S BUREAU

Standards and recommendation for hospital care of newborn infants, full-term and pre-mature. Washington, D.C.: Government Printing Office, 1943. 14 p. 22 cm. (United States. Children's Bureau. Bureau publication no. 292) Paper, \$0.05. 2911a

Contents (abridged): Delivery-room care. Nursery care: Environment. Observation and examination. Special measures to prevent infection. General care. Feeding. Cleaning nursery unit. Records. Preparation for discharge.

Note: A statement of recognized hospital standards, with recommendations on their maintenance under wartime conditions of overcrowding and shortage of personnel.

FIRST AID

COLE, WARREN HENRY, AND CHARLES B. PUESTOW, EDITORS

First aid, surgical and medical. Illustrations by Carl Linden in collaboration with Tom Jones. Second edition. New York: D. Appleton-Century Company, Incorporated, 1943. 351 (i.e. 393) p. illus. (part col.) 22 cm. \$3.00. 2912

Contents: Precautions and limitations in first aid work. General principles of first aid; common conditions requiring first aid; material needed. Anatomy and physiology. Bandaging. Wounds. Shock: blood transfusions. Injuries to large blood vessels. Burns; frost bites. Transportation of the injured. Fractures, dislocations and sprains. Compound fractures; compound dislocations. Gas and bomb raids. Respiratory emergencies. Injuries of the chest. Abdominal emergencies. Emergencies of the genito-urinary tract. Wounds of the mouth, face and neck. Injuries of the scalp, skull, spine and nervous system. Medical emergencies. The prostrate patient. Civilian versus military casualties. Miscellaneous conditions frequently requiring first aid care. The feet.

Note: The authors were assisted by 17 collaborating authors. Written primarily for first-year medical students, the text is sufficiently scientific and practical to be of value to physicians, teachers of first aid, and graduate nurses and for advanced training to military personnel. While the greater part of the text considers emergencies created by war, emergencies encountered in civilian life, many of which are medical, are included. Emphasis is placed upon precautions; furthermore, the first aid attendant is urged at all times to consider his limitations lest he do more harm than good. Attempt is made to furnish sufficient physiologic and clinical data for the attendant to understand the reasons for certain types of therapy in first aid treatment. In the discussion of some of the more important subjects, principles in definitive treatment are given so that the attendant may better correlate the types of treatment. However, whenever this is done the authors are careful to specify the types of treatment that are to be carried out only by physicians; differentiation between first aid and definitive treatment is therefore carefully pointed out.

FLAGG, PALUEL JOSEPH

The art of resuscitation. New York: Reinhold Publishing Corporation, 1944. 453 p. illus. 23 cm. \$5.00. 2913

Contents (abridged): Definition of resuscitation. Background. Experimental physiology. Clinical medicine. Indications for treatment. Methods of resuscitation. Transportation of the unconscious patient. Asphyxia neonatorum. Asphyxia from high altitudes. Asphyxia from carbon monoxide poisoning. Asphyxia in anaesthesia. Asphyxia in poliomyelitis. Asphyxia in electrocution. Asphyxia from gases encountered in fire-fighting. Asphyxia from mechanical obstruction of the respiration. Asphyxia from clinical disease. Asphyxia as a problem of organized medicine. Asphyxia as a problem of the Federal government. Asphyxia as an army problem. Asphyxial accidents in the United States Navy. Asphyxia as a problem of civilian defense. Asphyxia in dentistry. Asphyxia as an economic problem of public health. The coordination of gas therapy. Appendix. Bibliography. Index.

Note: A practical, comprehensive book on asphyxia and its prevention designed not only for nurses, doctors, first aid-workers, but the general public as well. An attempt has been made to correlate existing data on the subject. Non-technical in presentation.

RED CROSS. U.S. AMERICAN NATIONAL RED CROSS

American Red Cross first aid textbook. Revised. Philadelphia: The Blakiston Company, 1940. 256 p. illus. 19 cm. Paper, \$0.60; cloth, \$1.00. 2914

Contents: First aid—its need and its use. Anatomy and physiology of the body. Dressings and bandages. Wounds. Shock. Wounds requiring additional consideration. Artificial respiration. Injuries to bones, joints and muscles. Injuries due to heat and cold. Poisons. Unconsciousness. Common emergencies. Transportation. First aid kits. Index.

Note: Presents in brief, simple, and practical form a thorough discussion of methods sufficient to qualify a layman to administer such emergency treatment as is necessary before the arrival of the doctor. It is the official Red Cross textbook on first aid.

UNITED STATES. OFFICE OF CIVILIAN DEFENSE

A technical manual for the Rescue Service. Prepared by the Rescue Section, Medical Division, of the United States Office of Civilian Defense. Washington, D.C.: Government Printing Office, 1943. 142 p. illus. 23 cm. (United States. Office of Civilian Defense. OCD publication 2216) Paper, \$0.20. 2914a

Contents: Introduction. Part I, Rescue Service organization: The United States Citizens Defense Corps. Organization of the Rescue Service. Functions and operation of the Rescue Service. Part II, Rescue of equipment: Recommended equipment. Respiratory protective equipment. Lighting, gas detection, and ventilating equipment. Survey of respiratory protective and explosion preventive equipment. Special working equipment. Part III, Rescue squad operations and control: Action on air raid alarms. Operation and leadership at incidents. Part IV, Rescue technique: Damage to buildings and other facilities. Rescue by stages and location of casualties. Rescue by clearance of debris. Trenching and tunneling. Shoring and demolition. Use of ladders, ropes, and lashings. Rescue in the presence of common gases. Rescue in the presence of war gas. Part V, Rescue Service training: Organization of training. Pilot, regional, and state schools and local training. Individual training. Squad training. Combined and interservice training. References. Appendixes.

Note: This manual, which does not claim to be exhaustive, describes the important technical apparatus and operations which are necessary in rescue work. The publication was prepared for war use, but in peacetime it may be of value in the face of industrial and other accidents and natural disasters.

PERSONAL HYGIENE

ACKERMAN, LLOYD

Health and hygiene, a comprehensive study of disease prevention and health promotion. Lancaster, Pa.: The Jaques Cattell Press, 1943. 895 p. illus. 24 cm. (Humanizing science series) \$5.00. 2915

Contents: Introductory. The evolution of health concepts and health practices. Parasitism and hypersensitiveness. Hygiene of the mouth. The hygiene of nutrition. Hygiene of the emotions and the intellect. The hygiene of mating. Exogenous poisons. Physical agents and their relations to health. Index.

Note: The author endeavors to raise the general level of health instruction, and to provide a book that will appeal to mature and inquiring minds, non-medical as well as medical. The ways of achieving and maintaining health are discussed, with attention to recent developments and discoveries. Both sides of controversial questions are presented, and practices which are recommended are provided with factual support.

EMERSON, WILLIAM ROBIE PATTEN

Health for the having; a handbook for physical fitness. New York: The Macmillan Company, 1944. 146 p. illus. 19 cm. \$1.75. 2917

Contents: How well are you? What is a physical fitness examination? Is your weight right? How do you know? Underweight—its correction. Overweight—its correction. Is your blood pressure rising? How good are your health habits? Are you starving amidst plenty? Your day: budget your time. Health questions and their answers. Does our school system make for health? How long do you expect to live? Save life: your own. Appendix: Tables of 100 calorie portions; tables of height and weight; individual weight charts. Index.

Note: A concise manual in non-technical language, outlining the regimen needed for positive health, with emphasis on the elimination of faulty health habits. Written for the layman, and for physicians, teachers, health educators and others conducting physical fitness programs.

ETHEREDGE, MAUDE LEE

Health facts for college students, a textbook of individual and community health. With a foreword by Ray Lyman Wilbur. Fourth edition, revised and reset. Philadelphia: W. B. Saunders Company, 1942. 379 p. illus. 20 cm. \$2.25. 2918

Contents (abridged): Life's battle for health. Why health is essential. Food and its relation to health and teeth. Mental health. Sleep, rest and fatigue. Nervous, circulatory, bony structure and muscular systems. Work, leisure and play. Friendship, love, marriage, home and parenthood. Reproduction. Vision and hearing. Respiratory system. Skin. Endocrine glands. Allergy. Drinking, smoking and narcotics. Cancer. Bacteria, viruses and immunity. Communicable venereal diseases. Diseases conveyed by insects. Clothing, heating and ventilation. Supervision of health. First aid. Index.

Note: This text is especially designed for use in college freshman personal hygiene courses. It is aimed at helping the student to derive the utmost in personal development—both physical and mental. Fuel requirements of the body, vitamins, the prevention of nutritional disorders, food and their values are fully explained. Common illnesses are discussed, causes and prevention. An entire chapter is devoted to mental health. The parts of bacteria in disease, immunity, venereal diseases, and general community health problems are also covered. In the fourth edition there is an increase in the social emphasis of the subjects discussed with new material applying to the health needs in time of war. The chapter on first aid has also been revised and expanded.

FISHER, IRVING, AND HAVEN EMMERSON

How to live; rules for healthful living based on modern science. Twentieth edition, completely revised and rewritten. New York: Funk & Wagnalls Company, 1938. 422 p. illus. 20 cm. \$2.50. 2919

Contents: The functions of the skin. Clothing. Housing. Outdoor living. Bathing. Eating by instinct. Dietetic science. Further comments on diet. Poisons. Mouth hygiene. Colon hygiene. Infection. Work hygiene. Exercise and recreation. Relaxation and sleep. Serenity and poise. Individual hygiene in general. Other fields of hygiene. The possibilities of hygiene.

Note: A practical handbook, written in simple, non-technical language for the general public, giving the findings of authorities on how to live healthfully in relation to food, drink, clothing, housing, exercise, work, play, rest, sleep, and other related aspects of human life. This edition includes 32 articles dealing with such subjects as vitamins, alcohol, exercise, overweight, the common cold, cancer, etc., each written by a recognized authority.

KIRKPATRICK, THOMAS BRUCE, AND ALFRED F. HUETTNER

Fundamentals of health, its development and conservation. Revised edition. With the collaboration of Clara Mae Taylor. Boston: Ginn and Company, 1941. 595 p. illus. 21 cm. \$3.00. 2920

Contents: The evolution of man. The development of the individual. Genetics and human inheritance. Foods and digestion. The functions of food. The selection of foods. The muscular system and muscular activity. The heart and circulation. Respiration. Excretion. Nervous and emotional adjustments. Internal secretions. Sex and reproduction. Immunity and immunization. The public health. Appendixes: Nutritive values of common portions of foods. Selected readings. Glossary. Index.

Note: A textbook for college classes. The revised edition contains new material on nutrition, endocrines, the hygiene of maturity, genetics, and nervous and emotional adjustments.

KRUEGER, WALTER WILLIAM

The fundamentals of personal hygiene; including their practical application to healthful living. Fourth edition, revised. Philadelphia: W. B. Saunders Company, 1944. 315 p. illus. 20 cm. \$1.75. 2921

Contents: Introduction. Nutritional needs of body. Hygienic aspects of nutrition. Relation of body weight to health. Hygiene of mouth and throat. Value of physical activity. Posture. Feet and their care. Care of skin. Clothing and health. Relation of air to health. Sunlight and health. Mental health. Recreation and rest. Hygienic aspects of sex. Health fads, fancies and follies. Disease prevention. Index.

Note: This is an elementary text designed to awaken in the young student an appreciation of good health habits and their contribution to successful living. Examples from everyday life are brought into the discussion in order to show the student what the author is seeking to impress. Teaching aids are included in the form of questions for class discussion and topics for oral or written reports. These aids, along with bibliographies, are placed at the ends of chapters. For the fourth edition, the author found it necessary to make a comprehensive revision. Some rearrangements have been made and changes will be noted in the chapters dealing with nutrition, the value of physical activity, posture and its relation to health, and correct use of leisure time. The chapter on sex has been rewritten and a discussion added on

the biology of reproduction. New facts on drugs have been incorporated as a means of sharpening the student's judgment of health information.

MEREDITH, FLORENCE (LYNDON)

613
Hygiene; a textbook for college students on physical and mental health from personal and public aspects. Foreword by Frank Howard Lahey. Third edition. Philadelphia: The Blakiston Company, 1941. 822 p. illus. (part col.) 23 cm. \$3.50. 2922

Contents (abridged): Part I. Introduction. Part II. The body. Part III. Types of bodily disorder. Part IV. Effective use of medical science. Part V. Health considerations. Part VI. Mental health. Appendix. Bibliography. Index.

Note: Presents material for a year's course in the personal and public aspects of physical and mental health. The theme which dominates its organization is—What health situations exist in the life of individuals and peoples, what health objectives arise from them, and what action is scientifically appropriate on the part of the college student? Anatomy and physiology are not treated at length.

SCOTT, KATE FRANCES

A college course in hygiene. Illustrations by Dr. William Dunlop Sargent, Margaret J. Sanders. New York: The Macmillan Company, 1939. 202 p. illus. 26 cm. \$2.50. 2923

Contents: Hygiene as it concerns the individual: The body's biological nature. The body's equipment for motion. The body's equipment for energy production (The sources. The chemical laboratory. The transportation systems. The finished product and by-products). The body's equipment for temperature control (The "air-conditioning" system. The insulating walls. The air ducts). The body's equipment for acquiring information. The body's equipment for coordination. Hygiene as it concerns the group: The human being's equipment for group living. The human being as part of the race. The group and its physical environment. The group's control of the sources of supply. The group and the communicable diseases. The group's concern with special health needs of its members. The group's agencies for protecting health. Workbook.

Note: This practical text for the beginning course in hygiene for women is adaptable to courses of varying lengths and to the special problems of different colleges and different groups of students. The author's professional knowledge of medicine and her long experience in teaching hygiene are evident in the sensible, informative treatment of such matters as sex and mental hygiene and of common ailments such as colds, digestive disorders, foot trouble, and headaches. A feature is the workbook section at the end. Blanks are provided on which the student can make a health inventory and keep hygiene records during the year.

SMILEY, DEAN FRANKLIN, AND ADRIAN GORDON GOULD

613
A college textbook of hygiene. Third edition. New York: The Macmillan Company, 1940. 539 p. illus. (part col.) 22 cm. \$2.50. 2923a

Contents (abridged): Health and college education. Factors that influence health, infection and resistance. Immunity and allergy. Specific inoculations against specific diseases. Combating nasal obstruction and the acute respiratory infections. Science conquering tuberculosis. The newer knowledge of ventilation. The requirements of an adequate diet. The prevention of digestive disturbances. Healthy teeth and gums. Nervousness and its prevention. Nervous system stimulants and narcotics. Sleep and relaxation. Mental health. Recreation and play. The relation of the endocrine glands to growth and health. Posture and health. The effects of exercise upon the body. The choice of exercise. The hygiene of the skin and urinary tract. The battle against circulatory disease and cancer. The hygiene of the developing genital system. The hygiene of sexual intercourse and reproduction. Social hygiene problems. Safeguarding our sight and hearing. Special health problems of after college years. The control of occupational health hazards. The maintenance of health in a

large city. Modern medicine versus nostrums and quackery. You and your doctor. Proprietary remedies versus public health. Index.

Note: This textbook is divided into sections which deal in turn with each of the various bodily systems, and with their structure, function, and hygiene. Each section is covered by a brief introductory chapter giving the essential points of anatomy and physiology. The work is fully illustrated and there are references for more detailed reading plus a glossary of technical terms. In the third edition community and health problems are given additional treatment and there are new chapters on pneumonia, air conditioning and ventilation, appendicitis, medical services, and related topics.

SMILEY, DEAN FRANKLIN, AND ADRIAN GORDON GOULD

613
Personal and community hygiene. Third edition of the combined volume of A college textbook of hygiene and community hygiene. New York: The Macmillan Company, 1941. 932 p. illus. (part col.) 22 cm. \$2.50. 2924

Contents: Introductory: How community hygiene has developed. Environmental health hazards and their control: The commonest source of infection for man. Animals as sources of infection for man. Insects and disease. The relation of the weather and outdoor air to health. Indoor air and health. Ventilation. The sanitary significance of soil. Water and disease. The provision of a sanitary water supply. Housing and health. Food and health. Occupational health hazards. The community attack on specific diseases and disorders: Community problems in mental hygiene. Community problems in sex hygiene. Tuberculosis as a community health problem. The community attack on heart disease and cancer. Health problems specific to certain groups: The community's interest in maternity, infancy, and childhood. Health problems and opportunities in the schools. Safeguarding health in the industries. Military health problems. The health of the rural population. Health agencies: Doctors, nurses and hospitals. The drug industry. Voluntary and official public health agencies. The future of our health agencies and activities. Index.

Note: A college textbook for students of hygiene and public health, covering the main health problems arising in environment and those peculiar to certain population groups. Rural medical care and public health service are given full attention, and there are discussions of military hygiene problems and socialized medicine. New material in the third edition includes data on air-borne infection, weather and health, scavenger action of soil, food deficiencies, tuberculosis control, problems created by military bombing, the new sulfonamide drugs, and the expanding functions of government in the health field. Also available for use with this book or independent use is the author's *Manual of war-time hygiene*, New York: The Macmillan Company, 1942, 86 p., paper, \$1.00.

WILLIAMS, JESSE FEIRING

Personal hygiene applied. Seventh edition, revised. Philadelphia: W. B. Saunders Company, 1941. 529 p. illus. (part col.) 20 cm. \$2.50. 2925

Contents (abridged): Meaning of health. Health problem. Man and his behavior. Approach to knowledge of health. Science and attitudes. Hygiene of the muscular system, skeletal system, of nutrition, of the respiratory system, circulatory system, endocrine system, excretory system, the nervous system, of mouth, eye and ear, of the sexual aspects of life. Prevention in specific disease. Appendix. Index.

Note: This text, for students in colleges and schools of nursing and for general readers, presents the fundamental philosophy of health and hygiene and surveys health facts and their applications. The author gives specific health advice on how to care for every region of the body. For the seventh edition the author added a chapter on "man and his behavior," giving a modern treatment of psychological backgrounds of hygiene and mental hygiene. The material on vitamins was brought up to date. A simplified discussion of infection and immunity was added. The chapter on endocrines was rewritten and expanded. New material was added on safety problems and a new discussion of human heredity and its effects on the abilities and talents of the individual. Selected bibliographies were included after each chapter.

PSYCHOSOMATIC MEDICINE

BENEDEK, THERESE (FRIEDMANN), AND BORIS B. RUBENSTEIN

The sexual cycle in women; the relation between ovarian function and psychodynamic processes. Washington, D.C.: Committee on Problems of Neurotic Behavior, Division of Anthropology and Psychology, National Research Council, 1942. 307 p. illus. (part col.) 26 cm. (Psychosomatic medical monographs. Vol. III, nos. I-II) Paper, \$3.50. 2925a

Contents (abridged): Introduction. General survey of the material. Vaginal smear basal body temperature technique of hormone evaluation. General aspects of the application of psychoanalytic method. Interpretation and prediction. A study of two cycles. Critical evaluation of the methods and discrepancies. The gonadal and the emotional cycle. Personality structure and the sexual cycle. Comments and conclusions. Appendix. Typical cycles. Bibliography.

Note: A monograph based on a study of 152 cycles of 15 women of childbearing age, also of a number of cases not included in the original series, as well as complete psychoanalytic records of the 15 women. The cases had originally come under observation because of various emotional disturbances and psychosomatic symptoms.

DUNBAR, HELEN FLANDERS

Emotions and bodily changes: a survey of literature on psychosomatic interrelationships, 1910-1933. Second edition. With supplementary introduction and additional bibliography. New York: Published for the Josiah Macy, Jr., Foundation by the Columbia University Press, 1938. 601 p. 24 cm. \$5.00. 2925b

Contents: Introduction. Part one, Orientation and methodology: Problem of integration and differentiation. Problems of acute and chronic illness. Problem of measurement. Part two, Organs or organ-systems: General considerations. Nervous system. Musculature. Endocrines. General metabolism and heat regulation. Cardiovascular system. Respiratory system, including oto-rhino-laryngology. Gastrointestinal system. Genitourinary system and gynecology. Special sense organs exclusive of skin. Skin. Bones, including odontology. Part three, Therapeutic considerations and concluding remarks: Therapeutic considerations. Conclusion. Bibliography: Problem of integration and differentiation. Problems of acute and chronic illness. Problem of measurement. Nervous system. Musculature. Endocrines. General metabolism. Heat regulation (psycho-genic changes in temperature). Cardiovascular system. Respiratory system, including oto-rhino-laryngology. Gastrointestinal system. Genitourinary system and gynecology. Special sense organs exclusive of skin. Skin. Bones, including odontology. Therapeutic considerations and concluding remarks. Indexes: Index of names. Subject index.

Note: In this volume, each major topic in the contents represents a written chapter and a bibliographical list. The written chapters are made up of abstracts of parts or the whole of such articles in the list as contain a definite contribution, positive or negative, to the problem of emotions and bodily changes. The bibliography lists 2,251 publications on the various phases of the problem of psychosomatic interrelationships, mostly in the English and German languages.

DUNBAR, HELEN FLANDERS

Psychosomatic diagnosis. With foreword by Leonard G. Rowntree. New York: P. B. Hoeber, Inc., Medical Book Dept. of Harper & Brothers, 1943. 741 p. illus. 24 cm. \$7.50. 2926

Contents: The psychosomatic history. Special techniques of examination to supplement the psychosomatic history. Review of general hospital admissions. Fractures. Hypertensive cardiovascular disease, coronary occlusion, and anginal syndrome. Rheumatic disease—rheumatic fever and rheumatoid arthritis—rheumatic heart disease. Cardiac arrhythmia and recurrent decompensation. Diabetes. Contrasting profiles and their use in psychosomatic diagnosis. Psychosomatic diagnosis in combined or overlapping syndromes. Considerations of general theory and criteria for therapy—contributions of the Rorschach test to psychosomatic diagnosis. Conclusion—future research in psychosomatic problems—basic principles of psychosomatic diagnosis. Bibliography. Index.

Note: Based on the results of extensive research and clinical work for twelve years at the Presbyterian Hospital in New York, this outline of the subject evaluates emotional and physical mechanisms in considering the patient as a whole. The author has based her exposition of the psychosomatic approach to the treatment of disease on more than 1600 cases.

FRANK, LAWRENCE KELSO, AND OTHERS

Psychosomatic disturbances in relation to personnel selection. New York: New York Academy of Sciences, 1943. 86 p. illus. 22 cm. (New York Academy of Sciences. Annals. Vol. XLIV, p. 539-625) Paper, \$1.00. 2926a

Contents: Introduction to the conference on psychosomatic disturbances in relation to personnel selection, by Lawrence K. Frank. Some physiological principles underlying variability of response, by Donal Sheehan. Disturbances of gastrointestinal function in relation to personality disorders, by Harold G. Wolff. The Rorschach method in the study of personality, by M. R. Harrower-Erickson. The detection of personality imbalances, by Gardner Murphy. The detection of potential psychosomatic breakdowns in the selection of men for the armed services, by Lawrence S. Kubie.

Note: This series of papers is the result of a conference held by the Section of Psychology of the New York Academy of Sciences, February 5 and 6, 1943. The aim of the conference was to focus attention upon some of the urgent problems of personnel selection for the war and the postwar period. References are given in footnotes and discussion is printed at the ends of papers.

WEISS, EDWARD, AND O. SPURGEON ENGLISH

Psychosomatic medicine; the clinical application of psychopathology to general medical problems. Philadelphia: W. B. Saunders Company, 1943. 687 p. illus. 24 cm. \$8.00. 2927

Contents: Psychosomatic medicine. Personality development and psychopathology. The cardiovascular system. Emotional factors in organic heart disease. Essential hypertension. The gastro-intestinal system. Endocrine system and metabolism. Genito-urinary system and the sexual function. The respiratory system. The central nervous system. Special senses—ear, eye, skin. Special topics—allergy, dentistry, arthritis. Military medicine. Treatment—general principles of psychotherapy. Treatment—"normal" problems in psychotherapy. Treatment—special therapeutic procedures. Training in psychosomatic medicine. References. Selected readings. Index.

Note: This book deals with "mind-body" relationship in the light of the authors' experience and is of great interest to all members of the medical profession. Its objective is to help to differentiate bodily symptoms of psychic origin from those of organic etiology; to pick out the emotional factors complicating physical disease; to uncover the underlying causes of these emotional disturbances; and to institute resultful therapy. The important thing about the book is that it is based on extensive clinical observations. Among the many problems discussed are such as cardiac neurosis, dyspepsia, gastro-intestinal pain, anxiety, peptic ulcer, endocrine and metabolic disorders, bronchial asthma, migraine and vertigo, etc. Summaries, tables, and outlines are placed at many points throughout the book.

PSYCHIATRY

ALEXANDER, FRANZ

The medical value of psychoanalysis. New, enlarged, and revised edition. New York: W. W. Norton and Company, Inc., 1936. 278 p. illus. 21 cm. \$3.00. 2929

Contents: Psychoanalysis and medicine. The present status of psychoanalysis as a theoretical and therapeutic system. Critical considerations on the psychoanalytic treatment of psychoses. The sociological and biological orientation of psychoanalysis. Psychic influences on body functions. Recognition of psychic factors in modern medicine. Psychoanalysis in medical education. Index.

Note: This work is essentially an attempt to clarify the relation of psychoanalysis to medicine, to which is added a brief discussion of the significance of psychoanalytical principles for biology in general. The methodological and theoretical concepts fundamental in the present system of psychoanalysis are outlined. The second edition contains new chapters on the psychic influences on body functions, the psychic factors in modern methods, and the sociological and biological orientation of psychoanalysis.

ALLEN, FREDERICK HAROLD

Psychotherapy with children. New York: W. W. Norton & Company, Inc., 1942. 311 p. 22 cm. \$3.50. 2929a

Contents: Foreword. The normal psychological growth process. The function of the family in the child's growth. The therapeutic process. The beginning phase of therapy. The child's participation. A fearful child in therapy: a case history. Problems arising in working with aggressive behavior. Factors that interfere with therapy. The ending phase of therapy. Broader implications of a therapeutic philosophy. Index.

Note: How children with personality and behavior difficulties can be helped to help themselves. The book shows how normal psychological growth is a dynamic process in which the child actively participates. The book, addressed to psychiatrists, psychologists, social workers, and educators, will also be helpful to intelligent parents.

BECK, SAMUEL JACOB

Rorschach's test. Foreword by Willard L. Valentine. New York: Grune & Stratton, 1944. 223 p. illus. 23 cm. \$3.50. 2930

Contents: Foreword. Preface. Experimental procedure. The whole response: W. Detail and rare detail: D and Dd. Scoring problems. The white space. Ds and Dds. The organization activity: Z. Approach and sequence: Ap, Seq. The movement response: M. The color response: C. The light-determined response: FV and Y. Diverse determinants. Experience balance: Exp. The form response: F+ and F-. The popular response: P. Content. Scoring record and summary. Bibliography. Appendixes. Schematic reproduction of Rorschach figures. Index.

Note: The first of a projected series of studies of the Rorschach test, which attempts to evaluate the subject's personality on the basis of what he sees in a series of ten designs made up of ink-blots. The intent of the present volume is to demonstrate the processes used in evaluating test responses. The responses are cited verbatim and each is then evaluated or "scored" in terms of the symbols of Rorschach's test language. The book is therefore a report of a large number of excursions into Rorschach associations and a systematic ordering of the responses collected. No interpretations are offered in the present volume.

BENDER, LAURETTA

A visual motor Gestalt test and its clinical use. New York: The American Orthopsychiatric Association, 1938. 176 p. illus. 25 cm. (American Orthopsychiatric Association. Research monographs. No. 3) \$3.50. 2931

Contents: Part I, Theoretical data: Introduction. Maturation processes in children and the motor factor. Low grade defectives and the biological background for form and space. Maturation in the primitive child. Optic imagery and movement as the means of organizing representation. Tachistoscopic phenomena and the temporal factor. Part II, Clinical considerations: Sensory aphasia and the cerebral localization of the visual motor Gestalt function. The disturbance in visual motor Gestalten in different types of organic brain disease. Schizophrenia. Manic depressive psychoses. Standardization of the Gestalt function in a performance test for children. Mental defectives. The Gestalt functions in malingering and in the Ganser syndrome: The psychoneuroses. Bibliography. Index.

Note: Clinical material is offered in this monograph based on the visually perceived configurations first used by Max Wertheimer in his experimentations with visual Gestalten. These were presented by the author to children, adults, and mentally sick patients with the request that they be copied. The final product is a visual motor pattern which reveals modifications of the original pattern by the integrating mechanism of the individual who has experienced it. Seventy-four reproductions of patients' drawings or patterns are presented, accompanied by analysis in terms of Gestalt psychology.

BENTLEY, MADISON, AND E. V. COWDRY

The problem of mental disorder: a study undertaken by the Committee on Psychiatric Investigations, National Research Council. New York: McGraw-Hill Book Company, Inc., 1934. 388 p. 23 cm. \$4.00. 2932

Contents: Section I: The character of the problem. Section II, Current points of view: Clinical psychiatry, by C. Macfie Campbell. Medical psychiatry, by A. Myerson. The neurologist's point of view, by I. S. Wechsler. The psychobiological point of view, by Adolf Meyer. The psychoanalyst's point of view, by Lawrence S. Kubie. Section III, The supporting sciences: Problems in cerebral anatomy and physiology, by Stanley Cobb. Electrophysiology of the brain, by George H. Bishop. Electrical measurement of activities in nerve and muscle, by Edmund Jacobson. Neurocytology, by E. V. Cowdry. Certain aspects of the chemistry and metabolism of the brain, by Irvine H. Page. Neuropathology of the brain, by Wilder Penfield. The origin, plan, and operational modes of the nervous system, by G. H. Parker. Factors of neural integration and neural disorder, by C. Judson Herrick. General biology and genetics, by H. S. Jennings. Human constitution, by Walter Freeman. Endocrinology, by R. G. Moskins. The pathogenesis of neurocytotropic virus diseases, by Ernest W. Goodpasture. Nutrition, by George R. Minot. Pharmacology, by K. K. Chen. General and experimental psychology, by Madison Bentley. Clinical psychology and the psychoneuroses, by Joseph Jastrow. The comparative psychopathology of infrahuman primates, by Robert M. Yerkes and Ada W. Yerkes. Psychotic symptoms and social backgrounds, by Mandel Sherman and Irene C. Sherman. Cultural anthropology, by A. L. Kroeber. Education, by Leta S. Hollingworth. Section IV: Comments and reflections. Index.

Note: A collection of professional papers which together summarize the state of psychiatric knowledge as of 1934 and suggest certain possible means of advancing our understanding and control of mental disorders. The central interest of the Committee was to discover how well the natural sciences are prepared to form a basis of support, in the way of fact, method, and principle, for the psychiatric arts and for a sound doctrine of the relation of the abnormal to the normal in human activity and behavior.

BILLINGS, EDWARD GREGORY

A handbook of elementary psychobiology and psychiatry. New York: The Macmillan Company, 1939. 271 p. illus. 16 cm. \$2.50. 2933

Contents (abridged): Part I, Psychobiology: Definition. Integration and unit formation. Personality organization. Implicit, and overt activity. Psychobiological functioning. Integrational

levels. The total and mentally integrated personality in action. Part II, Psychiatric examination procedures: General discussion. Outline of examination for use with adult, with child. Part III, General psychopathology: Reactions of intellectual inadequacy. Constitutional psychopathic reactions. The minor psychoses. The major psychoses. Part IV, General principles of psychotherapy: Indirect, and direct therapies. Part V, Selected references to other works dealing with personality functioning and psychiatry: History of psychiatry. Psychobiology. Psychosomatic relations. Forensic psychiatry. Administrative psychiatry. Mental hygiene. Index.

Note: The author has prepared this handbook from material used in his teaching in the Colorado Psychopathic and Colorado General Hospitals, and has compressed into brief form the concepts and material that have proved most helpful to both student and physician in their preliminary orientation in the essentials of psychobiology and psychopathology, the details of the psychiatric examination, and the general principles of psychotherapy. The book is intended to be used as a supplement to the textbooks in this field, and is intended for students and practitioners of medicine. The author is both internist and psychiatrist, and has kept in mind the needs of physicians in the practical examination, understanding, and treatment of the psychiatric problems of medical practice.

BLUEMEL, CHARLES SIDNEY

*616.8
B36-A*
The troubled mind; a study of nervous and mental illnesses. Baltimore: The Williams & Wilkins Company, 1938. 520 p. 22 cm. \$3.50. 2934

Contents (abridged): Fixed ideas and reactions. Psychoneurosis: Its manifestations. Its nature and causes. Traumatic hysteria. Clinical types of inhibition. Sundry disorders. Mental illnesses. The patient's role in therapy. Glossary. Index.

Note: A description of nervous and mental diseases in simple terms for the layman and beginning student, with a statement of some original theories concerning the nature of these disorders. Considerable attention is given to the public lunatic or psychopath whose activities may lead to social unrest, political upheaval, war, and revolution. The glossary is intended for the lay reader. Illustrated with numerous case histories.

BOCHNER, RUTH, AND FLORENCE HALPERN

The clinical application of the Rorschach test. Introduction by Karl M. Bowman. New York: Grune & Stratton, 1942. 216 p. illus. 22 cm. \$3.00. 2935

Contents (abridged): Test procedure. How to score a record. What the symbols in column I mean. What the symbols in column II mean. What the content of the responses means. Additional test factors. The cards. Variants. Interpretation. Children's records. The mental defective. The neurotic. Schizophrenic records. The organic. Recent developments of the Rorschach test.

Note: This volume is intended for psychiatrists and psychologists using, or learning to use, the Rorschach method, a test designed to measure the more intangible, non-intellectual traits of personality not measured by intelligence tests. The book represents the work of a number of years of study and application of this test at Bellevue Psychiatric Hospital. It is written in a simple, clear and readable style, without lengthy discussions of the theoretical points and with detailed case material employed for illustrations.

BRADLEY, CHARLES

*132.1
B32-A*
Schizophrenia in childhood. New York: The Macmillan Company, 1941. 152 p. 21 cm. \$2.50. 2936

Contents: Description of the disorder and illustrative case reports. Historical survey of literature. Incidence. Symptomatology. Course. Types. Etiology. Psychopathology. Laboratory findings. Anatomical pathology. Diagnosis. Differential diagnosis. Prophylaxis and treatment. Prognosis. A practical concept of childhood schizophrenia. Bibliography. Author and subject indexes.

Note: This is the first comprehensive review of the literature on this subject to appear in English. In selecting cases for inclusion in this study, the author has limited his material to those occurring in the immature child prior to the onset of physiological puberty. After defining the terms dementia praecox and schizophrenia, he considers the various aspects of the disease, its diagnosis and treatment, giving illustrative case reports in each chapter. In the final chapter the information presently available is

summed up in a brief and practical formulation of the outstanding characteristics of the disease. There is a full bibliography. The work will be of interest to psychiatrists and to pediatricians, general practitioners, social workers, and others interested in the guidance of abnormal children.

BRAUDE, MORRIS

The principles and practice of clinical psychiatry. Philadelphia: The Blakiston Co., 1937. 382 p. illus. 21 cm. \$4.00. 2937

Contents: Introduction. Major psychoses: Dementia praecox; manic-depressive psychoses; the organic psychoses; the toxic psychoses; primary, endogenous or psychogenic psychoses; psychoses with myoclonic states; food deficiency and mental disease; the psychoses of the female reproductive period; constitutional psychopathy. Neuroses and psycho-neuroses: the psycho-neuroses, maladjustment neuroses. Miscellaneous: simulation or malingering; mental deficiency; psychoanalysis. Index.

Note: This book gives the student a broad knowledge of the field of mental disease. The author emphasizes principles and, whenever possible, the psychodynamics of mental states. To facilitate an easy and ready familiarity with the clinical features of the several mental states, hypothetical cases are cited. These are followed by cases taken from life.

BROMBERG, WALTER

The mind of man; the story of man's conquest of mental illness. New York: Harper and Brothers, 1937. 323 p. illus. 22 cm. \$3.50. 2938

Contents: The roots of mental healing. Priest and pagan. Kings, quacks, and monks: faith-healing in medieval times. Witchcraft, the mass delusion. The devil loses dominion over the insane. Treatment of lunacy by physicians. Mesmer and his lilac robe. The latter-day faith-healers. Hypnotism. Suggestion and auto-suggestion. The dark shadow lifts: the development of modern psychiatry. Beginnings of psychoanalysis. The Freudian psychology. Psychoanalytical treatment. The future of psychotherapy. Index.

Note: A history of insanity and mental healing written for the general reader. There is a 14-page bibliography.

BROTEMARKLE, ROBERT ARCHIBALD, EDITOR

Clinical psychology; studies in honor of Lightner Witmer to commemorate the thirty-fifth anniversary of the founding of the first psychological clinic. Philadelphia: University of Pennsylvania Press, 1931. 409 p. illus. 23 cm. \$1.50. 2939

Contents: Part I, Historical: Lightner Witmer: a biographical sketch, by Joseph Collins. History of the psychological clinic, by S. W. Fernberger. Part II, Commemorative studies: The primary problems of clinical psychology. Mental deficiency, by F. N. Maxfield. The superior child, by Alice M. Jones Rockwell. The pre-school child, by Dorothy K. Hallowell. School levels, by M. S. Murphy. The correction of speech defects, by E. B. Twitmyer. Special education, by Gladys G. Ide. College student personnel work, by R. A. Brotemarkle. Industry, by M. S. Viteles. Individual mental testing, by H. J. Humpstone. Group mental tests, by R. H. Sylvester. Psychobiochemistry, by H. E. Starr. Diagnostic education, by Arthur Phillips. Private practice, by David Mitchell. The contributions of clinical psychology to other fields. General psychology, by Stevenson Smith. The principles of education, by Anna J. McKeag. The school counselor, by Anna E. Biddle. College admission, by K. G. Miller. Teacher training, by J. D. Heilman. Teacher training for special education, by F. H. Reiter. The social sciences, by Franklin Paschal. Social service work, by Charlotte E. Grave. Moral training, by E. S. Rudisill. Conduct problems, by Clara H. Town. Criminology, by R. H. Gault. Religious experience, by D. E. Buzby. Part III, Reprints of Lightner Witmer.

Note: This volume contains studies of the primary problems of clinical psychology and its contribution to other fields, by outstanding authorities, together with reprints of three articles by Dr. Witmer in *The Psychological clinic*.

BROWN, JUNIUS FLAGG, AND KARL A. MENNINGER

The psychodynamics of abnormal behavior. New York: McGraw-Hill Book Company, Inc., 1932

1940. 484 p. illus. 23 cm. (McGraw-Hill publications in psychology; J. F. Dashiell, consulting editor) \$3.50. 2940

Contents: Part I, The organismic viewpoint: Normality, abnormality. Personality. The historical development of psychopathology. The psychosomatic problem. Part II, Symptomatology: Modern ideas regarding symptoms. Abnormalities of the cognitive processes (knowing). Abnormalities of the motor processes (doing). Abnormalities of the emotional processes (feeling). Part III, The theory of the structure and genesis of the personality: The methodological basis of psychodynamic theory. Psychoanalysis: Basic postulates; theory of personality. Psychoanalysis: theory of psychosexual genesis. Psychoanalysis: the conditioning of normal behavior. Psychoanalysis: summary; criticism. Other theoretical approaches. Part IV, Psychiatry: Psychiatry as a branch of medicine. The psychoses primarily organic in origin. The psychoses primarily functional in origin. The borderline diseases. The psychoneuroses. Abnormalities of sexual behavior. Character disorders. Genius. Part V, The future of psychodynamic theory: Toward an experimental psychopathology.

Note: Written from the standpoint of psychoanalysis and Gestalt psychology, this text integrates the psychoanalytic approach into the subject matter usually presented in academic texts, and offers a systemic treatment covering the complete theoretical background of abnormal behaviors. The author has adopted the organismic solution to the psychosomatic problem and treats each behavior disorder systematically in terms of its cause, significance, and economy.

BURCHARD, EDWARD MARSHALL LORAIN

150.6
C O
v. 13
Physique and psychosis; an analysis of the postulated relationship between bodily constitution and mental disease syndrome. Baltimore: The Johns Hopkins Press, 1936. 73 p. illus. 25 cm. (Comparative psychology monographs. Vol. 13, serial no. 61) Paper, \$1.25. 2940a

Contents (abridged): The approach of the present study. Analysis of the data. Conclusions. Bibliography.

Note: A short monograph enquiring into the long-accepted (by laymen) theory that external appearance is an accurate index to mentality and character. Illustrated with graphs and tables.

CAMERON, DONALD EWEN

Objective and experimental psychiatry. Second edition. New York: The Macmillan Company, 1941. 390 p. 22 cm. \$4.25. 2940b

Contents: Preface. Experimentation in general. Nature of the organism. The learning function. Memory. The function of conditioning. Functions of thinking and language. Personality functions. Facilitative functions. Sleep and allied reactions. Convulsive reactions. Electrical phenomena. Oxidative functions. Basic metabolic activities. Effects of drugs upon behavior. Autonomic nervous system and its adjuvants. Endocrine function. Endocrine and vitamin functions. Structural functions. Heredity. Author index. Subject index.

Note: Essentially a survey of the physiological aspects of psychiatry. In this edition the text has been rearranged and extensively rewritten, and the author has arranged the various functional activities in the order of their contribution to the adaptability of the organism. Five of the chapters are new.

CAMPBELL, CHARLES MACFIE

416.8
C157
Towards mental health; the schizophrenic problem. Cambridge: Harvard University Press, 1933. 110 p. 19 cm. \$1.25. 2941

Contents: The general field and the special territory. The harmonizing of conflicting trends, the achievement of independence, the attaining of a conviction of personal value. Heredity and environment. Summary.

Note: This book presents the Adolph Gehrman lectures in hygiene given at the University of Illinois College of Medicine in 1932. The author explains that he chose intentionally some of the most difficult problems in the field of mental disorders as the material for these lectures. They were delivered before an audience of faculty members, alumni, advanced students and undergraduates interested in this field, and the book is intended for readers having similar interests. Since clinical detail is not

discussed but instead, the broader aspect of the individual's adaptation to the cultural environment, it is the author's hope that the book may also be of interest to non-medical workers in the social field.

COBB, STANLEY

Borderlands of psychiatry. Cambridge, Mass.: Harvard University Press, 1943. 166 p. illus. 23 cm. (Harvard University monographs in medicine and public health) \$2.50. 2941a

Contents: Introduction. Body and mind. Parallel evolution of speech, vision and intellect. Speech and language defects. Function of frontal areas of human brain. Anatomical basis of emotions. Consciousness. Concerning fits. Psychoneurosis. Psychosomatics. Index.

Note: The author's concern in this work is the relation of psychiatry to persons whose mental abnormalities are such that they do not require institutional care, but who do need psychiatric attention if they are to be kept out of trouble or are to reach their maximum usefulness in the community. The material originated as lectures, and is handled in a frankly personal manner, dictated by the author's own field of interest and experience. References are placed at the end of each chapter.

COBB, STANLEY

Foundations of neuropsychiatry. Third revised and enlarged edition of the work formerly known as A preface to nervous disease. Baltimore: The Williams and Wilkins Company, 1944. 252 p. illus. 23 cm. \$2.50. 2942

Contents: Autonomic nervous system. Segmental and supra-segmental aspects of the cerebrospinal nervous system. Motor integration and locomotion. Functional localization in the cerebral cortex. "Consciousness" and the "mind-body" problem. Cerebral circulation. Cerebrospinal fluid. General neuropathology. The peripheral nerve and neuritis. Special neuropathology. Epilepsy. Some psychological concepts important in medicine. Psychopathology. Index.

Note: This book is designed to give to practitioners and students of medicine the facts and correlations needed to understand the simpler workings of the central nervous system. The fairly brief treatment results from the author's intention to include only those anatomical structures of which the physiology is known, to discuss only physiological processes for which there is a well substantiated anatomical correlation, and to describe only the pathology that has fundamental significance. The third edition contains a new chapter on psychological concepts important to medicine, with emphasis on normal psychological processes. There are a considerable number of references grouped by chapters.

CONKLIN, EDMUND SMITH

Principles of abnormal psychology. Revised. New York: Henry Holt and Company, 1935. 527 p. 22 cm. \$3.25. 2943

Contents: Introduction. Psychogenic interpretative concepts. Sensory abnormalities, illusions and hallucinations. Memory abnormalities. The psychoneuroses. Multiple personality. Speech abnormalities. Distorted thinking (paranoia). Major forms of abnormality. The abnormally endowed. Sleep and its abnormalities. Behavior effects of epidemic encephalitis. Hypnotism and suggestibility. Dreams. Psychotherapy. Mental effects of drugs. Spiritistic phenomena. The historical and biographical background. Index.

Note: A general study of the psychology of abnormal behavior. The psychoneuroses are discussed before the psychoses, making possible a more systematic development of psychogenic interpretations before the major forms of abnormality are considered. Data from recent psychological literature and experimental studies are included in this revision, and new sections are added on speech abnormalities, constitutional psychopathic inferiority, the behavior effects of epidemic encephalitis, and psychotherapy.

DAYTON, NEIL AVON

New facts on mental disorders; study of 89,190 cases. Springfield, Ill.: Charles C. Thomas, 1940. 486 p. illus. 23 cm. \$4.50. 2944

Contents: General considerations. Age in mental disorders. Nativty and mental disorders. Alcohol and mental disorders. Alcohol and other factors. Marriage and mental disorders. Marital status and other factors. Clinical diagnosis in mental disorders: age. Clinical diagnosis and changing incidence: time changes. Clinical diagnosis and other factors. Are mental disorders on the increase? Appendix: The story of the project. Index.

Note: This volume presents the findings of a research project carried out by the Massachusetts Department of Mental Health with the aid of grants from the Laura Spelman Rockefeller Memorial Fund and the Rockefeller Foundation. The study was undertaken because of the very evident need for better statistics in mental diseases. In it mental disorder was considered as a whole rather than as a disease of the individual. Data were compiled from examinations of 89,190 patients admitted to Massachusetts mental hospitals during the period 1917-1933, a period which included World War I, the prohibition era, and the depression. The book will interest both psychiatrists and social-service workers, as it will serve as a source of both social and psychological information. At the beginning of each chapter there is a brief summary of its contents.

DEUTSCH, HELENE

The psychology of women, a psychoanalytic interpretation. Foreword by Stanley Cobb. New York: Grune & Stratton, 1944. 405 p. 22 cm. \$4.50. 2945

Contents: Prepuberty. Early puberty. Puberty and adolescence. Menstruation. Eroticism: the feminine woman. Feminine passivity. Feminine masochism. The "active" woman: the masculinity complex. Homosexuality. Influence of the environment. Bibliography. Index.

Note: The author states in the preface of this book that its purpose is to explain the normal psychic life of women and their normal conflicts. The psychoanalytic theory of the instincts is used to illuminate the biologic background from which the psychologic personality of woman emerges. Case histories are used as illustrative matter, taken from the author's own files and elsewhere. The book is intended for students and practitioners of psychiatry. This text constitutes a restatement of the views expressed in the author's earlier book, *Psychoanalyse der weiblichen Sexualfunktionen*, Vienna, 1925. She has reasserted the views that have stood the test of later investigations, and corrected or discarded those which have proved inadequate. This book, in which the individual development and personality of woman are discussed, will be followed by a second volume having as its subject "woman as servant of the species."

DORCUS, ROY MELVIN, AND G. WILSON SHAFFER

Textbook of abnormal psychology. Second edition. Baltimore: The Williams & Wilkins Company, 1939. 475 p. illus. 23 cm. \$4.00. 2946

Contents (abridged): Field and scope of abnormal psychology. Sensory disorders. Motor disorders. Disorders of association and memory. Theories of disorders of the central functions. Desires, feelings, and emotions. Sleep, dreams, and hypnosis. Classification of mental diseases—organic psychoses and epilepsy. Functional psychoses. Psychoneuroses. Mental deficiency and mental superiority. Chemical therapies. Psychotherapy. Bibliography. Index.

Note: This text was written for advanced students in psychology, pre-medical and medical students who desire further learning in psychology. The authors have combined the clinical aspects of the subject and contributions of general with experimental psychology. Two changes have been made in the usual method of treatment: 1. Discussion of abnormal phenomena is approached through consideration of the normal. Symptoms and behavior of the abnormal individual are recognized as exaggerated manifestations of normal functioning. 2. Discussion is not limited to purely functional disorders with no consideration of the organic aspects, nor on the other hand are all mental abnormalities explained as having an organic origin. Much new material is incorporated in this second edition, a fact which is reflected in the addition of about 150 references to the bibliography. Some of the material has been rearranged, portions not readily understood have been eliminated, and factual material has been more closely coordinated with theories and therapies to which it applies.

EBAUGH, FRANKLIN GESSFORD, AND CHARLES A. RYMER

Psychiatry in medical education. New York:

The Commonwealth Fund, 1942. 619 p. illus. 24 cm. \$3.50. 2947

Contents: Orientation. Psychobiology. Objectives and trends in medical education. The 1932 survey of psychiatric education. Preclinical psychiatric education: the teaching of normal behavior. Preclinical psychiatric education: the teaching of abnormal behavior. The clinical teaching of psychiatry. Problems relative to the teaching of psychiatry. Opportunities for psychiatric education and service in the general hospital. Graduate psychiatric education. Postgraduate psychiatric education. Retrospect and prospect. Questionnaires relative to the teaching of psychiatry in medical schools. Personality study. History or indirect examination. Outline for mental status examination. Charts for personality study and history. Outline of lectures in psychiatry. Central agencies for the direction of institutions. Material for which the candidate for certification in psychiatry and neurology is held responsible. Index.

Note: A detailed picture of psychiatric teaching in the United States. Two aspects of the subject are considered: general psychiatric content in undergraduate training which seeks to inculcate the principles and viewpoints that should be a part of the armamentarium of every general practitioner, and graduate psychiatric training designed for those who plan to specialize in this field. The book deals with the problems of psychiatric teaching today, the ways in which various schools have set about solving them, and the progress that has been made in the past decade, and the authors offer suggestions to guide the future development of psychiatric teaching.

EMERSON, CHARLES PHILLIPS

The nervous patient; a frontier of internal medicine. Philadelphia: J. B. Lippincott Company, 1935. 453 p. 21 cm. \$4.00. 2948

Contents: General considerations. Mechanisms by which physical symptoms are produced. Blood chemistry. Emotions: conditioned reflexes. Constitutional inferiority; organ inferiority; allergy. The eye. Migraine. The nose. Ear, teeth. Facial neuralgias; special types of headache. Lungs and bronchi. Cardiovascular system. Gastro-intestinal. Genito-urinary. Central nervous system. Skin, backache, joints, spine. Organic nervous reaction types. Disturbances of muscular movements. Disorders of sleep. Disturbances within the sex life. Ontogenesis of personality. Psychoneuroses. Neurasthenia: manifest anxiety. Psychasthenia: occult anxiety; infantile emotionalism. Hysteria. The epileptic patient. Psychoses. The schizophrenic patient. The paranoid patient. Posttraumatic psychoses: involutional, degenerative, and defective conditions. Index.

Note: In the preface of this book the author remarks that a study of case records of even the best hospitals forty years ago would show that the diagnosis for perhaps a third of all cases was "neurasthenia," and that most of these patients were doubtless suffering from organic or mental diseases which the diagnostic methods of that day could not demonstrate. Although the many advances made in medical science have diminished the "neurasthenic" group, this still constitutes one of medicine's hardest problems. This book was written for the internist because he alone is able to evaluate those elements which the patient's disturbed personality injects into the clinical picture, and to recognize the almost exact imitations of organic diseases which have their origin in the emotional life of the patient. It was written particularly for the general practitioner, because he sees organic and mental diseases in their earliest stages when prevention and cure are possible.

ENGLISH, OLIVER SPURGEON, AND GERALD H. J. PEARSON

Common neuroses of children and adults. New York: W. W. Norton & Company, Inc., 1937. 320 p. 22 cm. \$3.75. 2949

Contents: Preface. Part I, Psychophysiology and psychopathology of the neuroses: The structure of the personality. The psychosexual development of the child. The emotional traumata which interfere with the normal development of the personality. The psychodynamics of symptom formation. Part II, The common neuroses of childhood: Anxiety states in children. Disorders of the functions of the upper gastrointestinal tract. Disorders of the functions of the lower gastrointestinal tract. Disorders of the functions of the urinary tract. Disorders of motor functions. Disturbances of social adaptation. Inhibitions of social behavior. Sexual perversions of children. Some general considerations regarding treatment of psychogenic disorders in children. Part III, The common neuroses of adults: Events which precipitate an

adult neurosis. Neurasthenia. Conversion hysteria. Anxiety hysteria. Compulsion neuroses. The neurotic character. Sexual perversions of adults. General remarks on psychotherapy. Special aspects of psychotherapy. Preparation for psychiatric work. Bibliography. Index.

Note: This book separates out of a voluminous psychoanalytic literature material that will be of practical value to the student and practitioner in understanding and treatment of the neuroses.

FARIS, ROBERT E. LEE, AND H. WARREN DUNHAM

13211
F22m Mental disorders in urban areas; an ecological study of schizophrenia and other psychoses. Chicago, Ill.: The University of Chicago Press, 1939. 270 p. illus. 19 cm. (The University of Chicago sociological series) \$2.50. 2950

Contents: List of illustrations. List of tables. Natural areas of the city. Urban distribution of insanity rates. The typical pattern in the distribution of schizophrenia. The random pattern in the distribution of the manic-depressive psychoses. The differential distribution of the types of schizophrenia. The concentration of the alcoholic psychoses and drug addicts in the zone of transition. The association of general paralysis with vice areas. The correlation of old age psychoses with areas of tenancy. Insanity distribution in a smaller city, Providence, Rhode Island. Mind and society. Hypotheses and interpretations of the distributions. Appendixes: Community maps by number and housing areas; Supplementary statistical tables; Second set of catatonic schizophrenia rates. Selected bibliography. Index.

Note: An ecological study of schizophrenia and other psychoses, based on 34,864 cases of mental disorder admitted to state hospitals and private sanitariums during a thirteen year period. The relationship of the growth of a city and its accompanying ecological organization to the major types of psychoses is studied. The authors then try to show how the facts may be interpreted and advances some hypotheses which will require more investigation before their adoption or rejection.

GOLDSTEIN, KURT

616.5
G7a Aftereffects of brain injuries in war, their evaluation and treatment; the application of psychologic methods in the clinic. Foreword by D. Denny-Brown. New York: Grune and Stratton, 1942. 244 p. illus. 22 cm. \$4.00. 2951

Contents: Part I, Symptomatology. General symptoms: Initial problems. Disturbances of vasomotor system. Genital functions. Sugar metabolism. Epilepsy. Neurologic symptoms: Lesions of motor area. Sensory area. Visual area. Frontal lobes. Cerebellum. Vestibular apparatus. Mental symptoms: Early. Psychogenic. Persistent. Origin of symptoms: Expression of struggle of organism with defect. Damage of circumscribed area. Impairment of specific attitude. Psychologic laboratory examination: Purpose. Use of tests. Tachistoscopic examination. Tests of general work capacity. Of individual defects. Part II, Treatment. Physical and neurologic therapy: Treatment of physical and neurologic changes. Of circumscribed mental defects. Of disturbance in word finding. Structure of speech. Retraining in speech defects. Social adjustment: Improvement of working capacity. Choice of vocation. Usefulness for military and civilian life. Compensation. Social care. Summary. Index. Bibliography.

Note: In this book Dr. Goldstein makes available the experience he gained following World War I, when he treated many soldiers suffering from brain injuries. Methods developed to meet the needs at that time have been well tested, for follow-up studies continued over unusually long periods were possible in many cases. This volume, which represents an application of practical psychological methods in the medical clinic, is intended for all persons who may be expected to treat cases of this type—surgeon, physician, neurologist, psychiatrist, and general practitioner.

GOLDSTEIN, KURT

140
G57 Human nature in the light of psychopathology. Cambridge: Harvard University Press, 1940. 258 p. illus. 19 cm. (The William James lectures delivered at Harvard University 1937-38) \$2.50. 2951a

Contents: The holistic approach and the analytic method in science. Pathology and the nature of man. The abstract attitude and speech. Ordered and catastrophic behavior: anxiety and fear. Coming to terms with the world. On the motives actuating human behavior. On the structure of personality. The individual and others. The fallacy of "isolation" in social philosophy. Notes. Index.

Note: A book treating the reactions of the individual to his social surroundings with reference to mental and physical diagnosis and therapy. The lectures upon which it is based were intended especially for educators and physicians.

GUTHIEL, EMIL ARTHUR

The language of the dream. New York: The Macmillan Company, 1939. 286 p. illus. 24 cm. \$3.50. 2951b

Contents: Introduction. Dream elements. Basic mechanisms. Dream symbols. Active analytical interpretation. Dream and neurosis. Dream interpretation and the psychological schools. Epilogue. Bibliography. Glossary. Index.

Note: A monograph on the study of the dream as a means of understanding mental conflicts, phobias, and other neurotic and psychotic manifestations. The author discusses old and new problems of the dream and their relation to psychology, psychoanalysis, psychiatry, and the general understanding of the human mind. Based on a survey of the literature of the field, the work contains many case histories of dreams and dream series, with the author's analysis immediately following. A critical evaluation of some of Freud's theories is also offered. The bibliography contains mostly works of the German school.

HALL, J. K., EDITOR

One hundred years of American psychiatry. New York: Columbia University Press, 1944. 649 p. illus. 26 cm. \$7.50. 2951c

Contents: The beginnings: from colonial days to the foundation of the American Psychiatric Association, by Richard H. Stryock. Psychiatry in Europe at the middle of the nineteenth century, by Henry E. Sigerist. The founding and the founders of the Association, by Winfred Overholser. The history of American hospitals, by Samuel W. Hamilton. A century of psychiatric research in America, by John C. Whitehorn. American psychiatric literature during the past one hundred years, by Henry Alden Bunker. The history of psychiatric therapies, by William M. Alamed. The history of mental hygiene, by Albert Deutsch. I, Military psychiatry: the Civil War, 1861-1865, by Albert Deutsch. II, Military psychiatry: World War I, 1917-1918, by Edward A. Strycker. III, Military psychiatry: World War II, 1941-1943, by Albert Deutsch. A century of psychology in its relationship to American psychiatry, by Thomas Verner Moore. American psychiatry as a specialty, by Henry Alden Bunker. Legal aspects of psychiatry, by Gregory Zilboorg. The influence of psychiatry on anthropology in America during the past one hundred years, by Clyde Klockhorn. Index.

Note: Thirteen specialists here present the development of psychiatry into a medical specialty, and the evolution of the insane asylum into the modern mental hospital. It is intended to be a historical synthesis of a century of American psychiatric evolution. Bibliographical footnotes, charts, tables, and diagrams supplement the text. There is also a voluminous index.

HINSIE, LELAND EARL

Concepts and problems of psychotherapy. New York: Columbia University Press, 1937. 199 p. illus. 24 cm. \$2.75. 2951d

Contents: Preface, by Nolan D. C. Lewis. Foreword. Introduction. Psychoanalysis: Freud. Psychobiology: Myer. Individual psychology (Adler) and analytical psychology (Jung). Statistical evaluation of psychotherapeutic methods, by Carney A. Landis. Conclusions. Bibliography. Index. Chart.

Note: A book for specialists. It deals with the anatomy and physiology of the mind, and the relations of psychotherapy to clinical psychiatry. It examines also the outstanding characteristics of the leading schools of psychology, and presents a list of some of the research problems facing psychologists.

HINSIE, LELAND EARL, AND JACOB SHATZKY

Psychiatric dictionary with encyclopedic treatment of modern terms. New York: Oxford University Press, 1940. 559 p. 24 cm. (Oxford medical publications) \$10.50. 2952

Note: The material of this dictionary has been drawn mainly from the words and concepts current in the field of psychiatry, with definitions and illustrative quotations which aim to give these terms concise clinical meaning. In many instances, however, the definitions are expanded into articles of more or less encyclopedic character. Considerable attention has been devoted to terms in allied fields, such as clinical neurology, constitutional medicine, genetics and eugenics, mental deficiency, forensic psychiatry, social service, nursing, and occupational therapy. There is a liberal use of cross references and double registration of compound expressions, including both the technical or scientific term and its popular English equivalent. The work comprises all important terms and concepts used since the time of Hippocrates up to the present day, with obsolescent or obsolete words or phrases so indicated. There are about 7,500 title-entries, including personal names most eminent in the field, together with phonetic pronunciations and philological derivations.

HOLLINGWORTH, HARRY LEVI

Abnormal psychology; its concepts and theories. New York: The Ronald Press Company, 1930. 590 p. illus. 22 cm. (Psychology series) \$4.50. 2953

Contents: Meaning and use of abnormal psychology. Changing conceptions of mental abnormality. The modern period. Contemporary viewpoints—the neuro-anatomical. The physiological. The psychological. The psycho-analytical. The concept of feeble-mindedness. Characteristics of the feeble mind. Psychological origins of functional disorders. Conceptions of the psychoneuroses—Janet. Typical psychoneurotic pictures. Conceptions of the psychoneuroses—Babinski, Hurst, Rosanoff. Herbartian conceptions of the neuroses—Freud, Adler, Rivers. Association neuroses and conditioned reactions. Objective studies of the neurotic constitution. The psychology of the neurosis. Familiar psychoneuroses—stage-fright and dream. Psychology of stuttering and stammering. Conceptions of aphasia and asymbolia. Psychological correlates of epilepsy. Constitutional psychopathic states. Personality types and the functional psychoses. Mental disorder and the effect of drugs.

Note: In this volume an effort is made to feature the systematic aspects rather than the expediences, and to consider the prevalent concepts, to illustrate and evaluate them, and to relate them to the general body of scientific information about mental activity. Use is made of cases, but these have been selected chiefly as illustrative of the concepts, not as exhaustive life pictures of the individuals. In the development of the text, the author has drawn on his wide and varied experience as a clinical psychologist, a teacher and a student.

HORNEY, KAREN

The neurotic personality of our time. New York: W. W. Norton & Company, Inc., 1937. 299 p. 22 cm. \$3.00. 2954

Contents: Introduction. Cultural and psychological implications of neuroses. Reasons for speaking of a "neurotic personality of our time." Anxiety. Anxiety and hostility. The basic structure of neuroses. The neurotic need for affection. Further characteristics of the neurotic need for affection. Ways of getting affection and sensitivity to rejection. The role of sexuality in the neurotic need for affection. The quest for power, prestige and possession. Neurotic competitiveness. Recoiling from competition. Neurotic guilt feelings. The meaning of neurotic suffering (the problem of masochism). Culture and neurosis. Index.

Note: The author holds that neuroses are generated not only by individual experiences but also by the specific cultural conditions under which we live; in fact that cultural conditions lend weight to the individual experiences and actually determine their particular form. The book deals with the character structure which recurs in nearly all neurotic persons of our time in one or another form.

HORNEY, KAREN

New ways in psychoanalysis. New York: W. W. Norton & Company, Inc., 1939. 313 p. 22 cm. \$3.00. 2955

Contents: Introduction. Fundamentals of psychoanalysis. Some general premises of Freud's thinking. Libido theory. Oedipus complex. Concept of narcissism. Feminine psychology. Death instinct. Emphasis on childhood. Concept of transference. Culture and neuroses. The "ego" and the "id." Anxiety. Concept of the "super-ego." Neurotic guilt feelings. Masochistic phenomena. Psychoanalytic therapy. Index.

Note: This book represents the outcome of the author's dissatisfaction with therapeutic results obtained by accepted psychoanalytical therapy, her doubts as to the validity of some of Freud's concepts, and consequent elimination of the debatable elements and the development of her own theories. Psychoanalysis, she believes, should outgrow the limitations set by its being an instinctivistic and a genetic psychology and should center its attention on actual character structure. The book is directed to specialists in this field, but also to all other persons seriously interested in applying psychoanalysis to education, social work, and anthropology.

HORNEY, KAREN

Self-analysis. New York: W. W. Norton & Company, Inc., 1942. 309 p. 22 cm. \$3.00. 2956 131

Contents: Introduction. Feasibility and desirability of self-analysis. The driving forces in neuroses. Stages of psychoanalytic understanding. The patient's share in the psychoanalytic process. The analyst's share in the psychoanalytic process. Occasional self-analysis. Systematic self-analysis: preliminaries. Systematic self-analysis of a morbid dependency. Spirit and rules of systematic self-analysis. Dealing with resistances. Limitations of self-analysis. Index. 178A

Note: Professional analytical help cannot reach everyone whom it is capable of benefiting; for that reason the question of the extent to which the individual can psychoanalyze himself becomes important. The author discusses the various aspects of the potentialities, as well as the limitations, of self-analysis.

JESSNER, LUCIE, AND V. GERARD RYAN

Shock treatment in psychiatry: a manual. Introduction by Harry C. Solomon. New York: Grune and Stratton, Incorporated, 1941. 149 p. illus. 22 cm. \$3.50. 2956A

Contents (abridged): Part I, Insulin therapy: History. Clinical symptoms of hypoglycemia. Technique of insulin treatment. Modifications. Complications. Changes during treatment. Length of treatment. Evaluation. Part II, Metrazol convulsive treatment: History. Method. Indications and contraindications. Complications. Modifications. Laboratory and clinical findings. Psychological changes. The improvement process. Theories. Results. Part III, Electric convulsive therapy: Apparatus. Technique. Advantages and dangers. Faradic shock method. Comment. Bibliography.

Note: This monograph is designed to meet the need for a brief, practical review of the subject. It contains accounts of personal experiences and expressions of personal opinions. It is thought that the book will be of value not only to the psychiatrist who must either carry out the procedures described or advise as to their value, but to the medical scientist interested in the problems raised by shock therapy.

KAHN, SAMUEL

Psychological and neurological definitions and the unconscious. Boston: Meador Publishing Company, 1940. 219 p. 20 cm. \$2.00. 2957

Contents: Acknowledgments. Introduction by Dr. M. Mortimer Sherman. History and background of Dr. Sigmund Freud and psychoanalysis. Philosophy of the unconscious and psychoanalysis. Subconscious speculations. Glossary. Bibliography. Index.

Note: A compact handbook of definitions of terms used in psychiatry together with a brief statement of important psychiatric and psychological theories and principles. A feature of the work is the long bibliography. The book is meant to be useful to laymen and others who have an interest in psychiatry and related subjects, but who do not have specialized training in these fields.

KALLMANN, FRANZ JOSEF

The genetics of schizophrenia; a study of heredity and reproduction in the families of 1,087 schizophrenics. With the assistance of Senta Jonas Rypins and an introduction by Nolan D. C. Lewis. New York: J. J. Augustin Pub., 1938. 291 p. illus. 25 cm. \$6.00. 2958

Contents (abridged): Genetic and eugenic problems in the field of schizophrenia. Genealogical survey of the probands and their ancestry. Fertility and mortality of the probands and their de-

scendants. Frequency of schizophrenia in the direct and indirect descendants of the probands. Secondary schizophrenias and special cases of schizoid types, twins and organic nervous diseases in the proband families. Frequency of psychopathologic traits other than schizophrenia and schizoidia in the descendants of the probands. The genetic relation between schizophrenia and tuberculosis.

Note: The principal aim of the author's investigations is to offer proof of the inheritance of schizophrenia and to establish a basis for the clinical and eugenic activities of psychiatry.

KANNER, LEO

13676 Child psychiatry. With prefaces by Adolf Meyer and Edwards A. Park. Springfield, Ill.: Charles C. Thomas, 1935. 527 p. 26 cm. Paper, \$4.00; cloth, \$6.00. 2959

Contents: Prevailing methods of studying and handling children's psychiatric problems. Principles of an objective psychobiology and psychopathology of childhood. General considerations with regard to psychiatric examination of children. Outline of a psychiatric case record. The complaint factor. The age factor. The somatic factor. The intelligence factor. The emotional factor. The sex factor. The constitutional factor. The environmental factors. Diagnostic synthesis. General therapeutic considerations. Work with the child. Work with the family. Work with the community. Specific therapeutic aids. Follow-up work. Anergastic reaction forms. Dysergastic reaction forms. Sydenham's chorea. The endocrinopathies. General considerations. The central nervous system. The digestive system. The circulatory system. The respiratory system. The urinary system. The muscular system. The special senses. Intellectual inadequacy. Emotional disorders. Thinking difficulties. The disorders of speech. Habitual manipulations of the body. Faulty feeding habits. Sleep disturbances. Antisocial trends. Sexual difficulties. The attack disorders. The minor psychoses. The major psychoses. Children's suicides. Index.

Note: Based on an extensive experience and study of large numbers of children at the Harriet Lane Home of the Johns Hopkins University and the Henry Phipps Psychiatric Institute, and in the experiences of private practitioners and the child caring agencies of the community (schools, welfare groups, courts, custodial and correctional institutions, orphanages, hospitals). In the United States it is a widely used book.

KASANIN, JACOB SERGEI, EDITOR

1321 Language and thought in schizophrenia. With a preface by Nolan D. C. Lewis. Collected papers, presented at the meeting of the American Psychiatric Association, May 12, 1939, Chicago, Illinois, and brought up to date. Berkeley: University of California Press, 1944. 133 p. 20 cm. \$2.00. 2960

Contents: Introductory remarks, by J. S. Kasanin. The language of schizophrenia, by Harry Stack Sullivan. Methodological approach to the study of schizophrenic thought disorder, by Kurt Goldstein. The disturbance of conceptual thinking in schizophrenia, by J. S. Kasanin. Experimental analysis of schizophrenic thinking, by Norman Cameron. A method for distinguishing and evaluating formal thinking disorders in schizophrenia, by John D. Benjamin. Errors in perception and fantasy in schizophrenia, by S. J. Beck. The specific laws of logic in schizophrenia, by E. von Domarus. Disturbances of thinking in schizophrenia, by Andras Angyal. Concluding remarks, by J. S. Kasanin.

Note: This monograph presents data accumulated from material analyzed from different points of view, with some synthesis and interpretation of results provided by recent investigations in the whole field having to do with the subject of thought and language in schizophrenics.

KLOPPER, BRUNO, AND DOUGLAS MCGLASHAN KELLEY

1328 The Rorschach technique. A manual for a projective method of personality diagnosis. With clinical contributions by Douglas McGlashan Kelley. Introduction by Nolan D. C. Lewis. Yonkers-on-Hudson, N.Y.: World Book Company, 1942. 436 p. illus. 20 cm. \$3.60. 2961

Contents: History of the Rorschach method. Methodological problems. The technique of administration. General scoring problems. Scoring categories for location of responses. Scoring categories for determinants. Scoring categories for content. The technique of tabulation and the use of the record blank. General interpretation problems. The general personality structure. Intellectual aspects of personality. Emotional aspects of personality. Clinical diagnosis. Intracranial organic pathology. Dementia praecox. Mental deficiency. Convulsive states. Psychoneuroses. Depressive states. Miscellaneous clinical problems. Bibliography. Index.

Note: A text and reference book for advanced students of psychology and psychiatry, and for practicing psychiatrists specializing in the Rorschach method of personality diagnosis through the use of ink blots in psychological experimentation. The material is based upon the rather wide literature of the field, to which there are 370 references in the bibliography. The work is intended to serve as an introduction to the technique and to the many modifications and adaptations which have been introduced since 1921. Included is a sample record blank as used by the Rorschach Institute of New York, giving the ten Rorschach figures and the symbols, factors, and determinants for personality evaluation by the examiner.

KRAINES, SAMUEL HENRY

The therapy of the neuroses and psychoses; a socio-psycho-biologic analysis and resynthesis. Second edition, thoroughly revised. Philadelphia: Lea & Febiger, 1943. 567 p. illus. 24 cm. \$5.50. 2962

Contents: Classification of the psychiatric states. The fundamental psychology of the psychoneuroses. Psychoneurotic symptoms expressed primarily by psychologic factors. Psychoneurotic (tension) symptoms due to disturbances in the autonomic nervous system. Sex drives. The principles of psychotherapy. Technique of analysis of personality difficulties. Stress as a determining factor. Retraining attitudes and reaction patterns. Characteristic general attitudes and their treatment. Adjuvant therapy. Suggestions, hypnosis and drugs. Energy mobilization and expression. Prognosis and the curve of improvement. Psychosomatic diseases and their treatment. The psychoses. The organic psychoses. The constitutional psychoses. Shock therapies. Other psychopathic states including psychopathic personality, drug addiction, alcoholism, epilepsy and feeble-mindedness. Neuro-psychiatric states in war time. Appendix.

Note: The primary purpose of this book is to provide practical understanding of psychiatric states and concrete suggestions on treatment. Specific advice is given on methods of interviewing the psychiatric patient. The indications and contraindications for the use of insulin, metrazol, and electric shock therapy are included with true techniques for their application. The final chapter in this edition includes detailed discussions of social psychiatry, selective service problems, psychiatric states in training centers and "nervous breakdowns" in combat.

LANDIS, CARNEY, AND JAMES D. PAGE

Modern society and mental disease. New York: Farrar & Rinehart, Inc., 1938. 190 p. illus. 20 cm. \$1.50. 2963

Contents: Introduction. Nature and classification of mental disease. The prevalence of mental disease. Age. Mental disease in urban and rural environments. The education and economic status of the mentally diseased. Marriage and eugenics. Heredity and sterilization. Mental disease in American population groups. Mental disease in Europe. Outcome of mental disease. Are mental diseases increasing? Conclusions. Appendix: Tables. References. Index.

Note: A brief study of various factors as they concern the incidence, hospitalization, development, and control of mental disease, intended as a reference book for college courses and for practicing physicians and psychiatrists.

LANDIS, CARNEY, AND M. MARJORIE BOLLES

Personality and sexuality of the physically handicapped woman. New York: P. B. Hoeber, Inc., 1942. 171 p. 24 cm. \$3.00. 2964

Contents (abridged): Introduction. Methods, material, and measures. Psychosexual development of the physically handicapped woman. Emotional development with physical handicap. Personality of the patient with spastic paralysis. Personality of the patient with orthopedic disability. Personality of the patient

with cardiac disease. Personality of the epileptic patient. Physical handicap and its personality correlates. Adjustment to handicap. Handicap and the theory of psychosexuality. Mental deviation and handicap. Conclusions and summary. Psychosexual immaturity. Sexual affectivity. General adjustment. Early sex information. Autoerotic practices. Homoeroticism. Premarital heterosexual relations. Masculine protest. Irascibility. Fearfulness. Cosmetic handicap. Home background. Handicap adjustment. Method of adjustment to physical handicap. Appendixes: Evaluation scales. Tables of vital statistics. Intervariable comparisons.

Note: The dynamic effects of four types of physical handicap upon the emotional and psychosexual development of women were studied in a group consisting mostly of non-institutionalized urban subjects. Widely diverse pathological conditions were chosen deliberately in order to discover whether the type of the handicap affected the personality characteristics. The information obtained in this study is here reported in the hope that it will be of value to those in charge of the care, education, and health of the handicapped, and also to the handicapped individual herself. The book is intended for psychiatrists, psychologists, and social workers.

LANDIS, CARNEY, AND OTHERS

136.1
L234
Sex in development; a study of the growth and development of the emotional and sexual aspects of personality together with physiological, anatomical, and medical information on a group of 153 normal women and 142 female psychiatric patients, by Carney Landis, Agnes T. Landis, M. Marjorie Bolles [and others]. With a foreword by Nolan D. C. Lewis. New York: P. B. Hoeber, Inc., 1940. 329 p. illus. 24 cm. \$3.75. 2965

Contents: Introduction. Methods and measures. Quantifying the material. Early background. Adolescence. Adult sex practices. Adult personality traits. Marital adjustment. Physiological and anatomical factors. Normal course of development. Psychiatric patient. Homoerotic woman. Psycho-sexually immature woman. The unhappily married woman. The masculine protest type. The psychopathic personality. Personality structure and function. Sex education. Psychopathology and psychotherapy. Summary. Appendixes: information forms, vital statistics, evaluation scales, interscale relationships. Bibliography. Indexes.

Note: In this book the authors have endeavored to evaluate the importance of psychosexuality in psychopathology by studying the growth and development of emotional and sexual patterns of personality in two groups of women, one normal, the other psychotic or neurotic, and they have supplemented their psychological investigations with physiological, anatomical, and medical data. The personality structure and function in terms of facts and definite patterns of action of the "normal" individual as compared and contrasted with the mentally disordered are investigated and correlated with a number of important constitutional, growth, and educational factors. The book is intended especially for the student of personality formation and for the educator interested in emotional training and development.

LEVINE, MAURICE

610001
L234
Psychotherapy in medical practice. New York: The Macmillan Company, 1942. 320 p. 22 cm. \$4.00. 2966

Contents: Common misconceptions. Methods of psychotherapy. Methods for the general practitioner. Advanced methods for the general practitioner. Methods for the specialist. Suicide risks. The study of psychogenic factors. The choice of cases. Sex and marriage. Basic attitudes toward children. The problem of parents and children. Normality and maturity. Suggestions for further reading. Index.

Note: This is written especially for general practitioners, specialists in fields other than psychiatry, medical students, nurses, social workers, and others who guide individuals with personal and emotional problems. It outlines in non-technical language the methods of psychotherapy that may be used by non-psychiatrists, and distinguishes those that should be reserved for psychiatrists only.

LEWIS, NOLAN DON CARPENTIER

A short history of psychiatric achievement, with a forecast for the future. New York: W. W.

Norton & Company, Inc., 1941. 275 p. 21 cm. (Thomas W. Salmon memorial lectures, New York Academy of Medicine) \$3.00. 2967

Contents: Foreword. Introduction. Perspectives of psychiatric thought—the ancient world. The psychiatric developments of the Middle Ages. English, German, French, Italian, and other concepts of the seventeenth and eighteenth centuries. 1800–1900 A.D.: a century of neuropsychiatric activity. Modern ramifications in psychiatric thought and research. Prospects for future achievements in psychiatric research. Bibliography. Index.

Note: Traces scientific beginnings of psychiatry from ancient times to recent years—the types of thought which became foundations of research in the laboratory and clinic. Formulates suggestions for future progress.

LICHTENSTEIN, PERRY MAURICE, AND S. M. SMALL

A handbook of psychiatry. New York: W. W. Norton & Company, Inc., 1943. 330 p. 21 cm. \$3.00. 2968

Contents: Normal personality functioning. Abnormal behavior. The mental examination. Psychometric tests. Intellectual deficiency (feeble-mindedness). Psychopathic personality. Psychoneuroses. War psychoneuroses. Psychosomatic illnesses. Affect (mood) disorders. Schizophrenia (dementia praecox). Paranoia and paranoid reactions. Delirium and allied conditions. Organic brain disorders. General principles of psychiatric therapy. Therapeutic aids. Index.

Note: A book prepared for those outside the psychiatric profession whose work brings them into contact with mentally disturbed persons. Offers the general practitioner, the nurse, the personnel of hospitals, and social workers the fundamentals of psychiatry as an adjunct to their work.

LINDNER, ROBERT MITCHELL

131
L6880
Rebel without a cause; the hypnoanalysis of a criminal psychopath. Introduction by Sheldon Glueck and Eleanor T. Glueck. New York: Grune & Stratton, 1944. 296 p. 23 cm. \$4.00. 2969

Contents: Introduction. Author's preface. The problem, criminal psychopathy: Psychological aspects. Physiological aspects. Sociological aspects. Political aspects. The method, hypnoanalysis: History and characteristics. Technique. The results: The formal case history. The interview hours (first to forty-sixth). Summary: Hypnoanalytic therapy. Conclusions. Bibliography. Index.

Note: By means of a novel telescoped technique utilizing the methods of psychoanalysis and hypnosis, the author uncovers the crucial episodes and the basic characterologic factors in the life of a youthful criminal, and reconstructs the mental history of a baffling abnormal personality from earliest infancy through a perverted, law-breaking boyhood to the young manhood phase in a penitentiary environment.

LORAND, SÁNDOR, EDITOR

131
L6880
Psychoanalysis today. New York: International University Press, 1944. 404 p. illus. 23 cm. (Medical war books) \$6.00. 2970

Contents: Preface, by Sándor Lorand. Foreword, by Smith Ely Jelliffe. Freud's influence on medicine, by Sándor Ferenczi. Psychoanalysis and internal medicine, by Smith Ely Jelliffe. Psychosomatic medicine, by Flanders Dunbar. Therapeutic approach to psychosomatic problems, by O. S. English. Child analysis, by Marianne Kris. The early development of conscience in the child, by Melanie Klein. Child-parent relationship, by C. P. Oberndorf. Prevention of mental disease in childhood, by Thaddeus H. Ames. Juvenile delinquency, by I. T. Broadwin. Psychoanalytic social work, by Marion E. Kinworthy. Mental hygiene, by Jule Eisenbud. Development of the ego-psychology, by Franz Alexander. Dream mechanisms and interpretations, by Monroe A. Meyer. Sexuality and its role in the neuroses, by A. A. Brill. Hysterias and phobias, by A. Kardiner. Obsessional neuroses, by Bertram D. Lewin. Character formation, by Sándor Lorand. Pathological character formation, by E. Glover. War neurosis, by Ernst Sigmund. Neuroses and psychoses, by Paul Schilder. Manic-depressive psychoses, by Gregory Zilboorg. Schizophrenias, by Leland E. Hinsie. Organic psychoses, by

J. H. W. Van Ophuijsen. The technique of psychosomatic therapy, by Sándor Lőránd. Psychotherapy and psychoanalysis, by Henry A. Bunker. The psychology of religion, by Ernest Jones. Psychoanalysis and sociology, by Heinz Hartmann. Problems of crime, by Paul Schilder. Approaches to art, by Ernst Kris. Psychoanalysis and literature, by Fritz Wittels. Psychoanalysis and anthropology, by Géza Róheim.

Note: A collection of papers by well-known authorities. It is designed to provide a survey useful to psychiatrists, social workers, and others of the present state of psychoanalytic research as it affects various phases of medicine and of culture.

MALAMUD, WILLIAM

Outlines of general psychopathology. New York: W. W. Norton & Company, Inc., 1935. 462 p. 22 cm. \$5.50. 2971

Contents (abridged): Preface. Part I, Introduction: The field of psychopathology. Practical evaluation. The sources and arrangement of the material. Part II, Psychopathological analysis: Phenomenology. The psychopathology of behavior in general. The psychopathology of reception. Intellection. Disturbances in expression. Disturbances in other forms of organized motor expression. Psychopathological disturbances of sleep. Disturbances in the general attitudes. Disturbances in the subjective components of reception. Disturbances in the functions of subjective evaluation. Physiological concomitants. Part III, Determinants, pathogenesis, and relationships. Phylogenetic determinants. Ontogenetic determinants. Relationships within the situation. Organic determinants. Personality structure. Part IV, Psychopathological synthesis: Reaction types. Synthesis on the basis of personality structure. Psychopathological reactions with a disturbance in the functions of ratiocination. Psychopathological reaction types with disturbances in the functions of accretion. Reaction types characterized by disturbances in the functions of self-assertion. Glossary. Bibliography. Index.

Note: A systematic presentation of the nature and causes of abnormal mental activity. Actual observations and analyses of clinical material serve as basis for discussion of psychopathological reactions, and for treatment of the intricate variety of theories in present-day psychiatry.

MASLOW, ABRAHAM HAROLD, AND BÉLA MITTELMANN

Principles of abnormal psychology: the dynamics of psychic illness. New York: Harper & Brothers, 1940. 638 p. 22 cm. \$3.75. 2972

Contents: Introductory survey: a typical case. Some fundamental concepts. The meaning of "abnormal." The normal personality. Psychosomatics: motivation, emotion, etc. Unconscious psychological processes; conflict. Frustration and its effects. Disturbances of self-evaluation. Experimentally produced behavior disturbances. The precipitation and maintenance of psychic illness. Genetic, constitutional, and environmental determinants in mental disease. Cultural and social factors in psychopathology. Origins of psychopathology in childhood. Origins of psychopathology in parent-child relations. Aims and nature of psychotherapy. Techniques of psychotherapy. Psychoanalytic therapy. Reactions to shock, threat, or bodily injury. Reactions in which anxiety or phobia predominate; in which obsessions and compulsions predominate; in which disturbed states of consciousness and of memory predominate; in which bodily complaints predominate; in which organ neuroses predominate. Manic-depressive reactions; involutional melancholia. Schizophrenic reactions. Organic psychotic reactions. Feeble-mindedness and stupidity. Bibliography. Glossary. Appendixes. Index.

Note: A treatment of the various phases of abnormal psychology, written by a college teacher who has done considerable research in this field and a practicing psychiatrist who has also taught in a number of institutions in Europe and New York. The treatment is dynamic and functional rather than static, and makes clear why people have symptoms, what they mean, what functions they serve, how they relate to each other, and what kinds of people are likely to have them—in other words, the meaning, usefulness, and purposefulness of psychological reactions. Psychotherapy is given considerable attention.

MOORE, THOMAS VERNER

The nature and treatment of mental disorders. Foreword by Edward A. Strecker. New York: Grune & Stratton, 1943. 312 p. illus. 22 cm. \$4.00. 2973

Contents: Part I, Psychopathology: The concept of mental disorder. Type concepts of psychopathology. Some fundamental principles of psychopathology. The origin and course of some common phobias. Part II, Therapy by psychological analysis: Free association and dream analysis. Interpretation of the life history of free association. Part III, Miscellaneous techniques: Mental disorders secondary to organic conditions. General reorganization of the patient's life. Mental difficulties arising from problems of married life. Family problems and their treatment. Mental therapy by family reorganization. Educational therapy. Bibliotherapy. Hysterical manifestations in children. Part IV, Organic emotional disorders: The physiology of the emotions. Pharmacological treatment of mental disorders. Appendix. Indexes.

Note: A contribution to the understanding of mental disorders and an illustration of a wide variety of techniques in dealing with the many and varied problems confronting the psychiatrist. Classic theories of psychopathology are outlined, criticized, and supplemented, and modern studies of the emotions are also evaluated. Illustrated by excerpts from case histories in the author's experience.

MORGAN, JOHN JACOB BROOKE

The psychology of abnormal people, with educational applications. Second edition. New York: Longmans, Green and Co., 1936. 605 p. illus. 21 cm. (Longmans' education series) \$3.25. 2975

Contents: The signs and causes of mental disorders. Disorders of sensation. Disorders of perception. Disorders of association. Delusions. Abnormalities of memory. Emotional disorders. Motor disorders. Abnormalities of intelligence. Personality. Sleep and dreams. Suggestion and hypnosis. Benign mental disorders. Disorders of regression. Compensatory disorders. Episodic disorders. Treatment and prevention. Index.

Note: The text is designed to aid students of college level as well as the intelligent layman to an understanding of the more common weaknesses in human nature to the end that character and personality deformities may be avoided. Abnormalities in human mental life are shown to be aberrations of normal traits, and the life experiences of the individual are discussed insofar as they cause and affect distortions. Chapter glossaries of technical terms enable the student and general reader to understand the meaning of the expressions used in the text. Study projects and reading references are given at the end of each chapter. The emphasis of the second edition is upon recent research in psychology, physiology, education, and medicine, while new clinical, experimental, and factual material from the literature published between 1928 and 1936 has been added.

MOULTON, FOREST RAY, EDITOR

Mental health. Publication committee: Walter L. Treadway, chairman, Nolan D. C. Lewis, Abraham Myerson and others. Forest Ray Moulton, editor, Paul O. Komora, associate editor. Lancaster, Pa.: Published for the American Association for the Advancement of Science by the Science Press, 1939. 470 p. illus. 26 cm. (The American Association for the Advancement of Science. Publication no. 9) \$4.50. 2976

Note: This symposium was organized in collaboration with the American Psychiatric Association and with the cooperation of the United States Public Health Service and the National Committee for Mental Hygiene. The 43 papers presented by 45 specialists deal with orientation and methods in psychiatric research, sources of mental disease, physical and cultural environment in relation to conservation of mental health, mental health administration, professional and technical education in relation to mental health. The papers in each of these groups are supplemented by summaries of the formal and informal discussions which were held at the actual meeting. Bibliographies of varying lengths are included with each paper.

MUNCIE, WENDELL

Psychobiology and psychiatry; a textbook of normal and abnormal human behavior. With a foreword by Adolf Meyer. With 69 illustrations. 1921

tions. St. Louis: The C. V. Mosby Company, 1939. 739 p. illus. 25 cm. \$8.00. 2976a

Contents: Part I, Psychobiology, the study of normal behavior: Historical and philosophical bases. Student's personality study. Part II, Abnormal behavior, pathology and psychiatry: Historical account. Examination methods and immediate findings. Detailed study of the main reaction types (pathergasias). Major reactions (holergasias). Thymergasic reactions: elations. Topical delusional states and para-reactions, parergasia. The support disorders (dysergasia). Acquired organic deficit reactions (aner-gasia). Part III, Treatment: General bases and the procedure. Important therapeutic aids. Treatment of minor reactions. Of major reactions (holergasias). Para-reactions. Dysergasic reactions. Organic deficit states. Part IV, Historical survey in bibliography of the development of the concepts underlying the principal reaction sets (except the organic deficit states): Neurasthenia. Hypochondriasis. Anxiety states. Obsessive-compulsive-ruminative-tension states, by Adelaide Johnson. Hysteria. Manic-depressive psychoses, by Marion Booth. Paranoia and paranoid conditions. Parergasia (schizophrenia). Dysergasia, by Marion Booth. Index.

Note: This book, written at the request of Dr. Adolf Meyer, attempts to give a fair account of the conceptions, teaching, and working methods of the Henry Phipps Psychiatric Clinic of the Johns Hopkins Hospital. It is intended primarily for the use of students and consequently much detail has been omitted which might be confusing to beginners. Child psychiatry is not dealt with because it has been adequately presented elsewhere, and the interrelated problems of psychiatry and general medicine are only suggested because of the wide scope of this field of study.

NOYES, ARTHUR PERCY

Modern clinical psychiatry. Second edition, rewritten and enlarged. Philadelphia: W. B. Saunders Company, 1939. 570 p. 23 cm. \$5.00. 2977

Contents: Development and purpose of the mind. Psychic energy and the dynamics of behavior. Conscious and unconscious processes. Mental mechanisms and motives. Cause and nature of mental disease. Symptoms. Psychobiological constitution and reaction types. Examination of the patient. Psychoses with syphilitic meningoencephalitis. Psychoses with syphilis of central nervous system. Psychoses with epidemic encephalitis. Psychoses with other infectious diseases. Alcoholic psychoses. Psychoses due to drugs or other exogenous toxins. Traumatic psychoses. Psychoses with cerebral arteriosclerosis; with other disturbances of circulation; with convulsive disorders (epilepsy). Senile psychoses. Involuntary psychoses. Psychoses due to metabolic and endocrine diseases; with brain tumor; with organic changes of nervous system. Psychoneuroses. Manic-depressive psychoses. Schizophrenia. Paranoia and paranoid conditions. Psychopathic personality. Mental deficiency. Psychiatry and general medicine. Index.

Note: Primarily intended for the general practitioner, this book is concerned with the diagnosis and treatment of both major and minor psychiatric diseases, emphasis being on the problems most likely to arise in general practice. The anatomic, physiologic, chemical, and psychologic factors in mental disease are explained and much stress is placed on the underlying causes. Such matters as history taking, tests, and gathering of diagnostic evidence are brought out. The use of drugs, psychotherapy, and dietotherapy is given and all psychiatric terms are defined in the text as they are used. A bibliography is placed after each chapter.

PORTEUS, STANLEY DAVID, AND OTHERS

The practice of clinical psychology by Stanley D. Porteus, with the assistance of Mary Hunter and Colin J. Herrick. New York: American Book Company, 1941. 579 p. illus. 20 cm. (American psychology series, H. E. Garrett, general editor) \$3.25. 2978

Contents: The role of the clinical psychologist. Survey of clinical problems and methods. Biological basis of clinical psychology. The nature of intelligence. The Binet scale: old and new. Performance tests as diagnostic measures. Measures of social capacity and personality. Special supplementary tests. The feeble-minded child. Appendix: Educational attainment scale. Abnormal children. Some specific clinical problems. Predisposing conditions in delinquency. Delinquent personality and treatment. The criminal. Examination of young children. The

dull and backward child. Diagnosis of reading disabilities; appendix: Learning gradients. Psychoanalysis and psychology. Psychological analysis. Vocational guidance. Appendix: Nurse's social rating scale. Clinical service and relationships. Index.

Note: A report of the senior author's observations and practice in the field of clinical psychology at the University of Hawaii, Honolulu. On the basis of his experience, he has formed and here sets forth definite opinions regarding the value of various approaches to the study of the human personality. Part of the chapter on the examination of young children and the section on the Rorschach test were written by Dr. Mary Hunter. The chapter dealing with the diagnosis of reading disabilities was contributed by Dr. Colin J. Herrick.

PREU, PAUL WILLIAM

Outline of psychiatric case-study, a practical handbook. With foreword by Eugen Kahn. Second edition, revised and enlarged. New York: P. B. Hoeber, Inc., 1943. 279 p. illus. 19 cm. \$2.75. 2979

Contents (abridged): I, Outline of psychiatric history-taking and behavioral examination for use with the adult: Psychiatric history-taking. Behavioral examination. Outline for use with stuporous or comatose patients. Accessory behavioral examinations. Psychologic and social service consultations. Physical examination. Accessory somatic examinations. Nursing records and notes. Progress notes. II, Outline for use with the child: Chapter-headings the same as those listed above. Index.

Note: This manual was prepared originally for use in the New Haven Hospital, from material which had been put to the test of practical usefulness. It is more detailed than the usual manual because it is intended especially for use by medical students who wish to make a comprehensive study of each case. Synopses and leading headings have been included, however, for physicians who cannot undertake such detailed examinations. In this second edition, the outline for use with the child has been made a separate and independent section. Among other changes in the section for use with the adult, the complaint and present illness or problem has been moved to the first place in the history; the family cultural background and emotional relationships have been considerably expanded; a special outline for examination of stuporous or comatose patients, and the patient's present social situation have been added.

RAY, MARIE BEYNON (LYONS)

Doctors of the mind, the story of psychiatry. Illustrations by Ruth Ray. Boston: Little, Brown and Company, 1942. 335 p. illus. 22 cm. \$3.00. 2980

Contents: Author's note. Introduction. Degenerate Adam or perfected ape? Almost human. Dead men do tell tales! The animal that speaks. The gentleman in the lilac robe. The nasty little science. No psychologists need apply. The three grand old men. Fighting fire with fire. I saw a resurrection. The insulin hour. And the devils departed. Shocked into their senses. Formula for a superman. Parallel lines meet. Sometimes there is a little queer. Acknowledgments. Index.

Note: A history of the birth of psychiatry during the first World War and of its growth up to the early part of the current conflict. The book is sympathetic to the science, and the author seeks to interpret it and its practitioners to the lay reader. The writer has drawn upon interviews with doctors as well as literature in journals, books, etc., and has sought to make every conversation and incident as accurate as possible. The hopes for the future of curing all or nearly all mental cases and of building a better race through the teachings of psychiatry are emphasized.

ROSANOFF, AARON JOSHUA

Manual of psychiatry and mental hygiene. Seventh edition, rewritten and enlarged. New York: John Wiley & Sons, Inc., 1938. 1091 p. illus. (part col.) 23 cm. \$7.50. 2982

Contents (abridged): Part I, General psychiatry. Part II, Special psychiatry. Part III, The practice of psychiatry. Part IV, Mental hygiene. Part V, Special diagnostic procedures. Part VI, Appendices. Glossary and index of subject and authors.

Note: This book represents an attempt to give a comprehensive view of the entire field of psychiatry and mental hygiene. With the exception of five chapters in Part V, dealing with some of the special diagnostic procedures, the book has been almost entirely

rewritten in this edition. However, the author's purpose has remained the same: to make a working manual by presenting a description of the material of the psychiatric clinic, and methods of dealing with it—techniques of diagnosis, prevention, and treatment. In Part I a special chapter has been introduced, dealing with neuropsychiatric syndromes, and pointing out, in each case, the many mechanisms of etiology and pathogenesis by which the given syndrome may be produced. In Part II a classification based mainly on etiology has been employed. The discussion affords, as far as possible, a full view of etiology, pathogenesis, manifestations, course, and outcome; and, by natural induction, offers guidance toward the principles of diagnosis, prognosis, prevention, and treatment. The case method has been freely used. At the end of each chapter the psychiatrist will find a list of references to original sources, constituting a selected bibliography.

SCHILDER, PAUL

Psychotherapy. New York: W. W. Norton & Company, Inc., 1938. 344 p. 22 cm. \$4.00. 2983

Contents: Some general principles. Psychophysiological relations. Symptomatology of organic disease from the point of view of psychology. Symptomatology of mental suffering. Symptoms which make others suffer. Somatic health, psychic health, as an experience. Technical tools of psychotherapy. Relation between physician and patient. Psychotherapeutic systems. Treatment of specific types of neuroses, psychopathies, and psychoses. Bibliography. Index.

Note: This volume is intended to serve as a textbook for the student, the physician, and the psychiatrist in their approach to psychotherapy, which in the author's opinion is not an art but a technical procedure based upon scientific principles with a technique no less complicated than that of any other branch of medicine. As the author remarks, the book may prove interesting also to the psychologist, the educator, and the sociologist in that it will show them something of the physician's approach to his patients. The facts found by psychoanalysis, the psychoanalytic theories, and technical achievements are embodied in this book, but it is not an introduction to psychoanalysis. Neither is it a textbook of psychiatry or a book on neuroses.

SLADEN, FRANK JOSEPH, EDITOR

Psychiatry and the war; a survey of the significance of psychiatry and its relation to disturbances in human behavior to help provide for the present war effort and for post war needs. Springfield, Ill.: Charles C. Thomas, 1943. 505 p. 23 cm. \$5.00. 2984

Contents (abridged): Values of this conference, by Frank J. Sladen. Foreword, by Henry S. Hubert. Part I, Philosophy of psychiatry: Introduction, by Raymond W. Laggoner. Psychiatry, its meaning and scope, by Adolf Meyer. Its relationship to psychological schools of thought, by Heinz Hartmann. Its significance in internal medicine, by Oskar Diethelm. In general surgery, by Percival Bailey. In pediatrics, by Leo Kanner. In geriatrics, by Carl Camp. Part II, Research in psychiatry: Introduction, by John M. Morsey. Future of medical research, by Cyrus C. Sturgis. The controversial in psychiatry, by C. Macfie Campbell. Psychological research in psychiatry, by Norman Cameron. Physiological research, by Edwin Francis Gildea. Psychosomatic research, by Franz Alexander. The future in psychiatry, by Nolan D. C. Lewis. Part III, Psychiatry in the training, experience and education of the individual: Introduction, by Orus R. Yoder. Psychiatry and education, by Temple Furling. Infancy, pre-school and elementary schools, by Leslie B. Mohman. Secondary schools and colleges, by Frederick H. Allen. Courtship and marriage, by Andrew H. Woods. Family life, by Arnold Wesell. Religion, by Otis R. Rice. Psychiatry in communities, rural and urban, by George H. Stevenson. Its relationship to sociology and criminology, by William Nealy. Part IV, Psychiatry and the war: Introduction, by Thomas J. Meldt. Psychiatry in the army, by William Porter. In the navy, by Forrest Harrison. In aviation, by Eugen Reinartz. In civilian defense, by Leo H. Hartemeier. In national and international relationships, by John W. Appel. Post-war psychiatric perspectives, by Lawrence Kolb. Preventive psychiatry, by George S. Stevenson. Psychiatry in industry, by Ernest E. Hadley. Psychiatry and morale, by Harry Stack Sullivan. And propaganda, by Foster Kennedy. Part V, Two symposia, reviewing the papers given on previous days.

Note: This volume constitutes a record of the Conference on Psychiatry held at Ann Arbor, Michigan, October 22, 23, and 24, 1942, at the invitation of the University of Michigan and the McGregor Fund. While the field covered by the papers is an exceedingly broad one, the significance of psychiatry in the solu-

tion of the problems of human relationships, the main purpose of the conference was to help provide for the present war effort and for post-war needs. Thus the material in the first three parts served as a foundation or background for consideration of Part IV, psychiatry and the war. A brief summary of the contents is given at the beginning of each chapter. The book is intended for psychiatrists and the medical profession as a whole.

SLAVSON, SAMUEL RICHARD

An introduction to group therapy. New York: The Commonwealth Fund, 1943. 352 p. 23 cm. \$2.00. 2985

Contents: Principles of group therapy. The practice of group therapy. Two records of group meetings. The choice of clientele. The problem of grouping. The function of the adult. The therapeutic process. Five typical cases. Variations in group treatment. Outline for a referral summary. Outline for a progress report. Outline for integration conferences. Outline for follow-up study. Group therapy terms and phrases. General index.

Note: Group therapy has been employed at the Jewish Board of Guardians in New York City since 1934. This book is based upon the detailed records of some 750 children in 55 groups, each of which functioned for about two years. The records included follow-up studies of clients as to their adjustment in home, school, unorganized play group, and organized recreational activities. Out of this extensive experience has come an understanding of the principles underlying group therapy, which is not merely group activity but a method of psychotherapy to be employed along with psychiatric case work and psychological services, and only after a diagnostic examination indicates that it is needed. This thoughtful discussion indicates when, with whom, for what purposes, and how group therapy may be used. The author presents typical group therapy cases and gives outlines for referral summary, progress report, integration conference, and follow-up study.

STERN, EDITH (MENDEL), AND SAMUEL W. HAMILTON

Mental illness; a guide for the family. New York: The Commonwealth Fund, 1942. 151 p. 21 cm. \$1.00. 2986

Contents: A healthy attitude toward mental illness. When mental illness strikes. Why hospitalize? Private or public hospital? Getting the patient admitted. Taking the patient to the hospital. Leaving the patient at the hospital. The first month in the hospital. The hospital world. Life in a mental hospital. Some treatments for mental illness. The family and the hospital. Letters and visits. Toward discharge. When the patient comes home. The permanence of recovery. Continued care. There's more you can do. Appendix. Glossary.

Note: In a simple and straightforward way this book for lay readers removes the dread of mental illness and the mystery of mental hospitals; it guides the family through the difficult experience. The authors show that mental illnesses are illnesses like any others. They take the reader behind the scenes in mental hospitals to show them how they are set up to give care and treatment. They offer specific directions for each step—from the selection of the hospital to the reception of the patient back home after discharge.

STRECKER, EDWARD ADAM

Fundamentals of psychiatry. 15 illustrations. Philadelphia: J. B. Lippincott Company, 1943. 213 p. illus. 20 cm. \$3.00. 2987

Contents (abridged): The importance and the opportunities of psychiatry. Etiology. Classification of mental diseases. Methods of examination and symptoms. Organic psychoses. Toxic psychoses. Functional psychoses and psychoneuroses. Defect reaction types. Psychiatry of the war. The nurse and the psychiatric patient. Index.

Note: In this handbook, which has grown out of the teaching experience of the author, the purpose is to present the information on this subject which is essential to the physician in his daily practice and to the undergraduate medical student. It is intended also for nurses. A glossary is given on the lining papers.

STRECKER, EDWARD ADAM, AND FRANKLIN G. EBAUGH

Practical clinical psychiatry. Section on psychopathological problems of childhood by Leo

Kanner. Fifth edition. Philadelphia: The Blakiston Company, 1940. 728 p. illus. 22 cm. \$5.00.

2988

Contents: Introduction. Psychobiological conceptions of mental disorders. Practical aids in the study of mental disorders. Methods of psychiatric examination. Organic reaction types. Delirious-hallucinatory reactions. Affective reaction types. Schizophrenic reaction types. Paranoid reaction types and paranoia. Reactions of developmental and constitutional defects. Psychoneurotic reaction types. Psychopathological problems of childhood. Glossary. Index.

Note: This book was written to supply the medical student with a not too lengthy source of information on this subject. In it the authors have tried to furnish a relatively rapid method of grasping essentials of diagnosis and treatment, and also to stress the important points of contact between psychiatry, internal medicine, and the specialties. The method of case presentation is used as the most practical one for the beginner.

TERRY, GLADYS (COMBS), AND THOMAS A. C. RENNIE

Analysis of parergasia. With an introduction by Adolf Meyer. New York: Nervous and Mental Disease Monographs, 1938. 202 p. illus. 23 cm. (Nervous and mental disease monograph series no. 64) \$4.00.

2989

Contents: Introduction. Material and method of study. Discussion of clinical types—variety and range of clinical reaction patterns. Study of the life history. Outcome. Assets. Summary. Seventeen individually coded and charted case histories illustrative of six clinical reaction patterns. Index.

Note: A study of 77 cases diagnosed as parergasia and studied at the Henry Phipps Psychiatric Clinic. As complete a historical account of each as possible is furnished, and observations for at least a two-week period are recorded. The 17 cases for which detailed records are provided are typical of six clinical reaction patterns.

TOWLE, CHARLOTTE

Social case records from psychiatric clinics. Chicago: University of Chicago Press, 1941. 455 p. 22 cm. (The University of Chicago social science series) \$3.00.

2990

Note: A collection of twelve case histories prepared primarily for use in courses of psychiatry and intended as a basis for study and group discussion. Case-workers and social workers may also find the volume of use as background material. The case records represent, with few exceptions, the work of students and accordingly give evidence of varying degrees of skill, but such choice was intentional in order to confine the material to that which the student might be expected to achieve himself. Cases presenting limited treatment possibilities have been included in order to prepare the student for the more complex problems encountered in actual work and to show the limitations of existing knowledge. Discussion notes point out the important aspects of each problem, and a lengthy bibliography follows each case history.

WALLIN, JOHN EDWARD WALLACE

Minor mental maladjustments in normal people; based on original autobiographies of personality maladjustments. A casebook for the use of students of mental hygiene, psychology, education, child development, sociology, and the formation of personality traits. Durham, N.C.: Duke University Press, 1939. 298 p. 24 cm. (Duke University publications) \$3.00.

2991

Contents (abridged): Purpose and nature of the investigation of mental, educational, and social maladjustments, and the practical contribution which this book is expected to make. Fears and phobias. Dreads, anxieties, and worries. Bashfulness, timidity, lack of self-confidence, and seclusiveness. Feelings of inferiority and inadequacy. Obsessions and compulsions. Dreams, nightmares, somnambulism, and somnoliquism. Daydreaming. Emotional disturbances and maladjustments produced by specific processes of emotional conditioning. Difficulties produced by

criticism, sarcasm, ridicule, nagging, and threats. Reactions to unfavorable comparisons. Effects of superstitious beliefs. Effects of parental behavior patterns and home treatment. Effects of the school situation and teacher attitudes and behavior patterns. Attitudes or behavior patterns induced by physical handicaps, defects, or appearances. Food fads, antipathies, caprices, and idiosyncrasies. Index.

Note: Designed for specialists, teachers, students, and laymen. It is based upon factual autobiographies gathered from intellectually normal and superior people. The ways in which various maladjustments arise from the process of early conditioning are demonstrated.

WHITE, WILLIAM ALANSON

Outlines of psychiatry. Fourteenth edition. Washington, D.C.: Nervous and Mental Disease Publishing Company, 1935. 494 p. illus. 23 cm. (Nervous and mental disease monograph series. No. 1) \$4.00.

2991a

Contents: Preface. Part I, General: Descriptive psychology. Genetic psychology. The nature of mental disorder. Classifications of mental disorders. Treatment. General symptomatology. Part II, Clinical paranoia and paranoid states: Manic-depressive psychoses. Paresis. Dementia precox. The presenile, senile and arteriosclerotic psychoses. The infection-exhaustion psychoses. The toxic psychoses. Psychoses associated with organic diseases and injury of the brain. Symptomatic psychoses. Borderland and episodic states. Idiocy and imbecility. Part III, Methods of examination: Principles and methods of examination. Kuhlmann and Binet-Simon tests. Suggestions for writing a mental history. Index.

Note: A standard American textbook. This edition varies from preceding editions by the amplification of chapters to include material on the symptomatology of psychoses and the addition of an author index. Illustrations depict patients typifying psychotic states.

WILSON, JOSEPH G., AND M. J. PESCOR

Problems in prison psychiatry. Caldwell, Idaho: The Caxton Printers, Ltd., 1939. 275 p. 23 cm. \$3.00.

2991b

Contents: Historical considerations. A difficult problem. Attempts to solve the problem. The normal prisoner. The feeble-minded prisoner. The psychoneurotic prisoner. The psychopathic prisoner. The psychotic (insane) prisoner. The neuropathic prisoner. The homosexual prisoner. The recidivist. Discipline in prison. The value of imprisonment. Landmarks and dates in development of prisons. Index.

Note: An attempt to analyze some of the mental health problems or psychiatric aspects of correctional institutional procedure. The authors question by implication whether the present state of scientific knowledge concerning human conduct or behavior is being applied to penal and correctional procedure and have recorded some of the psychiatric problems encountered in their wide experience and intimate contact with prisoners. The value of education, rehabilitation, and reformation is stressed and the possibilities of reintegration of the entire personality are pointed out. There are several statistical analyses based on case histories.

WITMER, HELEN LELAND

Psychiatric clinics for children, with special reference to state programs. New York: The Commonwealth Fund, 1940. 437 p. 23 cm. \$2.50.

2992

Contents: The background: theoretical and historical. The basis of clinical child psychiatry: psychiatric theory and social attitudes and institutions. Evolution of psychiatric clinics for children. A survey of state-financed clinics. Sources and plan of the study. Clinics conducted by state hospitals for mental disorders. Case studies of two state hospital clinics. Clinics conducted by psychopathic hospitals. Clinics conducted by central departments of state governments. Principles for future programs. Organization on the basis of function. Prevention of psychosis and crime as a clinic objective. Psychiatric service for the feeble-minded and neurologically disabled. Modern child guidance as a means of promoting mental health. Planning effective psychiatric service for small communities. Index.

Note: This study and evaluation of programs which offer child guidance clinic service on a state-wide basis included a review

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and reconsideration of the philosophy, the practice, the objectives, and the achievements of clinical child psychiatry. Part I describes the background of clinical child psychiatry in the United States and the cultural setting in which it operates. Part II discusses clinics financed by state governments, tells how they are conducted, and describes and evaluates typical policies. Part III suggests that many of the present difficulties of such clinics are traceable to lack of well-defined objectives, and examines the alternative possibilities in the light of modern psychiatric theory and practice.

ZILBOORG, GREGORY, AND GEORGE W. HENRY
A history of medical psychology. New York:

W. W. Norton & Company, Inc., 1941. 606 p.
illus. 24 cm. \$6.00.

2993

Contents: Foreword. Prologue. Primitive and Oriental medical psychologies. The Greeks and the Romans. The great decline. The restless surrender to demonology. The blows of the witches' hammer. The first psychiatric revolution. The age of reconstruction. The discovery of neuroses. The era of systems. The second psychiatric revolution. Epilogue. Organic mental diseases. Mental hospitals. Index.

Note: Beginning with the cleavage between medicine and mental disease, this book shows the gradual introduction of science into the field of mental disorder with the contributions of medical men from the Middle Ages to Freud.

MENTAL HYGIENE

BILLS, ARTHUR GILBERT

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B4974
The psychology of efficiency; a discussion of the hygiene of mental work. New York: Harper & Brothers, 1943. 361 p. illus. 20 cm. (Under the editorship of Gardner Murphy) \$2.75. 2994

Contents: The thinking machine. Regulating the thinking machine. Mental work and mental fatigue. The subjective aspects of fatigue. General and specific fatigue. Rest and recovery from mental work. Sleep: its nature and control. Attention and distraction. Motives and incentives in work. Friction and lubrication. Suggestion and its effect on efficiency. Physical conditions of efficiency. Gaining efficiency through learning. The effect of age changes on efficiency. Self-appraisal and self-improvement. Organization and planning. Effective thinking. Glossary. Test items for review. Subject index. Author index.

Note: A volume whose purpose is to fill the need for a book on the subject of mental efficiency, that is, how the average, normal, well-adjusted person, geared to a daily program of work, can manage to get the most efficient service from his own mental equipment. References and supplementary readings at the ends of the chapters.

BURNHAM, WILLIAM HENRY

131
B924
The wholesome personality; a contribution to mental hygiene. New York: D. Appleton and Company, 1932. 713 p. 19 cm. \$3.25. 2995

Contents: The background of personality. The development of the ego. Other factors of personality. Unconscious attitudes. Personality differences. The wholesome personality. The objective attitude. Disintegrating conditions. Fear and the personality. Mental conflicts. Survivals and pitfalls. The problem of failure. Other problems. The problem of the social group. The renaissance of personality. The renaissance of personality: the discovery of self. The genetic point of view. Conclusion.

Note: In a style that is easy to read and readily understood this study of how to develop and preserve an integrated personality surveys the field in a practical fashion. Focussed on the normal rather than the pathological and on the prevention rather than the cure of mental disorder, the book explains of what "personality" consists and discusses the conditions that seem favorable to its wholesome development and some of the conditions that are most likely to produce personality disorders. In a sense, the book is a continuation of the author's *The normal mind*, New York, 1924.

CRAWFORD, NELSON ANTRIM, AND KARL A. MENNINGER, EDITORS

The healthy-minded child. New York: Coward-McCann, Inc., 1930. 198 p. 19 cm. \$1.75. 2996

Contents: What is a healthy mind? by Karl A. Menninger. Mental health in the home, by George K. Pratt. A mother looks at mental health, by Lillian M. Gilbreth. Mental health and the school—a psychiatrist's view, by Herman M. Adler. Mental health and the school—a teacher's view, by Bertrand Russell. The physical basis of mental health, by Josephine A. Jackson. The formation of habits, by Lawson G. Lowrey. Lying, stealing, and running away, by Nelson Antrim Crawford. Mental health in youth, by Ernest R. Groves and Gladys H. Groves. Play and mental health, by William C. Menninger. Sexual development and sex education, by Karl A. Menninger. The child's reading, by Nelson Antrim Crawford. Useful books on the mental health of the child.

Note: Popular articles, many of them reprinted from *The Household magazine*, designed to show how scientific knowledge may be applied in the raising of children to insure their mental health.

CROW, LESTER DONALD, AND ALICE CROW

Mental hygiene in school and home life, for teachers, supervisors, and parents. New York: McGraw-Hill Book Company, Inc., 1942. 474 p. illus. 23 cm. (McGraw-Hill series in education; Harold Benjamin, consulting editor) \$3.00. 2997

Contents: Part I, Mental hygiene and the individual: Mental hygiene—its nature and function. The individual—his nature and needs. Part II, Adjustments and maladjustments in human behavior: The emotions and individual adjustment. Importance of conflicts in adjustment. Significance of adjustment mechanisms. The problem of mental illness. Part III, Home, vocational, and community factors of adjustment: Factors of home and family adjustment. Factors of vocational adjustment. Community factors of adjustment. Part IV, Mental hygiene in relation to school functions and personnel: Life adjustments and the curriculum. The teacher and his adjustments. Hygienic supervision. Behavior control and school adjustment. Value and use of diagnostic techniques. Guidance as related to mental hygiene. Part V, Hygienic adjustment of the developing person: The adjustment of the pre-school child. The adjustment of the elementary-school child. The adjustment of the secondary-school pupil. The adjustment of the college student. The adjustment of the adult. The adjustment of the physically handicapped. Personality—the resultant of living. Author index. Subject index.

Note: This is a book intended for those who have, through previous reading, study, or experience, achieved a basic understanding of human behavior, particularly teachers, parents, and others responsible for the rearing and training of young people. The approach is from the standpoint of mental hygiene, and reference to the psychiatric implications of mental disorder is in general avoided. The authors have included many examples gathered from their personal experience. Questions and topics for discussion and suggestions for further reading are included at the end of each chapter.

FENTON, NORMAN

Mental hygiene in school practice. Stanford University, Calif.: Stanford University Press, 1943. 455 p. illus. 23 cm. \$4.00. 2998

Contents: How mental hygiene serves the school: Mental hygiene in educational practice. Introducing mental hygiene into the school. Mental hygiene and guidance. Personnel and organization. The guidance conference. Fundamental points of view in the practice of mental hygiene: Wholesome personality and its development. The objective attitude. Understanding pupil attitudes and behavior. Individual guidance, the theory and practice of school case work: The elements of school case work. The diagnostic study of children's needs. The origins of symptoms and problems. Symptom-formation as adjustment. The formulation of plans for the child's welfare. The follow-up study in school case work. Mental hygiene and the teacher: Teaching as an occupation. Mental health of teachers. Some brief case histories of teachers. Personality maladjustments among teachers and their alleviation. Human relations and school morale. Mental hygiene and community life: The school's relation to mental hygiene in the home. Mental hygiene and the community. Mental hygiene and social progress. Author index. Subject index.

Note: Practical suggestions for making schools more effective with respect to both development of personality in pupils and mental health in teachers. Relations between school and community are treated with special reference to wholesome environment in home. Planned as a text in mental hygiene for educators, classroom teachers, and administrators, it considers problems of children in general, avoiding undue concentration on the minority with exceptional needs.

37015
685m
GRIFFIN, JOHN DOUGLAS MORECROFT, AND OTHERS

Mental hygiene; a manual for teachers, by J. D. M. Griffin, S. R. Laycock, and W. Line. New York: American Book Company, 1940. 302 p. 21 cm. (American psychological series, H. E. Garrett, general editor) \$2.00. 2999

Contents: A challenge to education. The nature of development. Symptoms of poor personality development. The diagnostic approach to classroom problems. Limited mental ability. Superior mental ability. Physical handicaps. The home and the community. The school problems of organization and administration. The teacher. Mental-hygiene services and the school. Education and mental health. Index.

Note: Prepared by the Division on Education and Mental Health of the National Committee for Mental Hygiene, Canada, this manual aims to promote the integration of mental hygiene and education. The approach has been made from the angles of psychiatry, psychology, and education. Its purpose is to provide the teacher with a better understanding of the personal and social problems of our present culture and to suggest effective methods of control, particularly in problems of child behavior and development. References occur at the end of some of the chapters.

GROVES, ERNEST RUTHERFORD, AND PHYLLIS BLANCHARD

131
2917
Introduction to mental hygiene. New York: Henry Holt and Company, 1930. 467 p. 22 cm. (American social science series. General editor, H. W. Odum) \$3.40. 3000

Contents: The origin and development of mental hygiene. The psychiatric and psychological background. The problem of mental disease. Delinquency as a mental health problem. Mental hygiene and childhood. Mental hygiene and adolescence. Mental hygiene and marriage. Mental hygiene and the schools. Mental hygiene in the college and the university. Mental hygiene in business and industry. Recreation and mental adjustments. Mental hygiene and religion. Mental hygiene aspects of literature. Social work and mental hygiene. Mental hygiene and public opinion. The larger aspects of mental hygiene. Index.

Note: An introduction to the fundamentals and aims of the mental hygiene movement in the United States as represented by the work of the National Committee on Mental Hygiene. The material of the present text is arranged for classroom study in college courses in psychology and sociology, but is suitable for continuous reading by the layman. There are fairly long bibliographies following each chapter.

GROVES, ERNEST RUTHERFORD, AND PHYLLIS BLANCHARD, EDITORS

131
2917
Readings in mental hygiene. New York: Henry Holt and Company, Inc., 1936. 596 p. 22 cm. \$2.75. 3001

Contents: The origin and development of mental hygiene. The psychiatric and psychological background. The problem of mental disease. Delinquency as a mental health problem. Mental hygiene and childhood. Mental hygiene and adolescence. Mental hygiene and marriage. Mental hygiene and the schools. Mental hygiene in the college and the university. Mental hygiene in business and industry. Recreation and mental adjustments. Mental hygiene and religion. Mental hygiene aspects of literature. Social work and mental hygiene. Mental hygiene and public opinion. The larger aspects of mental hygiene. Index.

Note: A carefully selected and edited collection of some of the best papers on mental hygiene by outstanding practical workers in the field. Contains 95 papers in all. It may be used either as a basic text or for general reading purposes.

KIRKPATRICK, EDWIN ASBURY

131
K63m
Mental hygiene for effective living. Student edition. New York: D. Appleton-Century Company, Incorporated, 1934. 387 p. illus. 21 cm. \$2.25. 3002

Contents: Mental health and problems of adjustment. Commonality, individuality and normality. Combinations of factors favoring normal adjustments. Conditioning experiences and mental health. Stages of maturing and of widening environment. Development of a conscious personality. Foundations of efficient, healthy living. The unconscious, the abnormal, and Freudianism. Psychology of normal integrative activities. Promoting healthful adjustments to conventions. Mental health norms. Social mental hygiene and modern life. The schools and mental hygiene. Diagnosis and correction of maladjustments.

Note: By means of simple statements, concrete facts, and numerous case studies, this book describes the characteristics of normal functioning and shows how variations from the normal are produced. The approach is practical and personal.

KLEIN, DAVID BALLIN

Mental hygiene; the psychology of personal adjustment. New York: Henry Holt and Company, 1944. 498 p. illus. 21 cm. \$2.80. 3003

Contents: Part I, General introduction: The nature and scope of mental hygiene. Part II, The nature of mental disease: Mental disease and scientific understanding. A synoptic view of structural disorders. A synoptic view of functional disorders. Part III, Preventing mental disease: Some general problems of prophylaxis. Prophylactic aspects of structural disorders. Prophylactic aspects of functional psychoses. Prophylactic aspects of neurotic disorders. Part IV, Promoting mental health: Home and the balanced personality. The dynamics of conscience. Interest, motivation, and morale. Coping with reality. Self-emancipation by repression. Mammon versus morale. Educating for mental hygiene. Glossary. Index of subjects. Index of names.

Note: The author's approach in this introductory book is practical. He has divided his subject into two broad spheres of activity: (1) mental disease and its prevention, and (2) the promotion of mental health. The treatment provides an elementary knowledge of the nature of the common mental disorders together with a survey of the present state of knowledge regarding their prevention.

KRAINES, SAMUEL HENRY, AND E. S. THETFORD

131
K657m
Managing your mind; you can change human nature. New York: The Macmillan Company, 1943. 374 p. 22 cm. \$2.75. 3004

Contents: Introduction. Man versus animal. Automatic bodies in a changing world. Emotional thinking. Making allies of our attitudes. Tension. Heart symptoms. Stomach symptoms. Other symptoms. Psychologic mechanisms. Symbolic symptoms. Sex and marriage. A realistic philosophy of life. Intellectual objectivity and emotional stability. Achieving maturity. Self-reliance and courage. Energy expression. Changing social nature. Index.

Note: A non-technical treatise on mental hygiene for the layman, and for physicians, nurses, and others dealing with emotional problems, tension, and maladjustment. This book is psychosomatic in approach, and the discussion is augmented by down-to-earth philosophy. A practical technique is suggested whereby the reader can control his emotions and substitute mature and fruitful attitudes for childish ones.

McKINNEY, FRED

Psychology of personal adjustment. New York: John Wiley & Sons, Inc., 1941. 636 p. illus. 23 cm. (Wiley books in psychology; H. S. Langfeld, advisory editor) \$3.50. 3005

Contents: Introduction. Personality analysis. Personality readjustment. Study techniques. Concentration, learning, and thinking. Personal efficiency. Vocational planning. Vocational selection. Social adjustment. Social proficiency and leadership. Social conventions and affections. Marital adjustment. Emotional stability. Self-confidence. Emotional maturity. The adjusted personality. Appendix. Index.

Note: This book is designed to show young people how to adjust themselves to work (study and efficiency); to the world of jobs (vocational planning); to friends, acquaintances, leaders, and followers (social adjustment); to the opposite sex (affection and marriage); and to their inner life (self-confidence, emotional stability, and maturity).

MOORE, THOMAS VERNER

Personal mental hygiene. New York: Grune & Stratton, 1944. 331 p. 22 cm. \$4.00. 3006

Contents: Preface. The concept of mental hygiene and mental disorder. The mental hygiene of emotional life. Depression. Anxiety and scrupulosity. Anger. Hatred and race prejudice. Defect of guidance and control in emotional life. The play of intellect and emotion in the problems of life. Balanced and unbalanced personalities and their sense of values. The mental hygiene of the home. The overprotected child. The rejected child. Home organization and the problem of dating. The ideal of family life. Mental hygiene and the school. Religious values in mental hygiene. Unwholesome drives: fame and feminine charms. Unwholesome drives: the lure of pleasure and its rationalization. Religious sublimation. Reinterpretation and religious ideals. Index of authors. Index of subjects.

Note: A book intended primarily for the individual. It presents various attitudes, ideals, and principles which the author, who is professor of psychology and psychiatry at the Catholic University of America, believes to be of value to the individual confronted with personal difficulties. The workings of the mind and its adjustments to life are illustrated by analyses not only of clinical material but also of historical and literary personalities. The book is written from the Roman Catholic standpoint and bears the Nihil obstat and imprimatur of the Archbishop of Baltimore.

MORGAN, JOHN JACOB BROOKE

Keeping a sound mind. New York: The Macmillan Company, 1934. 440 p. illus. 20 cm. \$2.25. 3007

Contents: How to evaluate your mental health. Mental conflicts. The mastery of fear. What to fight for. How to fight. Emotional maturity. Correct thinking. Counteracting defects. Exaggerating defects. Crime. Overcoming emotional depressions. How to get things done. Getting along with people. Self-confidence. References for further reading. Index.

Note: A simple, non-technical presentation of the basic principles of mental health for courses in mental hygiene. It is designed not as a textbook in abnormal psychology, but as a book for those who are primarily interested in practical means toward the development and preservation of mental health in themselves and those with whom they come in contact. Undergraduates who have not yet taken a course in general psychology will be able to understand it. It may be used in the freshman hygiene course if desired.

RICHMOND, WINIFRED VANDERBILT

Personality; its development and hygiene; an outline of modern approaches to the study of human nature. New York: Farrar & Rinehart, Incorporated, 1937. 279 p. illus. 21 cm. \$2.00. 3007a

Contents (abridged): Introduction. History and definitions. Methods of studying the personality. The fundamental psychophysical make-up: the body or soma; intelligence; emotion; energy and orientation. Habit and the conditioned reflex. The dynamics of the personality. Deviations and minor maladjustments. The psychoses and neuroses. The treatment of personality maladjustments. Conclusion. Index.

Note: An elementary college textbook for beginning courses in psychiatry and mental hygiene. Case histories are used as illustrations of maladjustments and neuroses. A bibliography appears at the end of each chapter.

SHAFFER, LAURANCE FREDERIC

The psychology of adjustment; an objective approach to mental hygiene. Boston: Houghton Mifflin Company, 1936. 600 p. illus. 22 cm. \$3.50. 3008

Contents: Part I, Psychological foundations: Human conduct and scientific method. The origins of behavior. The modification of behavior. Motivation. Adjustment. Part II, Varieties of adjustment: Adjustment by defense. Adjustment by withdrawing. Fear and repression in adjustment. Adjustment by ailments. Persistent nonadjustive reactions. Part III, Personality: Personality traits and their measurement. Organic factors in personality. The development of personality traits. Psychoanalysis. Part IV, Techniques of mental hygiene: The mental hygiene study of the individual. The guidance of readjustment. Application of positive mental hygiene. Questions and exercises for thinking and discussion. Bibliography. Index.

Note: In this textbook, the author avoids the use of psycho-

analytical conceptions, but treats the principal theories of psychoanalysis in a separate chapter. The aim of the book is to assist its readers to understand human nature.

SHERMAN, MANDEL

Basic problems of behavior. New York: Longmans, Green and Company, 1941. 440 p. illus. 22 cm. \$3.00. 3010

Contents: The emotions. Motivation and frustration. Theories of personality. Common mechanisms of adjustment. The measurement of personality. Attitudes. Conflicts. Delinquent behavior. The neuroses. Mental abnormalities. Bibliography. Index.

Note: Designed to present the clinical, experimental, psychological, and psychiatric data of a number of basic problems of behavior. Current theories concerning these problems are also presented and evaluated. The author emphasizes his belief that the best method in the study of behavior is the combining of clinical and experimental evidence. A few detailed case histories are included as practical illustrations, rather than as evidence of scientific findings. The book is an elaboration of the author's *Mental hygiene and education*, New York: Longmans, Green and Company, 1934, and is designed to serve both as a text and as a reference book.

STRECKER, EDWARD ADAM, AND KENNETH E. APPEL

Discovering ourselves; a view of the human mind and how it works, in collaboration with John W. Appel. Second edition. New York: The Macmillan Company, 1943. 434 p. illus. 22 cm. \$3.00. 3011

Contents: Questions psychology helps to answer. The intimate relation of body and mind. Nervousness is not a disease of the nerves. Elementary psychological concepts. Action as the goal of mental processes. Degrees of awareness: the conscious, the subconscious; the unconscious. The complex, or emotional web of ideas; logical versus emotional thinking. The major struggles between the head, the ego, and the sex complexes. Emotion—its nature. Anger. Fear. Regression or exaggerated emotion. The first mental hazard. The extrovert and his pursuit of activity. Introversion; phantasies; daydreams. Rationalization—how we deceive ourselves. Segregation, or a certain blindness to our inconsistencies. Repression—why and what we forget. Dissociation and the dangers of unrecognized tendencies. The conversion of mental conflicts into physical symptoms: anxiety, neurasthenia, hysteria. The mental use of substitutes, transference of emotions, symbolism. Projection. Identification and idealization. Inferiority complex and self-expression. Sublimation. Appendix: A chapter of questions.

Note: A non-technical presentation of the essentials of dynamic psychology, the principles of psychiatry and mental hygiene, written for the lay reader and for students, educators, and vocational counsellors. An important addition to this edition is the new section on emotions, fear, and anger, by John W. Appel. The appendix contains questions for self-examination whereby the reader may test his understanding of the subject.

TIEGS, ERNEST WALTER, AND BARNEY KATZ

Mental hygiene in education. New York: The Ronald Press Company, 1941. 418 p. illus. 21 cm. (Series in education; editors: E. W. Tiegs and L. P. Thorpe) \$2.75. 3012

Contents: Part I, The nature and origin of personality difficulties: The problem of mental health. Mental health hazards of childhood and youth. The struggle for integrity: compromise or disaster. What is normal conduct and adjustment? Confusing, misleading, and limited theories of personality. Hereditary and organic factors in personality. Part II, Improving personal and social adjustment: Modern psychological theories of personality. Can personal and social adjustment be improved? Problems and methods of diagnosing difficulties. Aiding the maladjusted in school. The role of the family. Community relationships. Measuring and interpreting improvement. Part III, The more serious personality difficulties: Analysis and treatment of nervous habits. Of sexual difficulties. Of thinking difficulties. Psychoneuroses: the minor mental disorders. Psychoses: the major mental disorders. Glossary.

Note: This book is designed for college classes and as an aid in the solution of the problem of guidance in mental hygiene.

Teachers in service and administrators and supervisors will find it useful in handling personality problems of school children. The attempt has been to present the whole problem of mental health by bringing together in a meaningful pattern the principles, techniques, and agencies which are mainly responsible for guiding personality development. Throughout, mental hygiene is correlated with other important objectives of education.

WALLIN, JOHN EDWARD WALLACE

121
WIS
Personality maladjustments and mental hygiene; a textbook for psychologists, educators, counselors, and mental hygiene workers. New York: McGraw-Hill Book Company, Inc., 1935. 511 p. 23 cm. \$3.00. 3013

Contents (abridged): Part I, Introduction: The concept of mental health and mental hygiene. The remedial, preventive, and positive objectives of the mental-hygiene program. The physical, psychological, social and educational factors or elements of the

mental-hygiene program. Types of children with which mental hygiene is concerned. Part II, Symptoms of personality maladjustment as evidenced by inadequate or unwholesome modes of response to difficulties. Specific types of faulty methods of solving life's problems, with preventive and remedial suggestions: Nature of inferiority feelings and defense mechanisms. Dodging responsibilities by evasion. Refusal to acknowledge defeat or failure. Self-justification through shifting the blame. Rationalization. Regressive and daydreaming adjustments. Adjustments through compensatory reactions. Suggestions for overcoming hampering inferiority feelings. The resolution of mental conflicts by inhibition and repression into the unconscious. Solution of difficulties by the methods of substitution and sublimation. Suggestions from psychoanalysis of value for child training. Appendix: Suggestions for overcoming stage fright and other forms of fear.

Note: An elementary, systematic discussion of the outstanding types of personality maladjustments, together with detailed, practical suggestions for preventing and overcoming mental conflicts and for developing normal, balanced, and harmonious personalities. A feature of the book is the large number of autobiographies of personality maladjustments gathered from intellectually normal and superior individuals.

PSYCHOLOGY

General

BORING, EDWIN GARRIGUES

The physical dimensions of consciousness. New York: The Century Co., 1933. 251 p. illus. 20 cm. (The Century psychology series, Richard M. Elliott, editor) \$2.25. 3014

Contents: Mind and body. The dimensions of consciousness. Intensity. Extensity. Time. Quality. The organization of consciousness. The nature of consciousness. Index of names. Index of subjects.

Note: Written from a viewpoint of experimentalism which seeks to place psychology on a scientific level with physics. The identity hypothesis of the relation of mind and body is held. References are given with notes at the ends of chapters. For advanced students of psychology.

BRENNAN, ROBERT EDWARD

General psychology; an interpretation of the science of mind based on Thomas Aquinas. New York: The Macmillan Company, 1937. 509 p. illus. 22 cm. \$3.50. 3015

Contents: Prologue—the psychology of Thomas Aquinas. The notion of general psychology. Organic life—the notion of organic life. The theory of matter and form. The nature of organic life. The origin of organic life. Sensory life—mental life. The organic basis of consciousness. Reflex activity. Sensation. Somesthetic processes. The chemical senses. Hearing. Vision. Perception. Imagination. Instinct. Memory. Emotional life. The nature of sensory life. The origin of animal life. Intellectual life—the human mind. The conceptual process. The judicial process. The inferential process. Motivation. Volition. Determining tendencies. Attention. Association. Action. Habit character. The ego. The faculty theory. The nature of intellectual knowledge. The nature of volition. The nature of the human mind. Index.

Note: The author treats psychology from the standpoint of scholastic philosophy. He gives a full interpretation of modern scientific findings in terms of psychology perennis, encompassing every aspect of the psychological organism—biological, sensory, and intellectual. Special problems of psychology, such as evolution, perception and sensus communis, vitalism and character are fully treated. The book has undergone critical scrutiny at the hands of eminent scholars and psychologists, both Catholic and non-Catholic, who have given it their endorsement. It carries the Imprimatur of the late Cardinal Hayes.

BRENNAN, ROBERT EDWARD

Thomistic psychology; a philosophic analysis of the nature of man. New York: The Macmillan Company, 1941. 401 p. illus. 22 cm. \$3.25. 3016

Contents: Book I, Aristotle: The psychology of Aristotle. Book II, Aquinas: The psychology of Aquinas. Man: the integer. The Vegetative life of man. The sensitive knowledge of man. The passions and actions of man. The intellectual knowledge of man. The volitional life of man. The powers of man. The habits of man. Man: the person. The soul of man. Book III, The moderns: Modern psychology and the Thomistic synthesis. Bibliography. Index.

Note: The author analyzes Aristotle's and Aquinas' conceptions of the nature of man and shows how these conceptions provide solid philosophical groundwork for modern psychology. The relationships and differences between modern scientific psychology and traditional philosophic psychology are shown, while the author's generous citations from the original writings of Aristotle and Aquinas and his commentaries on them, give the reader an insight into the thought of these two great students of man.

CARR, HARVEY

An introduction to space perception. New York: Longmans, Green and Company, 1935. 413 p. illus. 20 cm. \$2.40. 3017

Contents: Introduction. The spatial co-operation of the senses. Upright vision. Auditory space perception. The binocular relation. Visual perception of distance. Visual perception of direction. Visual perception of motion. Visual perception of size and shape. Index.

Note: A textbook which is designed to give the beginning student a unified conception of the subject. Tactual space perception is discussed only in so far as it is directly related to visual and auditory perception. Emphasis is placed upon the fact that illusions are only a means to the end of understanding the principles involved in correctly perceiving the spatial aspects of the world. The references include only that material which is readily accessible.

CRAFTS, LELAND W., AND OTHERS

Recent experiments in psychology. New York: McGraw-Hill Book Company, Inc., 1938. 417 p. illus. 23 cm. (McGraw-Hill publications in psychology, J. F. Dashiell, consulting editor) \$2.25. 3018

Contents (abridged): The origin of the cat's responses to rats and mice-migration and the "instinct" problem. The behavior of the new-born human infant. The physiology of emotional behavior. Facial expression in emotion. The duplicity theory of vision. The function of the brain in relation to intelligence. Organic nervous diseases in relation to behavior. The electrophysiology of the nervous system. A comparison of the intelligence of "racial" and national groups in Europe. The maze as an instrument in the study of learning. The effect of overlearning upon retention. A comparison of memory for pleasant and unpleasant experiences. The influence of language on the reproduction of visually perceived designs. A psychological study of "lightning calculation." The relation between character traits and handwriting. The judgment of vocational aptitude and success from photographs. Index.

Note: Makes available certain investigations which are representative of recent experimental treatment of 28 important psychological topics. Among these topics are migration in birds and fish, infant behavior, cooperation vs. competition as motives for human beings, physiological reactions in emotion and action currents of the brain.

DODGE, RAYMOND, AND EUGEN KAHN

The craving for superiority. New Haven: Yale University Press, 1931. 69 p. 21 cm. \$1.50. 3018a

Contents: Preface. The relativity of superiority and inferiority. Natural history of values. Organic and purposive adjustments. The craving for superiority. The uniqueness of each personality. The insatiability of the craving for superiority. The craving for the feeling of superiority. Variability and change. Time.

Note: A psychologist and a psychiatrist discuss the various aspects of the individual struggle for superiority, and the psychological problems which it involves. Superiority and inferiority are combined in each individual. This book points out the current over-emphasis of the "inferiority complex," and the many ways in which people assert their craving for superiority.

DOLLARD, JOHN, AND OTHERS

Frustration and aggression, by John Dollard, Leonard W. Doob, Neal E. Miller, O. H. Mowrer, Robert R. Sears, in collaboration with Clellan S. Ford, Carl Iver Hovland, Richard T. Sollenberger. New Haven: Published for the

Institute of Human Relations by Yale University Press, 1939. 209 p. 23 cm. \$2.00. 3018b

Contents: Definitions. Psychological principles. Socialization in America. Adolescence. Criminality. Democracy, fascism, and communism. A primitive society: the Ashanti. References. Index.

Note: A monograph which attempts to explain aggressive behavior in terms of prior frustrations and in this manner to interpret some of the findings of the clinician, the experimentalist, and the field worker. An analysis in terms of the frustration-aggression hypothesis is made of child training, adolescence, criminology, race prejudice, democracy, fascism, communism, and a primitive African society. The problems posed and the illustrative material are of interest not only to the psychologist, sociologist, criminologist, and educator, but to the educated layman as well. The list of references contains 189 books and publications.

GARRETT, HENRY EDWARD

1930 Great experiments in psychology. Revised and enlarged edition. New York: D. Appleton-Century Company, Incorporated, 1941. 452 p. illus. 21 cm. (The Century psychology series, R. M. Elliott, editor) \$2.50. 3018c

Contents: Binet's scale for measuring general intelligence. Army Alpha and the rise of group tests for measuring general intelligence. Galton and the measurement of individual differences. The experimental approach to the study of personality. Pavlov and the conditioned reflex. Franz's and Lashley's experimental studies of the role of the brain in learning. Thorndike's experiments in problem-solving by animals and his "laws" of learning. Köhler's experiments in perception and learning and their importance for Gestalt psychology. Thorndike's and Woodworth's experiments on the transfer of training and their influence upon the doctrine of formal discipline. Ebbinghaus's studies in memory and forgetting. Watson's experimental studies of the behavior of the human infant. Experimental studies of the emotions—the work of Cannon and others. Visual and auditory perception—the work of Helmholtz and others. Cattell's studies in the measurement of reaction time. Weber's and Fechner's laws and the development of psychophysics. Index. Bibliography.

Note: Fourteen of the more influential experiments upon which modern psychology has established itself as an experimental science are described and discussed. The book is designed as a supplementary text to give the beginning student an acquaintance with the experimental foundations of psychology, with the men who have contributed to the upbuilding of psychology, and with problems in the field awaiting solution. In this edition about 100 pages of new material have been added, involving changes in the sections dealing with intelligence, learning, individual differences, Gestalt psychology, and physiological psychology particularly. The chapter on personality is new.

GILBERT, JEANNE GIFFORD

1505 ARP #188 Mental efficiency in senescence. New York: Columbia University Press, 1935. 60 p. illus. 25 cm. (Archives of psychology. No. 188) \$1.00. 3019

Contents: The problem. Previous studies. Difficulty of securing comparable samples and previously employed methods of securing such samples. Methods used in this study for securing comparable samples. Plan of procedure. Results: Raw scores. The efficiency indices. Separation of the early and late sixties. Family groups. Results on certain tests when weighting for time is removed. Summary and conclusions. Bibliography. Appendixes.

Note: A monograph presenting the comparison of mental efficiency of persons in their sixties and persons in their twenties. A review of the literature is presented, comparisons are given of total average test scores in various efforts such as naming objects, repeating sentences, memorizing paragraphs, etc., and conclusions drawn. The bibliography contains 55 entries.

GRIFFITH, COLEMAN ROBERTS

156 G-77 Principles of systematic psychology. Urbana, Ill.: University of Illinois Press, 1943. 718 p. 26 cm. (Seventy-fifth anniversary series) \$4.50. 3019a

Contents (abridged): Problems of systematic psychology. The first-order data of psychology. Major points of reference in psychology: Onto-logical points of reference. Methodological

points of reference. Patterns of points of reference: Structuralism. Configurational psychologies. Empirical behaviorism and functionalism. Functionalism and the genetic point of view. Radical behaviorism. The physiological psychologies. Psychoanalysis and adjustment. The principles of experimental method. The derivation of the psychological functions. The psychological functions: Acting, perceiving and emotional reinforcement. The acquisitive functions. The volitional functions. The higher mental processes. Bibliography and author index. Topical index.

Note: Behaviorism through the experimental method is the theme of this systematic arrangement of the materials of the science of human nature. Development, problems, and trends of psychology are treated. Footnotes refer to the list of 1509 bibliographical references at the end of the volume.

HARTMANN, GEORGE WILFRIED

Gestalt psychology; a survey of facts and principles. New York: The Ronald Press Company, 1935. 325 p. illus. 21 cm. (Psychology series, A. T. Poffenberger, editor) \$3.50. 3019b 130 H25g

Contents: Part I, Historical: Antecedents and development of the doctrine. Part II, Theoretical: Physical basis of the Gestalt theory. Physiological foundations. Philosophical foundations. Varieties of Gestalt theory. Part III, Empirical: Phenomena of visual perception. Studies in audition and the skin senses. The unity of the senses. Memory processes. Learning: data and interpretations. Thinking and reasoning. Researches on insight. Action, emotion, and will. Part IV, Educational problems. Part V, Critical: Criticisms of Gestalt theory by other schools of thought. Conclusion: the present status of the Gestalt school. A note on bibliographies. Biographies. Chronology of significant dates and events in development of Gestalt psychology. Glossary.

Note: A compact survey based on a liberal use of quotations, both direct and condensed. It is designed to include the gist of the most important writing, both American and foreign, on configurative psychology up to the time of the book's publication.

HULL, CLARK LEONARD

Hypnosis and suggestibility, an experimental approach. New York: D. Appleton-Century Company, Incorporated, 1933. 416 p. illus. 23 cm. (The Century psychology series, R. M. Elliott, editor) \$4.50. 3020 134 H27h

Contents: Hypnotism in scientific perspective. Elementary phenomena of hypnosis and suggestibility. Experimental phenomena of direct waking suggestion. Some relationships of experimental hypnosis and suggestibility. The recovery of lost memories in the hypnotic trance. Experimental aspects of post-hypnotic phenomena. Hypnosis and the dissociation hypothesis. Hypnosis conceived as sleep. Hypnotic suggestibility and the transcendence of voluntary capacity. Hypnosis as a state of heightened suggestibility. Hypnosis regarded as habit. Hypnosis and non-prestige suggestion. Interpretations. Indexes.

Note: A discussion of the nature of hypnosis from the experimental viewpoint, intended for psychologists and students but understandable by the general reader. The persons employed as subjects in the research are normal rather than pathological, and the underlying principles are sought rather than treatments or cures. Important techniques are described in detail for research workers. Bibliographies follow each chapter.

HULL, CLARK LEONARD, AND OTHERS

Mathematico-deductive theory of rote learning; a study in scientific methodology. New Haven, Conn.: Yale University Press, 1940. 329 p. illus. 24 cm. (Publication of the Institute of Human Relations, Yale University) \$3.50. 3021 154 71426

Contents (abridged): Concerning scientific theoretical methodology. Typical rote-learning experimental procedure. The system: Undefined concepts. Definitions. Postulates concerning rote learning. Theorems and problems. Concluding remarks. Appendixes. References.

Note: This monograph presents a collection of eighteen postulates and forty-four theorems formulated by a group of Yale psychologists and mathematicians which outline a theory of rote learning based on objective behavior principles and employ a logico-empirical methodology. The technique of symbolic logic is used in the rigorous formulation of the definitions and postu-

lates as well as in the proofs of the theorems and corollaries. An important detail is that the psychologist who formulated the theorems and propositions is not a mathematician, and, conversely, the mathematician who derived the theorems and proofs is not a psychologist, which makes the work a collaboration in the widest sense. At the time of publication a large number of the theorems had not as yet been tested experimentally. Frankly a pioneering attempt, the volume is intelligible mainly to those psychologists who are familiar with the operations of symbolic logic and with the aims of the logico-empirical method in science.

LEWIN, KURT

150
LC24F
Principles of topological psychology, translated by Fritz Heider and Grace M. Heider. New York: McGraw-Hill Book Company, Inc., 1936. 231 p. illus. 23 cm. (McGraw-Hill publications in psychology, J. F. Dashiell, consulting editor) \$2.50. 3021a

Contents: Part I, The task of psychology and the foundations of topological and vector psychology: The present state of psychology. Formulation of law and representation of situation. General considerations about representing life space. Content and extent of the psychological life space. Causal interconnections in psychology. The psychological life space as space in the sense of mathematics. Psychological space and psychological dynamics. The psychological worlds and the physical world. Mathematical representation and psychological theory. Part II, Topological psychology: Concepts of topology which are fundamental for psychology. Concepts of topology fundamental for psychology. Topology of the psychological environment. Psychological regions, locomotions, and communications. Boundaries of psychological regions. The relative position of two regions. Structural changes. The life space as finitely structured space. Topology of the person. The person as a differentiated region in the life space. Fundamental concepts and coordinated definitions for the representation of the person. Dimensions of the life space. Bibliography. Glossary. Indexes.

Note: Planned to be of aid for the integrating tendencies in psychology by developing a group of concepts useful as a framework in all branches of psychology. These concepts are both mathematically strict and fitted for the special needs of psychology. They are based on a decade of experimental investigation. They are basic for the psychology of actions, emotions, motivation, for child psychology, social psychology, and abnormal psychology. This book was not previously published in German, the translation being made from the manuscript.

LEWIN, KURT, AND OTHERS

Studies in topological and vector psychology, I, by Kurt Lewin, Ronald Lippitt, and Sibylle Korsch Escalona. Iowa City, Ia.: The University of Iowa Press, 1940. 307 p. illus. 24 cm. (University of Iowa studies. Studies in child welfare. Vol. xvi, no. 3) Paper, \$1.35. 3021b

Contents (abridged): Part I: Formalization and progress in psychology, by Kurt Lewin. Part II, An experimental study of the effect of democratic and authoritarian group atmospheres, by Ronald Lippitt: Aim of study. Problems of methodology and experimental technique. Group log. Results and interpretations. Part III, The effect of success and failure upon the level of aspiration and behavior in manic-depressive psychoses, by Sibylle Korsch Escalona: The problem. Topology of the level of aspiration situation. Differences in the onset and course of the illness in motor retarded and decision retarded subjects. Relation between our findings and some of the suggested theories of abnormal and normal mood changes.

Note: The theories of Dr. Lewin are offered in semi mathematical form and ramified by the work of two experimenters who have used Lewinian concepts as basis for their work.

LOUTTIT, CHAUNCEY MCKINLEY

160
A-L928
Handbook of psychological literature. Bloomington, Ind.: The Principia Press, 1932. 273 p. 19 cm. \$2.50. 3022

Contents: Introduction. Journal literature. Institution publications. General reference works. Literature guides. Other material and sources. Library and classification. Appendixes. Index.

Note: Not a formal bibliography but a guide to the literature sources of psychology. The Appendixes, which occupy half of the

book, contain a list of 1,084 American and European journals in psychology and related subjects, plus a list of special collections and other references.

PINTNER, RUDOLF, AND OTHERS

The psychology of the physically handicapped, by Rudolf Pintner, Jon Eisenson, and Mildred Stanton. New York: F. S. Crofts & Co., 1941. 391 p. illus. 22 cm. \$3.00. 3022a

Contents: Personality development. Mental hygiene. The internal mechanisms of behavior. Psychological tests for the physically handicapped. The deaf. The hard of hearing. The blind. The partially sighted. The crippled. Other physically handicapped groups. The defective in speech. Speech involvements of special types of the physically handicapped. Index. Bibliography.

Note: Designed for use as a textbook for specialized college courses in psychology and as a reference for those professionally engaged in work with the physically handicapped. The book attempts to bring together in one volume the scattered information found in diverse periodicals and reports for the convenience of those actually dealing with handicapped children or adults in schools, hospitals, and clinics. A general introduction to normal psychology precedes the discussion of the handicapped groups. Bibliographies follow each chapter.

RAPAPORT, DAVID

Emotions and memory. Baltimore: The Williams & Wilkins Company, 1942. 282 p. 23 cm. (The Menninger Clinic monograph series. No. 2) \$3.00. 3022b

Contents: Introduction. The historical background of the problem. The problem of emotions. The experimental contributions of general psychology. Theoretical contributions of general psychology. The contributions of psychoanalysis. The contribution of hypnosis. Contributions of the study of pathological memory phenomena. Direct experimental evidence. Conclusions and implications. Index.

Note: A critical review of the literature dealing with the relationship between emotions and memory. Although originally inspired by the need for a greater knowledge of the role of emotion in disease, the monograph is not limited to the medical aspects alone. It represents an interpretation and correlation of the pertinent literature from the fields of psychology, psychopathology, and psychoanalysis and a comparison of extensive clinical and experimental material in order to clarify the concepts of emotions and memory. References are given in footnotes, and an extensive bibliography concludes each chapter.

ROBERTS, WILLIAM HENRY

Psychology you can use; diagrams by James Macdonald. New York: Harcourt, Brace and Company, 1943. 246 p. illus. 21 cm. \$2.00. 3023

Contents: Watching a habit grow. Reporters in the skin. The sense of movement and some other senses. Taste and smell. Hearing. Seeing. Attention. Imagination. Perception. The perception of distance and movement. Feeling and emotion. Reflexes. Instincts. Heredity and environment. Intelligence. Learning. Remembering and forgetting. Thinking. Taking it. Index.

Note: A popularized account of some of the more commonly accepted principles of psychology, written for the layman in terms of everyday experience, and illustrated with simple experiments which the reader can perform with little or no equipment. For youths of high-school age and others beginning to read in the subject.

ROBINSON, EDWARD STEVENS

Man as psychology sees him. New York: The Macmillan Company, 1932. 376 p. 20 cm. \$3.00. 3024

Contents: Part I, Man; comments on his nature: Motives to action. Heredity or environment? Living and learning. What is thought? The rational man. The whole man. Mind and body. Part II, Psychology; its aims, its deeds, its follies: What is psychology? The wares of psychology. Word storms of psychology. Psychological revolution? Bibliography. Index.

Note: A popularized account of psychology, written from the viewpoint of the layman, in which the problems studied in the science and the various approaches and schools of thought are

evaluated in practical terms. The author attempts to show that the entire purpose of psychological study is to show us why we act, think, feel, and talk as we do, to interpret, in other words, the motives of our behavior.

SARGENT, STEPHEN STANSFELD

The basic teachings of the great psychologists. New York: The New Home Library, 1944. 346 p. illus. 21 cm. \$0.69. 3024a

Contents (abridged): The science of psychology. Intelligence and intelligence testing. Measuring special abilities. Feeble-mindedness and genius. Effect of heredity and environment on the individual. Individual development. Physiological bases of behavior. Motivation. Emotions. Measuring personality. How personality develops. Mental disease. Conflicts and the unconscious. Learning. Remembering and forgetting. Perceiving. Thinking. Imagery, imagination and dreams. Man's social behavior. Psychology in everyday living. Biographical notes. Index.

Note: An introductory study of psychology for general readers and for former students who want a "refresher." The material in each chapter is arranged approximately in chronological order from the early discoveries to the most recent research. Viewpoints of the various schools of psychological thought are outlined and contrasted. A biographical appendix gives brief sketches of about 250 men and women whose work is dealt with in the book.

SCHEIDEMANN, NORMA VALENTINE

Lecture demonstrations for general psychology. Chicago, Ill.: The University of Chicago Press, 1939. 241 p. illus. 19 cm. \$2.50. 3025

Contents (abridged): Simple reaction time. Double imagery. Visual after-images. Verbal configuration. Simple association. Incidental memory. Recognition and recall memory. Some factors affecting recall. Preferred positions of advertisements. Transfer of training. Suggestion. Hallucination. Individual mental tests. Measurement of intelligence by drawings. Infant development. Purposive thinking jury decisions. Musical expressiveness. Some personality traits. Judgment of character traits. Inferiority feelings. Hearsay or rumor.

Note: This teacher's manual provides 60 demonstrations to illustrate lectures in general psychology.

SCHILDER, PAUL

Mind: perception and thought in their constructive aspects. New York: Columbia University Press, 1942. 432 p. illus. 22 cm. \$5.00. 3026

Contents: Part I, Perception and action: In search of primitive experience. Color and motion in visual experience. Representation and optic imagination. Motion, form, and spatial relations in optic perception. Optic perception and typology. Tactile perception. Hearing, smell, taste: intersensory analogies. The vestibular apparatus. The construction of the object and the problem of Gestalt. Psychoanalysis and the conditioned reflexes. Stimuli and sensations. Space. Psychology and psychopathology of time. Action. Summary. Part II, Higher mental functions: Language: psychology and psychopathology. Memory. Thinking. The pleasure and reality principles in thought and action. The nature of consciousness. Psychic energy. The psychology of geometry and physics. Antinomies. Conclusions. Bibliography. Index.

Note: In this study the author holds that experience of an object is not immediate, but is a building up of sensations and perceptions in a psychic process involving mobility and action which in turn further enrich the impression. Freudian influence is acknowledged, and Gestalt principles are used. The book is for advanced students of psychology.

SEASHORE, CARL EMIL

Pioneering in psychology. Iowa City, Ia.: University of Iowa Press, 1942. 232 p. 23 cm. (University of Iowa studies. Series on aims and progress of research. No. 70) \$2.50. 3026a

Contents: Introduction. The psychological laboratory. The building of instruments. A visit to the acoustical laboratory. Psychology in music. Psychology in speech. Clinical psychology and psychiatry. Differential psychology. Genetic psychology. The Iowa Child Welfare Research Station. Psychology in education. Psychology in the fine arts. Retrospect. Bibliography.

Note: The origins of significant movements in psychology are described autobiographically as they were observed in the building and development of the University of Iowa Psychology Department. The book is written as a personal reminiscence, and includes much material on the accomplishments of individuals and institutions.

TERMAN, LEWIS MADISON, AND OTHERS

Psychological factors in marital happiness. New York: McGraw-Hill Book Company, Inc., 1938. 474 p. illus. 23 cm. \$4.00. 3026b

Contents: Problem and approach. An exploratory search for psychological factors in marital compatibility. The present investigation: information secured, populations studied, and treatment of data. The index of marital happiness. The interpretation of domestic grievances. Personality correlates of marital happiness. The personalities of happily married and of unhappily married persons. Background factors: General. The family. Sex education and sex attitudes. Specific sexual adjustments and their relation to marital happiness. The relative contributions of personality factors, background factors, and sexual factors to happiness in marriage. Summary and conclusions. Appendix: Correlates of orgasm adequacy in women. Data on special groups. Percentile norms for the personality, background, and sex adjustment scales. Information schedules. Bibliography. Indexes.

Note: A monograph presenting the results of an extended study in the psychological and psycho-sexual correlates of marital happiness. A total of several hundred possible factors have been correlated with measures of the marital satisfaction experienced by 2,484 subjects, including 1,133 married couples and 109 divorced couples. The variables studied fall into three main groups: personality factors, background factors, and specific sexual adjustments. The personality and background factors have been combined and utilized as the basis for estimating in advance the probable success of a given marriage. There are 147 tables of statistical data and 114 entries in the selected bibliography.

THURSTONE, LOUIS LEON

A factorial study of perception. Chicago: The University of Chicago Press, 1944. 148 p. illus. 24 cm. Paper, \$2.50. 3027

Contents: Nature of the problem. Description of perceptual tests. Factorial analysis of the perceptual battery. Special groups. Index.

Note: The fundamental hypothesis put forth by the author in this work is that the dynamics of perception, and of other restricted functions, are so related that some characteristics of the personality as a whole might be inferred from the dynamics of one of these functions. He believes that investigations of the type described in this work will eventually lead to a better psychological interpretation of personality.

THURSTONE, LOUIS LEON, AND RICHARD L. JENKINS

Order of birth, parent-age, and intelligence. Chicago: The University of Chicago Press, 1931. 135 p. 23 cm. (Behavior Research Fund. Monographs) \$3.00. 3028

Contents: Part I, Analysis of case records of the Institute for Juvenile Research. Part II, Review of other studies. Final summary. Bibliography. Index.

Note: Part I is a scientific investigation of 10,000 case records of the Institute for Juvenile Research, studying the relation of birth order and age of parents to intelligence and to the incidence of various diseases, crime, insanity, and other mental and temperamental problems in children. Part II is an extensive review of the experimental literature on this subject.

WATSON, JOHN BROADUS

Behaviorism. Revised edition. New York: W. W. Norton & Company, Inc., 1930. 308 p. illus. 22 cm. \$3.00. 3029

Contents: Introduction. What is behaviorism? How to study human behavior. The human body. Are there any human instincts? Emotions. Our manual habits. Talking and thinking. Do we always think in words? Personality. Index.

Note: This book presents a statement of one of the most important American contributors to experimental psychology. The

treatment is for beginning college students and for educated general readers. The author is the founder of the school of behaviorist psychology. The revised edition contains new material from literature published between 1925 and 1930 and replaces the original lecture-hall style with a more unified method of presentation.

WOODWORTH, ROBERT SESSIONS

Psychological issues; selected papers of Robert S. Woodworth, with a bibliography of his writings. New York: Columbia University Press, 1939. 421 p. illus. 23 cm. \$3.50. 3031

Contents: Autobiography. Systematic problems: The cause of a voluntary movement. Judgments of magnitude by comparison with a mental standard. Imageless thought. Non-sensory components of sense perception. The consciousness of relation. A revision of imageless thought. Four varieties of behaviorism. A justification of the concept of instinct. Gestalt psychology and the concept of reaction stages. Situation-and-goal set. Abnormal psychology: Note on the rapidity of dreams. Psychiatry and experimental psychology. How the psychological mechanism works. Some criticisms of the Freudian psychology. Differential psychology: Racial differences in mental traits. The puzzle of color vocabularies. On factors contributing to a low scientific productivity in America. Combining the results of several tests: a study in statistical method. Motor phenomena: On the voluntary control of the force of movement. Maximal contraction, "staircase" contraction, refractory period, and compensatory pause of the heart. Educational psychology: The influence of improvement in one mental function upon the efficiency of other functions. Present-day methods of teaching philosophy. Psychology in the college course. The teaching of psychology. Bibliography. Index.

Note: A collection of some of the author's most distinctive contributions to the field of psychology, consisting of 25 papers and articles which have appeared at various times from 1897 to 1937 in psychological journals and bulletins. The separate books and monographs that have appeared under his authorship have not been drawn on, nor have the present papers been in any way revised or edited. A complete bibliography of all of Woodworth's writings through 1938, arranged in chronological order, is included.

Dictionaries

ENGLISH, HORACE BIDWELL

A student's dictionary of psychological terms. Fourth edition. New York: Harper & Brothers, 1934. 131 p. 22 cm. \$1.20. 3033

Note: This dictionary is intended to fill the needs of the beginning student and the layman interested in psychology. The selection of terms for definition has been governed by three principles; first, the terms which seem likely to trouble the general reader and the college student, second, the terms which are capable of treatment with reasonable brevity; and third, the terms which increase the book's usefulness for reference in some of the related fields. Terms likely to be considered only by more advanced students are given slightly more technical definitions where this conduces to brevity or accuracy, but an effort has been made to state the meanings of terms which bother the less advanced student in the simplest language. The fourth edition contains a number of added terms, particularly from educational and social psychology and from the field of statistics. Errors have been corrected, and the book has been reset in larger type.

ERDELYI, MICHAEL, AND FRANK GROSSMAN

Dictionary of terms and expressions of industrial psychology ("psychotechnics") in German, English, French, Hungarian. New York: Pitman Publishing Corporation, 1939. 98 p. 24 cm. \$2.75. 3034

Contents: Preface. Introduction. Generally used abbreviations. Index.

Note: A dictionary for readers of books on psychotechnics who have a fair knowledge of the languages and of the subject. The vocabulary includes only pertinent psychological terms and follows the German alphabetical order throughout, with equivalents in the other three languages printed on the same page. Indexes in English, French, and Hungarian are provided.

History

BIDNEY, DAVID

The psychology and ethics of Spinoza; a study in the history and logic of ideas. New Haven: Yale University Press, 1940. 454 p. 24 cm. \$3.75. 3035

Contents (abridged): Introduction. Part I, Theory of emotions: On the nature of the soul and the origin of the affects. On the primary affects. Pleasure and pain. Desire and the conatus of man. The basis of agreement and contrariness in human nature. On the derivative affects. Other derivative affects. The contrary affects. The control of the passions. Part II, Ethical theory: The notion of perfection and imperfection. The perfection or virtue of man. The primary virtues and moral character. The social virtues. The summum bonum. Part III, Spinoza and modern thought: On Spinoza and modern psychology. On Spinoza and contemporary value theory. Index.

Note: In this volume is presented for the first time in the English language a comprehensive historical and critical analysis of Spinoza's psychology of the emotions and its relation to his moral theory. The volume offers a critical appreciation of Spinoza's contributions to psychology; presents a scientific interpretation of his thought; makes clear his influence upon the development of modern psychological and axiological thought; and contrasts his ideas with those of contemporary thinkers.

BORING, EDWIN GARRIGUES

Sensation and perception in the history of experimental psychology. New York: D. Appleton-Century Company, Incorporated, 1942. 644 p. illus. 23 cm. (The Century psychology series, R. M. Elliott, editor) \$5.00. 3036

Contents: Sensation and perception. Physiology of sensation. Visual sensation: Beginnings. Color and its stimulus. Visual phenomena. Color theory. Visual perception of bidimensional space. Visual perception of depth and distance. Psychophysics of tone. Auditory perception. Auditory theory. Smell and taste. Tactile sensibility. Organic sensibility. The perception of time and movement. Concerning scientific progress. Indexes.

Note: The background and evolution of modern psychology of sensation and perception is the subject of this study, which treats chronologically the history of researches in the field from 1600 to 1930 and records the gradual development of present fact and opinion, describing the difficulties encountered by investigators and the factors which aided the progress of their experimentation. The work is intended more for the specialist than the layman, and is based on a study of original source material which is summarized but not simplified. There are numerous reference notes and cross-references after each chapter.

FAY, JAY WHARTON

American psychology before William James. New Brunswick, N.J.: Rutgers University Press, 1939. 250 p. 21 cm. (Rutgers University studies in psychology. No. 1) \$2.50. 3037

Contents: The psychological heritage of the Pilgrim Fathers. The period of theology and moral philosophy: English scholastic education, 1640-1714. The American enlightenment, 1714-1776. The period of intellectual philosophy: The Scottish philosophy, 1776-1827. The era of American textbooks, 1827-1861. The period of British and German influences: Progress of European thought, 1861-1890. Conditions in America. American psychology. Notes. Chronological table of American works and foreign sources. Bibliography of original sources. Index of names.

Note: The author has made a thorough study of some 80 works on psychology and related subjects, and has found that America must be given credit for the first systematic text in abnormal psychology, for an early division of mental states into knowing, feeling, and willing, and for a startling anticipation of many concepts commonly supposed to be modern. He demonstrates that in many instances American thought was fully abreast of European developments, and often in advance of them.

GARDINER, H. M., AND OTHERS

Feeling and emotion; a history of theories, by H. M. Gardiner, Ruth Clark Metcalf and John

G. Beebe-Center. New York: American Book Company, 1937. 445 p. illus. 20 cm. (American psychology series, Henry E. Garrett, general editor) \$2.00. 3038

Contents: The beginnings of a doctrine of the affections—from Heraclitus to Plato. The doctrine of pleasure, pain and emotion in Aristotle. Ancient theories of the affections. Patristic and medieval doctrines of the affections. Affective psychology in the period of the Renaissance. Systems of the "passions" in the seventeenth century. Affective psychology in the eighteenth century. Affective psychology in the nineteenth century. Affective psychology in the twentieth century. Bibliography. Index.

Note: A history and critique, begun by Prof. Gardiner and revised and completed by Prof. Metcalf and Dr. Beebe-Center. The work is intended as a reference source and as a college text. Major authors and theories are examined. There are 23 pages of selected bibliography, and a full index.

HEIDBREDER, EDNA

160 7367 Seven psychologies. Student's edition. New York: The Century Company, 1933. 450 p. illus. 20 cm. (The Century psychology series, R. M. Elliott, editor) \$3.00. 3039

Contents: Systems of psychology; their function and significance. Prescientific psychology. The beginnings of scientific psychology. Titchener and structuralism. The psychology of William James. Functionalism and the University of Chicago. Behaviorism. Dynamic psychology and Columbia University. Gestalt psychology. Freud and the psychoanalytic movement. Afterthought.

Note: The purpose of this objective survey of seven notable systems of psychology that have been influential in the development of the science in America is to introduce the beginner to the main currents of psychological thought and to give him insight into the function and significance of systems of psychology in general.

HULIN, WILBUR SCHOFIELD

A short history of psychology. New York: Henry Holt and Company, Inc., 1934. 189 p. 19 cm. \$1.40. 3040

Contents: Primitive animism. Origin of the mind-body distinction. The anthropological period. The eclectic period. The religious period. The renaissance. The period of the enlightenment. Beginnings of modern psychology. Modern scientific psychology. Special lines of interest. Present-day tendencies. General bibliography. Index.

Note: A brief historical survey. All the leading students of psychology and allied sciences are mentioned, and their significant contributions are summarized.

MURCHISON, CARL ALLANMORE, EDITOR

150.9 7093a A history of psychology in autobiography. Worcester, Mass.: Clark University Press, 1930-36. 3 v. illus. 23 cm. (The International university series in psychology) \$15.00. 3041

Contents (abridged): Volume I. James Mark Baldwin. Mary Whiton Calkins. Edouard Claparède. Raymond Dodge. Pierre Janet. Joseph Jastrow. F. Kiesow. William McDougall. Carl Emil Seashore. C. Spearman. William Stern. Carl Stumpf. Howard C. Warren. Theodor Ziehen. H. Zwaardemaker. Volume II. Benjamin Bourdon. James Drever. Knight Dunlap. Giulio Cesare Ferrari. Shepherd Ivory Franz. Karl Groos. Gerardus Heymans. Harald Höffding. Charles H. Judd. C. Lloyd Morgan. Walter B. Pillsbury. Lewis M. Terman. Margaret Floy Washburn. Robert S. Woodworth. Robert Mearns Yerkes. Volume III. James Rowland Angell. Frederic Charles Bartlett. Madison Bentley. Harvey A. Carr. Sante de Sanctis. Joseph Fröbes. O. Klemm. Karl Marbe. Charles Samuel Myers. E. W. Scripture. Edward Lee Thorndike. John Broadus Watson. Wilhelm Wirth.

Note: An attempt to have individuals who have greatly influenced contemporary psychology record the pertinent facts of their personal histories insofar as they bear on their professional careers. A committee of five men, comprising Carl Murchison, Edwin G. Boring, Karl Buhler, Herbert S. Langfeld, and John B. Watson, chose the persons who were to be included. Original plans were for at least four volumes in the series, but with the publication of volume III the series was considered closed.

Textbooks

BENTLEY, ISAAC MADISON

The new field of psychology, the psychological functions and their government. New York: D. Appleton-Century Company, Incorporated, 1934. 439 p. illus. 20 cm. \$3.50. 3042

Contents: Introduction. The apprehending functions. Bodily support of the apprehending functions. The patterns of apprehension. Learning. Acting. Emotion. Inspecting and comprehending. Elaborative thinking. Functional components and resultants in daily living. Supplement. Indexes.

Note: This text for college students and teachers is not a revision of the author's *The field of psychology*, New York, 1924, but an entirely new work from a radically changed viewpoint. The psychosomatic basis of the former book has been replaced with a dualistic approach, and the physiological functions are observed separately from the psychological functions instead of as an integral unit. Emphasis has also been placed on the concept of government or control of bodily processes, the work seeking to discover those agencies which regulate and control our conduct and accomplishments. The non-psychological forces of behaviorism and psychoanalysis are rejected, but their method of factual approach is retained.

BORING, EDWIN GARRIGUES, AND OTHERS

150 7367 Introduction to psychology, by Edwin Garrigues Boring, Herbert Sidney Langfeld, Harry Porter Weld and collaborators. New York: John Wiley & Sons, Inc., 1939. 652 p. illus. 23 cm. \$3.00. 3043

Contents: The nature of man. Social functions of the individual. Personality. Individual differences in personality. Motivation. Emotional and affective responses. The response mechanism. Response. Learning. Retention. Recollection and imagination. Thought. Perception. Spatial perception. Perception of time and movement. Sensation. Vision. Audition. Smell, taste, and somesthesia. The nature of man. Index.

Note: A study of the human organism as it adjusts itself to its environment and its environment to itself. The treatment proceeds from the complex to the simple—from the social relations of the organism to such simple acts as the perception of an object. The book affords a modernistic approach to the subject.

COLE, LAWRENCE EDWIN

156 2671g General psychology. New York: McGraw-Hill Book Company, Inc., 1939. 688 p. illus. 23 cm. (McGraw-Hill publications in psychology) \$3.50. 3044

Contents: Animism and brain psychology. The central nervous system and behavior. Receptors. The effectors. The problem of development. Emotion. Motivation. Learning. Perception. Thinking. Reasoning. Intelligence. Personality.

Note: This introductory text is designed to give the undergraduate college student a broad and thorough foundation in general psychology. Three fields—animal behavior, social psychology, and medical psychology—which have made important contributions to our knowledge of human conduct, have been kept in mind throughout the book.

DASHIELL, JOHN FREDERICK

150 026 fm Fundamentals of general psychology. Boston: Houghton Mifflin Company, 1937. 655 p. illus. 22 cm. \$3.25. 3045

Contents: Introduction. General characteristics of behavior. The hereditary background. Individual development. The bases of motivation. Some personal problems in motivation. Emotion. Motor functions. Sensory functions. Neural organization of behavior. Statistical methods. Set and attending. Intelligent behavior. Fundamentals of learning. Conditions of learning. Perceiving. Social behavior. Language habits. Thinking. Personality. Conditions of efficiency. Concluding orientation. Index.

Note: A revision and enlargement of the author's *Fundamentals of objective psychology*, Boston, 1928. Intended for use as a textbook in beginning college courses, the present work attempts to incorporate both the subjective viewpoint of the student and

the objective approach of science, with about equal emphasis upon the intrinsic human problems and the careful appraisal of factual evidence. There are selected references after each chapter.

DEXTER, EMILY SMITH, AND KATHARINE T. OMWAKE

An introduction to the fields of psychology. New York: Prentice-Hall, Inc., 1938. 236 p. 21 cm. (Prentice-Hall psychology series, F. A. Moss, editor) \$1.75. 3046

Contents: History of psychology. Schools of psychology. Pseudopsychology and parapsychology. Psychology in medicine. Abnormal psychology. Social psychology. Psychology in law. Psychology in advertising. Psychology in efficiency. Child psychology. Animal psychology. Measurement in psychology. Experiment in psychology. Index.

Note: A textbook designed to give the student nearing the end of his first course in psychology an introduction to the various fields of the subject. It aims to tell the student what those fields are, what applications of psychology are made in everyday life, and what further courses are likely to be the most advantageous.

DOCKERAY, FLOYD CARLTON

Psychology. New York: Prentice-Hall, Inc., 1942. 504 p. illus. 23 cm. \$4.00. 3047

Contents: Fact and fiction. The organism and its environment. Heredity and environment. Maturing and learning. Motivation and morale. Physiological basis of motives. Conflict of motives. Feeling and emotion. Emotion in everyday life. Attention. Perceiving. Learning and remembering. Remembering and forgetting. Thinking. Level of attainment. Personality. Abnormal personalities. Test items. Subject index. Index of names.

Note: A first course for college students, presented in the language of the student so far as possible and confined to the student's world of experience. The text aims first to help the student to understand human behavior, and second to encourage him to practice those principles which apply to his own case. The methods of scientific investigation in this field, including the development of generalizations or principles, are also outlined. There are references in footnotes and a number of test questions, principally of the true-false type, are provided for each chapter.

DUNLAP, KNIGHT

Elements of psychology . . . With 65 illustrations. St. Louis: The C. V. Mosby Company, 1936. 499 p. illus. 22 cm. \$3.00. 3047a

Contents: Introduction. The senses. The bodily mechanism. Types of response. Perceptual responses. The perception of space and time. Thought and thought content. Feeling and affects. Learning. Psychological measurements. Individual differences. Maladjustment and readjustment. Glossary.

Note: An elementary textbook designed for college courses. It is a revision of the author's *Elements of scientific psychology*, St. Louis, 1922. In this edition, the text has been extensively revised, and new material has been added throughout.

FERNBERGER, SAMUEL WEILLER

Elementary general psychology. New York: F. S. Crofts & Company, 1936. 445 p. illus. 23 cm. \$3.00. 3047b

Contents: What psychology is not—and what it is. A brief history of psychology. The simpler conscious processes: Perception—general. Special senses—vision with the single eye. Vision—the complex processes. Muscular or kinesthetic sensation. Audition. Taste and smell. Cutaneous, static and organic. The conditions of clearness. The complex conscious processes: Memory images. Memory—simple and complex. Thinking. Reaction: The nervous system. Reflex. Instinct. Emotion. Volition. Habit. The integrated organism: Motivation and drive. Individual differences. The integrated personality. Index.

Note: An introductory textbook for college use. Emphasis is placed upon the study of consciousness and an attempt is made to describe, explain, and relate both conscious processes and reactions. Questions and references are given at the end of each chapter.

FRANZ, SHEPHERD IVORY, AND KATE GORDON, EDITORS.

Psychology. New York: McGraw-Hill Book Company, Inc., 1933. 494 p. illus. 21 cm. (McGraw-Hill publications in psychology) \$2.50. 3048

Contents: Part I, Orientation: How psychology developed. Part II, General aspects of mind: Will and personality. Intelligence. Feeling and emotion. Part III, Psychological foundations: Learning. Basic activities. Nervous structures and functions. Sensation. Part IV, Mental activities: Association. Perception. Attention. Imagination. Memory and forgetting. Part V, Schools of psychology: Current psychological doctrines.

Note: A comprehensive survey of modern psychology for elementary students of college grade. The authors have refrained from advocating the merits of any particular school of psychology. A section is devoted to a discussion of current psychological doctrines.

FREEMAN, ELLIS

Principles of general psychology. New York: Henry Holt and Company, 1939. 530 p. illus. 22 cm. \$2.75. 3049

Contents: Orientation. Heredity and environment. Intelligence. Organically determined differences. Racial and cultural differences. Socio-economic status. Language and number. Science, technology, and invention. Social conditioning. Feelings. Emotions. Motivation—organically determined. Motivation—socially determined. Personality. The basis of learning. The process of learning. General characteristics of perception. Simpler visual perceptions. Complex visual perceptions. Organization. The other modalities of perception. Imagery. Thinking. Index.

Note: This introductory text is a basic and factual treatment of the psychology of human behavior and experience. Though the Gestalt theory is used wherever efficacious, it is in no sense over-emphasized. The author has made a conscious effort to relate psychology to everyday phenomena such as the radio and the movie, to common human relationships, and to the sciences and arts which engage the students' attention.

GILLILAND, ADAM RAYMOND, AND OTHERS

General psychology, by A. R. Gilliland, John J. B. Morgan and S. N. Stevens. Boston: D. C. Heath and Company, 1935. 462 p. illus. 20 cm. \$2.80. 3050

Contents: Nature and purpose of psychology. The human organism. Innate behavior. Sensory processes. Attention. Perception. Learning. Memory. Thinking. Emotional behavior. Mental alertness. Personality. Social behavior. Personal efficiency and motivation. Mental health. Index.

Note: A revision of the authors' earlier work, *General psychology for professional students*, Boston, 1930. The emphasis of the present text for beginning college courses is upon practical applications of the principles of psychology. Protracted discussions of theory are avoided. The revisions in the material and arrangement of subject matter are intended to meet more exactly the requirements of students in elementary courses and at the same time to make the book useful for professional students.

GOODENOUGH, FLORENCE LAURA

Developmental psychology; an introduction to the study of human behavior. New York: D. Appleton-Century Company, Incorporated, 1934. 619 p. illus. 20 cm. (The Century psychology series, R. M. Elliott, editor) \$3.00. 3050a

Contents: Psychology: the study of human development. Problems and methods of modern psychology. Our hereditary background. Prenatal development of the nervous system and of the body as a whole. Growth and functions of the sense-organs. The behavior of the unborn child. The child at birth. The period before speech: physical growth and motor development. Emotional behavior in infancy. The social reactions of infants. The development of color-vision in infancy. Early childhood. The social and emotional behavior of young children. General intelligence and its measurements in early childhood. The kindergarten age. How older children learn. Bright and dull school children. Special abilities and defects. The development of personality and character in later childhood. Adolescence. Educational and vocational

guidance for the adolescent. Motivation of behavior at the college level. Adult behavior and social customs. The maturation and decline of abilities. Mental disease. Old age. A backward look.

Note: The primary purpose of this introduction to the study of human behavior is to explain the successive stages of psychological development and relate them one to another so that the student may see clearly how the personality is shaped by growth and experience. Without sacrificing scientific accuracy, the author has succeeded in presenting the material usually covered in beginners' courses in an interesting and straightforward manner.

GRIFFITHS, JOSEPH HARRY

130 The psychology of human behavior. New York: Farrar and Rinehart, Inc., 1935. 515 p. illus. 22 cm. \$2.50. 3050b

Contents: Part I, What psychology is: Psychology's origin and development. Ways of psychologizing. Part II, The psychology of learning: How we learn. How to learn effectively. Intelligence: what it is and how to measure it. What determines intelligence. Practical and theoretical aspects of intelligence testing. Part III, The psychology of feeling and emotion: Emotional behavior. Part IV, The psychology of thinking and imagining: Thinking. Imagining. Part V, The psychology of perceiving: Sensing and perceiving. Perceiving and attending. Part VI, The psychology of personality: Personality. Indexes.

Note: A textbook of elementary psychology for college students. Presents an account of what psychology is, how it came to be a science, who some of the more important men of the science are, and what psychology has to offer as a curricular study. Following this orientation, the book introduces the topic of learning as illustrating the direct significance of psychology for the student's own immediate problems. The remainder of the text dealing with feeling, thinking, and perceiving, aims to present psychology as a vital human interest in itself as well as a basic equipment for various professional interests. There are problems and references after each chapter.

GUILFORD, JOY PAUL, EDITOR

130 Fields of psychology. New York: D. Van Nostrand Company, Inc., 1940. 695 p. illus. 23 cm. (Textbooks on psychology; J. P. Guilford, general editor) \$3.50. 3051

Contents: Introduction, by J. P. Guilford. Animal psychology (viewpoint and program), by C. J. Warden. Animal psychology (methods and results), by C. J. Warden. The field of child psychology, by Mary Shirley. Some products of child psychology, by Mary Shirley. The concepts and methods of social psychology, by Daniel Katz. The psychology of the crowd, by Daniel Katz. The psychology of nationalism, by Daniel Katz. Abnormal psychology, the significance and causes of abnormal behavior, by Laurence F. Shaffer. Abnormal psychology, the minor abnormalities, by Laurence F. Shaffer. Abnormal psychology, the major abnormalities, by Laurence F. Shaffer. The nature of individual differences, by Anne Anastasi. Major group differences, by Anne Anastasi. Educational psychology, by Horace B. English. Clinical psychology, by C. M. Louttit. Individual mental efficiency, by Douglas Fryer. Vocational psychology (fitting the worker to the job), by Morris S. Viteles. Vocational psychology (maintaining fitness at work), by Morris S. Viteles. Professional psychology, by Douglas Fryer. Physiological psychology, by G. L. Freeman. Aesthetics, by Kate Hevner. Points of view, by Milton Metfessel.

Note: Designed for study by students who have completed the first college course in psychology.

GUILFORD, JOY PAUL

General psychology. New York: D. Van Nostrand Company, Inc., 1939. 630 p. illus. 23 cm. \$3.00. 3052

Contents: Introduction: What psychology is. What psychology does. Mental activity and the brain. Sensory activities: Seeing colors. Hearing sounds. The simpler senses. Attention. Sensory organization. Forms and patterns. Sensory organization: limits and errors, sensory orientations. Space, time and movement. Motivation of behavior: Some fundamental motives. More complex motives. Conflicts of motives. Emotional responses. Likes, interests, and attitudes. Acquiring new adjustments: Conditioned responses. Other ways of learning. Memorizing. Remembering. Symbolic activity: Thinking. Reasoning. Inventing. Individual differences: Human abilities. Factors related to abilities. Human personality. Factors related to personality. References. Index.

Note: This introductory college textbook gives a survey of the topics that are of major importance in present-day psychology. It emphasizes the applications of the science to everyday matters, especially as they relate to the life of the average student. This stress upon the more practical aspects of the subject is designed to appeal to those students who confine their study of psychology to the one course in which this book is used as a text. The same author and W. E. Walton have written a manual and handbook for use with this text entitled *Studies in elementary psychology*, New York: D. Van Nostrand Company, 1940, 266 p., paper, \$2.25.

HIGGINSON, GLENN DE VERE

Fields of psychology; a study of man and his environment. New York: Henry Holt and Company, 1931. 613 p. illus. 22 cm. \$3.00. 3053

Contents: Part I, Introduction and systematic positions: Origin and nature of science. Psychological systems. Part II, Problems of development: The doctrine of evolution. The psychology of the animal. The development of the human race. The psychology of individual development. The psychology of the group. Part III, Differential and applied psychology: Differential psychology. Psychology and education. Psychology of efficiency. Advertising and salesmanship. Psychology and law. Part IV, Problems of abnormal psychology: Nature, causes, and significance of mental diseases. Disturbances of the psychological functions. The psychoneuroses. The psychoses. Treatment of psychological diseases. Index of names and subjects.

Note: A comprehensive study of the major fields of psychology. Designed for use in intermediate college courses.

HIGGINSON, GLENN DE VERE

Psychology. New York: The Macmillan Company, 1936. 646 p. illus. 22 cm. \$3.25. 3056

Contents (abridged): The nature of psychology. Biological determination of activities. Physiological and psychological determination. Some visual properties of objects. An explanatory approach to vision. Visual properties of size, shape, distance, and movement. Auditory, gustatory, and olfactory properties. Cutaneous, kinaesthetic, vestibular, and organic properties. Some related problems—time, limits, illusions, and attention. Action patterns. Memory. Imagination. Thinking. Emotion. Learning. Individual differences. Personality. Index of names. Index of topics.

Note: In this introductory college textbook a functional point of view is maintained throughout. The study of psychology is treated as a naturalistic science. Psychological growth is considered as proceeding always at a meaningful level. The relations between biology and psychology are clearly drawn. The discussion of theory is vitalized by examples from actual situations. Most of the chapters are preceded by an analytical outline of content, and followed by a bibliography.

HUSBAND, RICHARD WELLINGTON

General psychology. New York: Farrar and Rinehart, Inc., 1940. 513 p. illus. 23 cm. \$3.00. 3057

Contents: What is psychology? Mental evolution. Child development. Functions of the brain and nervous system. General principles; vision. Audition and contact senses. Physiological and social motives. Practical motivation. Nature of emotions. Acquisition and control of emotions. The nature and measurement of personality. Development of the personality. Deviations of the personality. Individual differences. The nature and measurement of intelligence. Educational and vocational guidance. Group differences. Heredity and environment. Learning. Memory and forgetting. Thinking and reasoning. Unconscious and automatic processes. Index of authors. Index of subjects.

Note: A college textbook for introductory psychology courses. It treats psychology as a social rather than a biological science, and links the subject to daily life—the choice of a vocation, business and social participation. A list of references follows each chapter.

KELLER, FRED SIMMONS

The definition of psychology; an introduction to psychological systems. New York: D. Appleton-Century Company, Incorporated, 1937. 111 p. 20 cm. (The Century psychology series, R. M. Elliott, editor) \$1.00. 3058

Contents: The history of the problem. The founding of modern psychology. Titchener and structuralism. America and functionalism. Watson and behaviorism. Germany and Gestalt. The problem of definition.

Note: This introduction has been designed to provide students who are just beginning a study of psychology with an adequate conception of the problem of defining and systematizing the science. Stressing the developmental aspect of the problem of definition, the book first presents the historical setting by reference chiefly to Descartes, the British empiricists, the evolutionary doctrine, and the 19th century German physiologists. Following a treatment of the founding of experimental psychology by Wundt, is an account of Titchener's structuralistic or introspective psychology, and then functionalism is considered as a movement, typically American, in opposition to structuralism. Watsonian behaviorism and the Gestalt system are then discussed. The final chapter restates the problem and argues, from five earmarks of modern teaching, for a present-day trend towards a sophisticated behaviorism.

LUND, FREDERICK HANSEN

Psychology; an empirical study of behavior. New York: The Ronald Press Company, 1933. 475 p. illus. 21 cm. (Psychology series, Albert T. Poffenberger, editor) \$3.00. 3058a

Contents: Psychology as a natural science. Characteristics of human adjustment. The receptors. The effectors. The central processes. The primary reaction systems—reflexes, conditioned and unconditioned. Emotional reactions. Motivation. The learning process. Social and verbal behavior. Perceptual responses. Thinking. Sleeping, dreaming, imagining. Individual differences. Intelligence, its nature and measurement. Index.

Note: An empirical and biological approach to psychology is made to introduce the subject to college students. The book traces constitutional and structural features basic to behavior, attends to principles of modification, notes conditioned and redintegrative processes. The author includes experimental material and photographs of laboratory set-ups to stimulate students. There are 102 illustrations and 22 tables. Exercises and references accompany each chapter.

McDOUGALL, WILLIAM

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The energies of men: a study of the fundamentals of dynamic psychology. New York: Charles Scribner's Sons, 1933. 395 p. illus. 19 cm. \$2.50. 3059

Contents: Introductory. Schools of psychology. The simpler forms of mental life. What is the innate basis of instinctive behavior? Behavior of higher animals. The comparative method applied to the problem of the native endowment of man. The innate propensities and abilities of man. Natural man and social man. The mind in action. The role of pleasure and pain. The blending of feeling with emotion. Disposition, temper, temperament, and character. Organization of the affective life. The sentiments. Tastes. Subconscious working of tendencies. Disorder of mental function. Amnesia and other dissociative symptoms. Functional disorder of the repressive type. Compulsions and obsessions. Mental hygiene and treatment. Some fundamentals of the physiology of the brain. Learning and the steering processes. Personality. Index.

Note: Endeavors to present in one volume of moderate compass the most essential parts of the author's *Outline of psychology*, New York, 1923, and *Outline of abnormal psychology*, New York, 1926. Intended for students who intend to specialize in psychology, the book is concerned almost exclusively with the problem of the native endowment of man and the growth of that endowment into a human personality. Features of the work are a new treatment of the instinct-intelligence problem and the outline of a new theory of the learning process.

MOORE, THOMAS VERNER

Cognitive psychology. Philadelphia: J. B. Lippincott Company, 1939. 636 p. illus. 22 cm. \$4.00. 3060

Contents (abridged): Consciousness and the nervous system. Landmarks in the theory of perception. The psychology of perception. The pathology of perception. The human intellect. The psychology of memory. The relation between body and mind. Glossary. Index.

Note: This work by the professor of psychology at the Catholic University of America at Washington, D.C., attempts to present

a digest of the experimental work and observations of various kinds which throw light on the problem of how the human mind acquires knowledge. The material is arranged in the form of a textbook for students of psychology. A discussion of the pathology of the mind is presented in an effort to clarify the problems of normal psychology and psychiatry. The author believes that cognitive psychology cannot be adequately discussed without going into the relations between psychology and philosophy, and consequently there is a rather extensive treatment of metaphysical problems, involving numerous references to St. Thomas Aquinas, St. Augustine, Aristotle, Descartes, and other philosophers. The work is fully documented in footnote references but there is no bibliography.

MORGAN, JOHN JACOB BROOKE

Psychology. New York: Farrar & Rinehart, Inc., 1941. 612 p. illus. 22 cm. \$3.00. 3061

Contents: The scientific attitude. Heredity and environment. Prenatal and infant development. Intelligence. Springs of action. Social motives. Emotional behavior. The acquisition of motor skills. Conditioned reaction learning. Memorizing. The central nervous system. Vision. Hearing. Smell, taste, and somesthesia. Perceiving. Problem solving. The psychological individual. Glossary. Index of names. Index of subjects.

Note: A college textbook for introductory psychology courses. The scientific method is emphasized throughout. Practical applications of psychological truths are indicated throughout the book but are most numerous in the last chapters. Each chapter is followed by review questions and a list of references. A glossary of technical terms occupies 25 pages at the end of the book. There is available to accompany the text a *Workbook in psychology* by John B. Morgan, New York: Farrar & Rinehart, 1941. 122 p. \$0.80.

MUENZINGER, KARL FRIEDRICH

Psychology: the science of behavior. New York: Harper and Brothers, 1942. 441 p. illus. 22 cm. \$3.00. 3062

Contents: The scientific analysis of behavior. Motivation. Discrimination. Performance. Affectivity. Nervous processes and reflex activity. The psycho-physiology of motivation. The psycho-physiology of discrimination. The psycho-physiology of performance. The psycho-physiology of affectivity. Static individual differences. Dynamic individual differences. The structure and reorganization of personality. Uniformity of social behavior. Appendixes: The psychology of learning. Mind and body. Scientific method in psychology. Glossary. Index.

Note: This volume presents the material of the usual introductory course in a systematic way. The author describes all psychological events in terms of a four-fold frame of reference: motivation, discrimination, performance, and affectivity. This method insures the complete description of all those relationships of a single psychological event with which experimental analysis may deal. The material is organized into three parts: the dynamics of behavior, the psycho-physiology of behavior, and individuality and social behavior. Wherever the scientific analysis permits, practical applications of the subject are made.

MURPHY, GARDNER

General psychology. New York: Harper & Brothers, 1933. 657 p. illus. (part col.) 22 cm. \$3.50. 3062a 150 m 95g

Contents: Psychology as a science. The racial origin of behavior patterns. The individual origin of behavior patterns. The simpler motives. Emotions. The interpretation of emotional patterns. Methods of measuring emotion. The simpler senses. Hearing. Sight. The development of perception. Perception and the nervous system. Feelings. Attention and discrimination. Experimental aesthetics. Learning. Memory. The theory of learning and memory. Thought. Imagining, dreaming, inventing. Intelligence tests. Hereditary factors in mental growth. The interrelation of abilities. The conditions of work. The development of personality. The measurement of personality. The theory of personality. Psychological "schools." Index.

Note: A comprehensive textbook for college courses in general psychology. The book is characterized by a readable style that is not obtained by writing down to the student. Extensive use is made of graphs and other illustrative matter, and users of the book are urged by the author to pay as good attention to them as to the text itself. Brief lists of problems and references accompany the chapters. For shorter courses the author has prepared *A briefer general psychology*, New York: Harper & Brothers, 1935, \$3.25.

PAINTER, GEORGE STEPHEN

150
P163
Fundamental psychology. New York: Live-
right Publishing Corporation, 1938. 519 p. illus.
21 cm. \$3.75. 3063

Contents: Part I, Introductory: Methods of psychology. Physiology of the nervous system. Part II, Sensibility; Sensation: Organic sensations. Cutaneous sensations. Gustatory sensation. Olfactory sensation. Auditory sensation. Visual sensation. Affection: Feeling. Emotion. Part III, Intellection: Perception. Conception. Judgment. Inference. Memory. Imagination. Part IV, Volition: Will. Attention. Efection. Personality. Appendix. Bibliography. Index.

Note: A textbook for students who are seriously interested in the subject. The author does not intend the treatment for those without previous training. He has aimed to convey a knowledge of the precise physiological factors involved in the production of sensations. The book is illustrated mainly with figures taken from older works on physiology and anatomy.

PILLSBURY, WALTER BOWERS

1919
The fundamentals of psychology. Third edi-
tion. New York: The Macmillan Company,
1934. 663 p. illus. 20 cm. \$3.50. 3064

Contents: Introduction. The nervous system. Sensation. Individual differences. The native and the acquired in human conduct. Feeling as selective agent and as phase of consciousness. Emotion. Learning—motor phases. Recall—its conscious aspects. Selection or attention. The unit of experience. Perception—space. Memory. Reasoning. Imagination and dreams. The control of movement—volition. Work and fatigue. Personality and the self. Characteristic schools of psychology. Index of names. Subject index.

Note: A standard American college textbook in this subject which is distinguished by an attempt to present fairly the viewpoints of the various important schools of psychology. The treatment is for beginning courses. This edition has been extensively revised. The chapter on characteristic schools of psychology is a handy summary. Brief lists of references are given at the end of each chapter.

PILLSBURY, WALTER BOWERS, AND L. A. PENNINGTON

Handbook of general psychology. A summary
of essentials and a dictionary of terms. New
York: The Dryden Press, 1942. 400 p. illus. 19
cm. (The Dryden Press handbooks, Samuel
Smith, general editor) \$1.35. 3065

Contents: Part I, Summary of essentials: Introduction to general psychology. The neural basis of behavior. Sensation. Individual differences. Intelligence. Motivation and adjustment. Learning. Man's affective life. Revived experiences—imagination and dreams. Attention. Perception. Memory: acquiring and retaining knowledge. Reasoning. Action—the control of movement. Personality. Part II: Dictionary of terms. Part III: Contributors to psychology. Part IV: Reference books in general psychology. Index.

Note: This handbook provides an introduction to the aims, methods, and principles of psychology and also serves as a guide for the college student who is beginning the study for the first time. An effort has been made to set forth the specific aims, methods, and related information for the uninitiated and to summarize the significant and essential materials. There are test questions and references after each chapter. The dictionary of terms defines about 900 words and phrases encountered in psychology and related studies.

POWERS, FRANCIS F., AND OTHERS

377.2
P878
Psychology in everyday living, by Francis F.
Powers, T. R. McConnell, William Clark Trow,
Bruce V. Moore, and Charles E. Skinner. Bos-
ton: D. C. Heath and Company, 1938. 511 p.
illus. 20 cm. \$2.75. 3067

Contents: Part I, The nature of psychology: Psychology in everyday living. Psychology as an emerging science. Foundations of behavior. Part II, Understanding ourselves: Personality. Psychology of adjustment. Human motivation. Our emotional life: its genesis and control. Intelligence and special aptitudes. Indi-

vidual differences. Part III, Adjustment to college and life: Social behavior and adjustment. Choosing a vocation. Psychology and marriage. Part IV, Learning and study: The general nature of learning. Acquiring knowledge and skill. The acquisition of attitudes. Learning to study. Problem-solving and creative learning. Part V, Applications of psychology: Psychology in business and industry. Psychology in law, politics, and religion. Psychology in medicine. Psychology in education. Appendix: Supplementary book list. Index.

Note: The purpose of this text is to introduce data, principles of psychology, and points of view to college students who assumedly will not become professional psychologists. It shows the implications of the facts of empirical psychology whenever possible, and their application to the life and activity of college students. Each chapter is followed by a brief bibliography of related books and articles.

RUCH, FLOYD LEON

Psychology and life; a study of the thinking,
feeling, and doing of people, including a section
on physiological backgrounds. New edition.
Chicago: Scott, Foresman and Company, 1941.
754 p. illus. 23 cm. \$2.75. 3067a 1957

Contents (abridged): Part I, Foundations: Preview of psychology. Factors in development. Part II, Inner springs of action: Motivation. Emotions. Control of emotions. Normal and abnormal reactions to conflict. Part III, Knowing the world: The special senses. How we observe. Learning. The management of learning. Thinking. Part IV, Man among people: Personality and individual differences. Intelligence. Vocational and employment psychology. Getting along with people. Psychology and social problems. Part V, Physiological backgrounds: The form and functioning of the nervous system. Division of labor in the brain. References. Name index. Subject index.

Note: A general psychology textbook for college courses. The author evinces "a deep concern for the individual in a war-torn world." Recommended readings at the end of each chapter and a 15-page bibliography at the end of the volume, divided by chapters.

SCHEIDEMANN, NORMA VALENTINE

Experiments in general psychology. Revised
and enlarged edition. Chicago: The University
of Chicago Press, 1939. 200 p. illus. 27 cm. \$1.75. 3068 1929

Contents: Neurological basis. Sense organs. Phenomena of sensation. Schools or systems of psychology. Imagery. Attention. Perception. Aberrations of perception. Association. Suggestion. Memory. Forgetting. Learning. Individual differences. Heredity. Motivation. Personality. Emotions. Feelings. Social relations. Intelligence. Reasoning. Judgment. Belief. Dreams and sleep. Language. Literature. Aesthetics. Applied psychology. Abnormal psychology. Pseudo-psychology. Miscellaneous studies.

Note: Increased from 42 to 81 psychological experiments and from 112 to 214 pages, the new edition of this student's notebook manual is enlarged by the introduction of material from new fields of research and by the addition of data bearing on the history and interpretation of the experiments. The manual is keyed to thirteen standard American psychology textbooks.

SEASHORE, ROBERT HOLMES, EDITOR

Fields of psychology, an experimental ap-
proach. New York: Henry Holt and Company,
Inc., 1942. 643 p. illus. 22 cm. \$3.25. 3069 150
S2176

Contents: Part I, Introduction, by Robert H. Seashore. Part II, General experimental psychology, by Claude E. Buxton. Part III, Physiological psychology, by Donald B. Lindsley. Part IV, Comparative psychology, by Harry F. Harlow. Part V, Human development, by Beth L. Wellman. Part VI, Educational psychology, by Dael L. Wolfe. Part VII, Vocational guidance, by Edmund G. Williamson. Part VIII, Industrial psychology, by Harrison Musgrave. Part IX, Avocational psychology, by Harold G. Seashore. Part X, Social psychology, by Paul R. Farnsworth. Part XI, Abnormal and clinical psychology, by Edmund S. Conklin. Part XII, Systematic psychology, by Robert H. Seashore. Index.

Note: A representative cross section of the specialized fields of present-day psychological experimentation. Each chapter deals with a single experimental problem or set of related problems, opening with a few pages of background setting, then plunging immediately into a relatively non-technical account of the ex-

periments, and closing with a page or two summarizing the significance of the findings both as to the establishment of facts and principles and their application to other types of experimentation in related problems.

SHAFFER, LAURANCE FREDERIC, AND OTHERS

Psychology, by Laurance F. Shaffer, B. von Haller Gilmer, and Max Schoen. New York: Harper & Brothers, 1940. 521 p. illus. (part col.) 22 cm. \$3.00. 3070

Contents: The aim and scope of psychology. The nature of human adjustments. The bodily basis of behavior. The beginnings of behavior. Learned behavior. Emotional behavior. Motivated and voluntary behavior. The general nature of experience. Visual experience. Auditory experience. Other modes of experience. Remembering. Thinking. Abilities and their measurement. Personality and character. Social adjustments. Suggested readings and references. Index and glossary.

Note: A basic text for the beginning course in psychology. The treatment is developmental and the text is factual and experimental, with a wealth of illustrative material including both research studies and everyday experiences common to the student's life. Supplementary material available from the same publisher includes a student's workbook of questions and exercises, a syllabus of experimental demonstrations in general psychology, objective tests on both the text and the experimental demonstrations, and an instructor's manual for the workbook and experimental demonstrations, with keys to the tests.

SKINNER, CHARLES EDWARD, EDITOR

Readings in psychology. New York: Farrar & Rinehart, Inc., 1935. 853 p. illus. 24 cm. \$2.90. 3071

Contents: The general nature of psychology, by Harold Schlosberg. The methods of psychology, by Robert T. Rock, Jr. Some principles of behavior, by John F. Dashiell. Psychology of individual differences, by Lester D. Crow. Intelligence, by Paul L. Boynton. Personality, by Goodwin Watson. Heredity and environment, by William C. Trow. The maturation of mental functions, by Nancy Bayley. The nervous system, by Frederick H. Lund. Receptors and their relation to adjustment, by Coleman R. Griffith. Effectors and adjustment, by C. Ladd Prosser. The general problem of learning, by Daniel B. Leary. The laws and principles of learning, by Daniel B. Leary. Memory, by G. Milton Smith. Motivation, by Charles M. Diserens. Feeling and emotion, by Christian A. Ruckmick. Attention and discrimination, by J. P. Guilford. Perception, by Adolph W. Aleck. Imagery and imagination, by Max Schoen. Thinking, by Edna Heidebreder. Volition, by John J. Ryan. Social institutions and social behavior, by Kimball Young. Conditions of efficient work, by Bruce V. Moore. Applied psychology, by James D. Weinland. History of psychology, by Walter B. Pillsbury. Contemporary schools of psychology, by Clarence E. Ragsdale. Bibliography. Index.

Note: A supplementary book for beginning college students. References and exercises appear at the end of each chapter.

STARCH, DANIEL, AND OTHERS

Controlling human behavior; a first book in psychology for college students, by Daniel Starch, Hazel M. Stanton and Wilhelmine Koerth, assisted by Roger A. Barton. New York: The Macmillan Company, 1936. 638 p. illus. 22 cm. \$2.90. 3072

Contents: Introduction—psychology and you. Controlling the behavior of self—I-wants and determination of human behavior. Controlling routine behavior. Control through habits. Learning and habits of study. How to think. Remembering how to concentrate for work. How to use one's energies efficiently. Controlling feeling and emotions. Behavior of self in social contacts. Behavior of self toward associates in occupations. Selection of vocation. Personality. Behavior hygiene. Controlling the behavior of others—controlling the behavior of children in the home. Controlling the behavior of children at school. Vocational and avocational direction. Controlling behavior of abnormal people. Controlling behavior through personal selling. Controlling behavior through advertising. Controlling behavior through public speech. Controlling the behavior of others through music, art, and entertainment.

Controlling public opinions. Controlling behavior through religion. Conclusion—the art of living. Index.

Note: Designed primarily as a class text for college students who do not intend to major in the field, this book presents a comprehensive survey of the general principles of psychology and their applications in everyday life. Study questions and full, selective bibliographies are appended to each chapter.

TIFFIN, JOSEPH, AND OTHERS

The psychology of normal people, by Joseph Tiffin, Frederic B. Knight, and Charles Conant Josey. Boston: D. C. Heath and Company, 1940. 512 p. illus. 23 cm. \$2.75. 3073

Contents: Preface. What is psychology? Personality and behavior. Differences between people: how they affect our behavior. Differences in environment: how they affect our behavior. Personality: how we judge and measure it. Our feelings and emotions. Attention: how we direct our energies. Learning: how we change our behavior. Memory: how we retain the past and are influenced by it. Intelligence: how we adjust ourselves to new situations. Perception: how we know the world about us. Imagination: when and why we make up things in our imagination and dreams. Reasoning: how we make, or should make, our decisions. Speaking, reading, and writing: how we express ourselves. References. Index.

Note: An introductory college text, which surveys psychology as a science, relates its study to problems of everyday life. Summaries, discussion questions, and extensive graded lists of references follow the chapters. Figures and graphs are used to augment the text. George R. Thornton and Joseph Tiffin's *Exploring normal psychology*, Boston, D. C. Heath and Company, 1940, 139 p., \$0.80, is a laboratory manual designed for use with this text.

VALENTINE, WILLARD LEE

Experimental foundations of general psychology. Revised edition. New York: Farrar and Rinehart, Inc., 1941. 432 p. illus. 21 cm. \$2.25. 3074

Contents (abridged): The nature of the psychological experiment. Phrenology, physiognomy, graphology and character analysis. Aptitudes. Inheritance. Maturation and growth. Intelligence. The meaning of intelligence test scores. Physiological conditions. Drives and motives. Motives and incentives. Frustration. The development of emotional behavior. Emotion in adults. Suggestibility and hypnosis. Perceptual behavior. Conditioning. Learning. Remembering. Reasoning. Learning, thinking, imagining, dreaming and the brain. Summary. Index of authors. Index of subjects.

Note: The first edition of this elementary text has been revised to add further interpretative comment to the description of important experiments, to eliminate as much technical vocabulary as possible, to add new material to most of the chapters, and to provide an entirely new summary chapter. The intent of the first edition to develop a series of broad generalizations has been maintained. Controversial issues are omitted and practical applications have been stressed for the benefit of those who will probably have no further courses in psychology. The book is intended for use in conjunction with one of the standard introductory texts in psychology.

WOODWORTH, ROBERT SESSIONS

Psychology. Fourth edition. New York: Henry Holt and Company, Inc., 1940. 639 p. illus. 24 cm. \$3.75. 3074a

Contents: The aim and method of psychology. The individual in his environment. Individual differences in ability. Intelligence. Personality. Physiological and social factors in personality. Heredity and environment: development. The nervous system. Learning. Memory. Motivation. Feeling and emotion. Observation. The sense of sight. The other senses. Thinking. Imagination. Personal applications. Questions and exercises. Index.

Note: In the United States, this is a widely used text for introductory college courses in general psychology, noted for its organization and its readable style. This edition has been extensively revised. The same publisher offers a laboratory manual designed for use with this text by G. M. Smith, *Workbook in psychology*, third edition, 1934, 75 p., paper, \$0.45.

Physiological Psychology

ANASTASI, ANNE

136
1912
Differential psychology; individual and group differences in behavior. New York: The Macmillan Company, 1937. 615 p. illus. 20 cm. \$3.00. 3075

Contents: Fundamental principles of individual variation: Historical introduction. Nature and extent of individual differences. Heredity and environment. General family resemblances. Special family resemblances. The effects of training. Mental growth. The relationship between mental and physical traits. The question of constitutional types. Variation within the individual. Mental organization. Analysis of major group differences: The subnormal. Genius. Sex differences—major problems. Sex differences—general results. Racial comparisons—problems of grouping, problems of measurement. Racial versus cultural differences. Urban and rural populations. The individual as a member of multiple groups. Author index. Subject index.

Note: Designed to serve as a text in special courses in differential psychology or as a supplementary text in courses in general, applied, social or educational psychology, and mental testing. The author seeks to use differential psychology as an approach to the understanding of behavior, and to collect and present the data and conclusions of differential psychology in a form intelligible to the undergraduate college student.

ASSOCIATION FOR RESEARCH IN NERVOUS AND MENTAL DISEASE

The inter-relationship of mind and body; the proceedings of the Association, New York, December 27th and 28th, 1938, with 28 illustrations and 10 tables. Baltimore: The Williams & Wilkins Company, 1939. 381 p. illus. 23 cm. \$6.00. 3075a

Contents: Inter-relationship of mind and body, by Foster Kennedy. Relationship of hereditary factors to mental processes, by Abraham Myerson. Electrical activity of the brain: its relation to physiological states and to states of impaired consciousness, by Hallowell Davis and Pauline A. Davis. Significance of the alterations of mental and emotional processes produced by diseases of the brain, by Tracy J. Putnam. Alteration of mental and emotional processes by chemical and hormonal agents, by Karl M. Bowman. The psycho-physiological effects of reduced oxygen pressure, by Ross A. McFarland. Effects of vitamin deficiency on mental and emotional processes, by Norman Jolliffe. Effects of barbiturates and bromides on mental and emotional processes, by Frank J. Curran. Effects of benzedrine in altering mental and emotional processes, by Wilfred Bloomberg. Effects of marihuana, by Walter Bromberg. Central nervous mechanisms for emotional behavior patterns in animals, by Philip Bard. Levels of autonomic function with particular reference to the cerebral cortex, by J. F. Fulton. Fetal behavior, by Davenport Hooker. Behavior of the newborn infant and early neuro-muscular development, by Myrtle B. McGraw. The brain structure of the newborn infant and consideration of the senile brain, by J. LeRoy Conel. Physiological changes in emotional states, by John C. Whitehorn. Production of somatic disease by emotional disturbance, by Felix Deutsch. Effects of culture on mental and emotional processes, by Ralph Linton. Physiological effects of psychoanalytic therapy, by Leon J. Saul. Use of hypnosis in the study of the acid base balance of the blood in a patient with hysterical hyperventilation, by Mandel E. Cohen and Stanley Cobb. Evidence for body-mind relationship afforded by the phenomena of psychotherapeutic experiences, by Leo Kanner. Psychotherapeutic effect by chemical agents, by Manfred Sakel. Index.

Note: Volume XIX of the *Research publications* of this Association. The inter-relationship of mind and body is studied from various angles: the mechanisms of behavior; the effects of disease, physical agents, physiological conditions, and pharmacological agents upon the mental and emotional processes; the effects of mental and emotional processes on the body; and evidences of such an inter-relationship as furnished by psychotherapy.

BEEBE-CENTER, JOHN GILBERT

The psychology of pleasantness and unpleasantness. New York: D. Van Nostrand Company, Inc., 1932. 427 p. illus. 22 cm. \$3.75. 3076

Contents: Introduction. Definition of pleasantness and unpleasantness and of hedonic tone. Methods of experimentation. The relation of hedonic tone to mental elements. Hedonic tone in relation to primary external stimuli. Hedonic tone in relation to secondary external stimuli. Hedonic tone in relation to motivating factors. Hedonic tone in relation to maturation and learning. Hedonic tone in relation to muscular and glandular responses. Memory in relation to hedonic tone. Hedonic tone in relation to nervous processes. The theory of hedonic tone.

Note: This book treats the hedonic problem in the light of modern experimental psychology. The extensive literature that has grown up on this subject is brought together by means of many references to the various psychological journals published in different languages. In coordinating the material, the author has achieved consistency by the use of a single hedonic unit.

DODGE, RAYMOND

Conditions and consequences of human variability. New York: Yale University Press, 1931. 162 p. 23 cm. \$2.50. 3077

Contents: Preface. Introduction. The variability of human reactions. The influence of refractory phase on behavior. The influence of relative fatigue. Inhibition and variability. Inhibition and summation as consequences of refractory phase. The effects of faint stimuli on human sensory and motor reaction systems. The occasional development of behavior in simple patterns. The complications of reactions by the interaction of neural strata. Cortical systematization. Consequences of persistent cortical systematization. The relationship between mind and brain. Mind without brain.

Note: A discussion, from a behavioristic Gestalt point of view, of human variability and the conditions of mental development. Techniques of the author's experimentation are not described in detail. There is no index.

FREEMAN, FRANK SAMUEL

Individual differences; the nature and causes of variations in intelligence and special abilities. New York: Henry Holt and Company, 1934. 355 p. illus. 20 cm. \$2.75. 3078

Contents: Introduction. The extent of individual differences. The influence of inheritance. The influence of environment. The influence of race and nationality. Differences due to sex. The factor of age: infancy to adolescence. The factor of age: maturity and decline. Special abilities and disabilities. The factors of physical development and personality. Supplementary bibliography. Index.

Note: A study of the major factors involved in the problem of individual differences in intellectual or mental abilities. A background of representative studies of the earlier periods is presented, against which the results of contemporary investigations and theories developed from them may be considered. The book is designed for students of education and psychology, and for educators and physiologists.

FREEMAN, GRAYDON LAVERNE

Introduction to physiological psychology. New York: The Ronald Press Company, 1934. 579 p. illus. 21 cm. (Psychology series) \$4.50. 3079

Contents: Introduction, the field of physiological psychology. Part I, Basic neural mechanisms in behavior: Origin and development of neural mechanisms. Structure-functional relations in neural tissue. Gross features of neuromuscular action. Receptor mechanisms; interoceptors. Receptor mechanisms; exteroceptors. Effector mechanisms. Adjustor mechanisms. Part II, Structure-functional organization of neural mechanisms: The stratification of reaction patterns. Spinal cord and nerves. Sympathetic ganglia and nerves. Medulla oblongata and cranial nerves. The cerebellum. Midbrain and thalamus. Cerebral hemispheres. The great afferent and efferent conduction systems. Part III, Integrative action of neural mechanisms: Introsensory integration at the spinal level. Intersegmental integration at spinal level. Sensory fusion at cortical level. Incitation and redintegration at cortical level. Neural equilibrium, competition, and dominance. Facilitation and inhibition. Part IV, Neural mechanisms and variable behavior: Motivation. Neuromuscular sets and postures. Learn-

ing. Decrement, fatigue and oscillation. Intelligence. Temperament.

Note: This work makes no pretense to exhaustive scholarship upon any of the topics treated, but seeks only to relate the highlights of each one into a consistent whole for students of psychology, medicine, education, sociology, and zoology. References at the end of each chapter direct those having particular problems to more comprehensive reports.

GILLILAND, ADAM RAYMOND

Genetic psychology. New York: The Ronald Press Company, 1933. 351 p. illus. 20 cm. (Psychology series) \$3.25. 3080

Contents: The problem. The nature of life. The invertebrate series. The vertebrate series. Prehistoric man. Factors in inheritance. Prenatal development. The child at birth. Physical growth and the development of skill. Play. Music and art. Growth of intelligence. Growth of perception. Language. Memory and thinking. The emotions. Adolescence. Growth of personality. Growth of character. Disease and health.

Note: This textbook was written to meet the need in modern psychology for a treatment of both phylogenetic and ontogenetic development. It treats the whole period of ontogenetic development, giving consideration to the problems of later maturity and senescence as an integral part of the life cycle. Emphasis is put on the evolution of structure and the evolution of behavior. Structure has been emphasized only in so far as it has been necessary for an understanding of the evolution of behavior. Essential facts of evolution and inheritance have been presented as adequately as simplicity of statement permits.

GILLILAND, ADAM RAYMOND, AND E. L. CLARK

Psychology of individual differences. New York: Prentice-Hall, Inc., 1939. 535 p. illus. 21 cm. \$3.00. 3080a

Contents (abridged): The problem of individual differences. The causes of differences. The measurement of differences. Differences in physical characteristics. Sex differences. Race differences. The influence of near ancestry. Differences in intelligence. Types of extreme deviations. Individual differences in personality. Individual differences in learning and teaching. Applications of individual differences in business and industry. The significance of individual differences.

Note: This collection of the more important facts and conclusions in the psychology of individual differences covers those which are associated with sex, race, and age as well as a consideration of differences on the basis of heredity and environment. Numerous graphs and tables of original data have been included. Exercises at the end of each chapter are designed primarily to suggest interpretations of presented data.

HATHAWAY, STARKE ROSECRANS

Physiological psychology. New York: D. Appleton-Century Company, Incorporated, 1942. 335 p. illus. 21 cm. (The Century psychology series, R. M. Elliott, editor) \$3.00. 3081

Contents: The general functioning of the nervous system. The gross anatomical relationships of the nervous system. The microscopic appearance of the nervous system. The physiology of the neuron and the nervous impulse. The cerebral cortex and its functions. The subcortical structures and the thalamic nuclei. The midbrain, pons, cerebellum, medulla and spinal cord. The peripheral nervous system—spinal and cranial nerves and the peripheral autonomic structures and connections. The functional activities of the nerves and spinal cord. The effects of blood transported substances upon behavior. Emotions and affective states. Speech. Intelligence. Consciousness and sleep. Motivation and psychosomatic relationships. Bibliography. Index.

Note: The purpose of the book is to provide a simplified but accurate functional anatomy of the nervous system, with experimental and clinical examples of the facts presented. The early chapters state the problem of physiological psychology as an inter-disciplinary study, with samples demonstrating integral behavior. There follows a generalized treatment of the appearance and physiology of the nervous system, from which is developed a more detailed study, proceeding anatomically from the complex cerebral cortex through to the peripheral nerves. The peripheral nervous system, the subject of much modern physiological experimentation, receives particularly full treatment. Transitional material on the nervous basis of sensation leads to the final chapters which treat the nervous system as a functional tissue.

HERRICK, CHARLES JUDSON

The thinking machine. Second edition. Chicago: The University of Chicago Press, 1932. 374 p. illus. 20 cm. \$3.00. 3081a

Contents: Part I, Mechanistic science: Our program. The order of nature. Can a machine think? What is a machine? Natural machines. How machines are made. Part II, Mechanistic biology: Living machines. How the living machinery works. Reflex. Conditioned reflexes. Brains. Brains and viscera. The vital energies. How living machines are made. How men are made. Part III, Mechanistic psychology: What is psychology? Mental development. Emotion. Intuition and insight. Learning. Organs of consciousness. The thinking process. Mental balance. The mental energies. Part IV, Human nature: Is man a machine? Control of behavior. Voluntary control. Body and spirit. Values. Human biology. Index.

Note: Written for the general reader, this book describes the function of the human brain from a biological angle. In this edition the author has revised his work and brought it up to date in the light of recent research.

HOAGLAND, HUDSON

Pacemakers in relation to aspects of behavior. New York: The Macmillan Company, 1935. 138 p. illus. 22 cm. (Experimental biology monographs) \$3.00. 3081b

Contents: Introduction. Kinetics of the steady state. Rhythmicity of response and relaxation oscillators. Effects of temperature on pacemaking "master reactions." Lateral-line reception in fishes. Peripheral inhibition (accommodation) and the steady state. The chemical basis of our sense of time. Recapitulation and concluding remarks. Appendix: An equation of the steady state. Citations. Index.

Note: In this work the author deals with the applications of the conception of the dynamic steady state to a variety of problems of plant and animal behavior. Certain examples of the behavior of protoplasmic systems are selected and discussed in detail to illustrate how physiochemical master reactions, involved in the maintenance of the steady state, may determine as pacemakers the velocities of complex behavioral events. In the development of these ideas the nature of the excitatory processes involved in nervous action is discussed, and a specific neuro-humoral hypothesis of adaptation of mechanoreceptors is presented here for the first time. A possible relation between sensory adaptation and inhibition in the central nervous system is suggested in terms of this hypothesis. The temperature method of analysis of chemical pacemaking reactions is considered and the method is applied to studies of the behavior of the organism as a whole.

HOLT, EDWIN BISSELL

Animal drive and the learning process, an essay toward radical empiricism. New York: Henry Holt and Company, 1931. 307 p. 21 cm. \$2.75. 3082

Contents: Physiology versus verbal magic. Growth and learning. The pattern of organism. The pattern of the nervous system. The conditioned reflex. Random movements. The reflex-circle (Bok). Circular reflexes and progression: inhibition. Equilibration and postural tonus. The education of sensory surfaces. The chain reflex. Avoidance responses: trial, error, and success. Echo and imitation. Instinctive and appetitive drives. Response to mild annoyers: abience with adience. Obstacles: trial-and-error learning. Reflex conduction and integration: the objective reference of reflexes. Reflex conduction and integration: motor half-centres, reinforcement and inhibition. Reflex conduction and integration: synaptic charge, partial and complete overcrowding. Further factors in integration: sustained responses and the locus of freedom, cross-conditioning. Motor block. The organism as a whole. This material world, by Harold Chapman Brown. Bibliography. Index.

Note: Contains an original, ground-breaking demonstration, by means of exhaustive research, that conscious phenomena are to be explained entirely in physical terms, especially in terms of physiology. For advanced students, educators, and psychologists.

HUBER, ERNST

Evolution of facial musculature and facial expression. (With 28 figures by the author) Balti-

more: The Johns Hopkins Press, 1931. 184 p. illus. 25 cm. \$2.50. 3082a

Contents (abridged): Historical notes. Evolution. The rise of facial musculature and facial expression in the primates. Fundamental evolutionary trends. Lemuroidea. Tarsiodea. Anthro-
poida. Platyrrhines. Catarrhines. Racial studies on facial musculature of various human stocks. American Negro compared with the white. Papuan and Melanesian. Australian. Hawaiian. Malay. Chinese and Japanese. American Indian. Reconstruction of facial musculature in fossil man. Pre- and post-natal development and racial differentiation. Evolution during phylogeny. Racial differences in facial expression. Conclusions. Literature.

Note: In this special study, the author emphasizes "the importance of analyzing the psychic component of facial musculature during development from the new-born to the adult within various races." Ethnologists and psychologists who attempt to understand emotional complexes and human behavior will be interested in the book. The 28 diagrams illustrate parallels and contrasts.

HULL, CLARK LEONARD

150
H578 Principles of behavior; an introduction to behavior theory. New York: D. Appleton-Century Company, Incorporated, 1943. 422 p. illus. 21 cm. (Century psychology series; R. M. Elliott, editor) \$4.00. 3082b

Contents: The nature of scientific theory. Introduction to an objective theory of behavior. Stimulus reception and organism survival. The biological problem of action and its coordination. Characteristics of innate behavior under conditions of need. The acquisition of receptor-effector connections—primary reinforcement. The acquisition of receptor-effector connections—secondary reinforcement. The symbolic construct *sHr* as a function of the number of reinforcements. Habit strength as a function of the nature and amount of the reinforcing agent. Habit strength and the time interval separating reaction from reinforcement. Habit strength as a function of the temporal relation of the conditioned stimulus to the reaction. Stimulus generalization. Some functional dynamics of compound conditioned stimuli. Primary motivation and reaction potential. Unadaptive habits and experimental extinction. Inhibition and effective reaction potential. Behavioral oscillation. The reaction threshold and response evocation. The patterning of stimulus compounds. General summary and conclusions. Glossary of symbols. Index of names. Index of subjects.

Note: An objective systematic presentation of the fundamental principles of behavior. Technical considerations are omitted from the text, but are gathered at the end of the volume. Statements of primary principles are presented at the ends of the chapters, and each chapter has a list of references.

LANDIS, CARNEY, AND WILLIAM A. HUNT

612 833
L236 The startle pattern; with a chapter by Hans Strauss. New York: Farrar & Rinehart, Inc., 1939. 168 p. illus. 21 cm. \$2.50. 3082c

Contents: Introduction. Technique. The normal response. Conditioning. Infants and children. Animals. Psychoses and amnesia. Epilepsy and the convulsive disorders. Other specific conditions. Neurological disturbances. The nervous mechanism. Related physiological and psychological events. Secondary behavior. The summing up. References and index.

Note: The material in this book is based on a series of experiments, dealing with response to sudden stimuli, which were carried on in the psychology laboratories of the New York State Psychiatric Institute and Hospital and the Connecticut College for Women. The results of these experiments have applications in psychology, neurology, and psychiatry. For reference use in college courses, and by practicing psychiatrists.

LASHLEY, KARL SPENCER, EDITOR

150
L332 Studies in the dynamics of behavior, by Calvin P. Stone, Chester W. Darrow and Carney Landis and Lena L. Heath, edited by Karl L. Lashley. Chicago: The University of Chicago Press, 1932. 332 p. illus. 23 cm. (Behavior Research Fund. Monographs) \$5.00 3083

Contents (abridged): I, Wildness and savageness in rats of different strains, by Calvin P. Stone: Introduction. Previous studies. Group ratings for wildness and savageness in the present study. Dominance of the hiding tendency over hunger. Maze-learning. Bibliography. II, Reaction tendencies relating to personality, by Chester W. Darrow and Lena L. Heath: Introduction. The experimental procedure. Experimental data on various measures. Composite scores. Physiological factor analysis. Special groups of data. Discussion and conclusions. Bibliography. III, An attempt to measure emotional traits in juvenile delinquency, by Carney Landis: Introduction. Purpose of this study. Part I. A study of 100 delinquent boys. Part II. A study of 112 delinquent girls. Discussion of Parts I and II. Conclusions. Bibliography.

Note: Dr. Stone attacks the problem of the genetic origin of temperamental differences and the possibility of their modification by training. Dr. Darrow and Miss Heath present a detailed study of changes in the electrical resistance of the body with evidence of a relationship between certain characters of the electrical response and temperamental traits of the subject. Dr. Landis raises the question of whether the emotional constitution, as indicated by the available questionnaire and laboratory tests, can be regarded as a generally significant factor among the great number of conditions which contribute to delinquency.

LUND, FREDERICK HANSEN

157
L970m Emotions; their psychological, physiological and educative implications. New York: Ronald Press Company, 1939. 305 p. illus. 21 cm. \$3.50. 3083a

Contents (abridged): Identification of emotions. The neuro-glandular basis of emotional reactions. Cardio-vascular and respiratory changes. Gastro-intestinal and sexual changes. Metabolic and skin changes. Development and control of emotions. Emotions and motivation. Conclusion. Index.

Note: A report of a survey of recent researches into the emotions and the techniques effective in measuring emotion, originally undertaken for the American Council on Education's Committee on the Relation of Emotion to the Educative Process. Each chapter is summarized and includes a list of references.

MASSERMAN, JULES HYMEN

131
m384 Behavior and neurosis; an experimental psycho-analytic approach to psychobiologic principles. Chicago: The University of Chicago Press, 1943. 269 p. illus. 24 cm. \$3.00. 3083b

Contents: Part I, Rationale, methods, and experimental results: Historical introduction and general principles. Apparatus and methods. Neurophysiologic investigations of behavior. Experimental neurosis and therapy. Part II, Readings in the literature on experimental studies of behavior and neurosis: The cat as an experimental animal. "Conditioned reflex" concepts of behavior and neurosis. Motivational behavior. Frustration and motivational conflict. "Social interaction" and neurosis. Part III, Clinical and psychotherapeutic applications. "Conditioned reflex" concepts and human behavior. Summary and clinical applications. Bibliography and indexes.

Note: Original research by the author on animals (chiefly cats) is correlated with material from various sources: current knowledge in the fields of neurology, comparative psychology, psychology, psychobiology, and psychoanalysis, and data accumulated in the clinical experience of the author as a psychiatrist and psychoanalyst. As background, the development of various theories of behavior is traced from early Greek philosophy to their current formulations in Pavlovian conditionalism, Freudian psychoanalysis, and other modern schools of associationist or dynamic psychology. The author's object has been to apply the results of animal experiments investigating the neurophysiologic basis of drives and emotions, the establishment of action-signals and symbolisms, and the effects of motivational frustrations and conflicts in producing "neurotic" symptoms, to the understanding and treatment of human neuroses. The bibliography includes more than 900 references.

MILES, WALTER RICHARD, EDITOR

150
PRM Psychological studies of human variability. Princeton, N. J.: Psychological Review Company, 1936. 415 p. illus. 25 cm. (Psychological monographs. Vol. 47, no. 2; whole no. 212) \$4.50. 3083c

Contents: Experimental studies on children: The use of the tachistoscope in diagnostic and remedial reading, by Walter F. Dearborn. Intellectual growth of children as indicated by repeated tests, by Frank N. Freeman. Some observations of developmental stability, by Arnold Gesell. Complications of the early grasping reactions, by Henry M. Halverson. Sleep requirements during infancy, by Helen Thompson. A simultaneous observation-and-recording method with specimen records of activity patterns in young children, by Ruth W. Washburn. Experimental studies on adults: The relationship of muscle tonus changes to vibratory sensibility, by Louis H. Cohen and Stanley B. Lindley. Relative adaption times of the five senses, by Graydon L. Freeman. Individual differences in sensitivity to vertical motion of the body, by Herbert Gurnee. Age and job satisfaction, by Robert Hoppock. The end-spurt in memorization curves as an artifact of the averaging of individual curves, by Arthur W. Melton. Inhibition as a function of stimulus intensity, by Helen Peak. Individual differences in educational guidance, by Albert B. Crawford. The effect of forgetting upon individual differences, by J. Warren Tilton. Experimental studies on visual functions: Conditioned eyelid responses in monkeys, with a comparison of dog, monkey, and man, by Ernest R. Hilgard and Donald G. Marquis. An instrument for color stimulation and measurement, by Sidney M. Newhall. The effects of mild doses of alcohol and caffeine on optic nystagmus, by Carleton F. Scofield. The latency and velocity of the eye in saccadic movements, by Roland C. Travis. Spontaneous nystagmus—a study in neural rivalry and competition, by James Charles Fox, Jr., and Frank Hallock Couch. The reaction time of the eye, by Walter R. Miles. A comparison of the reaction mechanism mediating optokinetic nystagmus in human beings and in pigeons, by O. H. Mowrer. A comparison of the regional gradients of fusion frequency and visual acuity, by Robert T. Ross. The form of the vestibular eye-movement response in man, by G. R. Wendt. Historical and theoretical studies: Validity, reliability, and objectivity, by Henry F. Adams. Affective factors from the point of view of clinical psychology, by Edward M. Westburgh. Variability and culture, by Leonard W. Doob. The way of experiencing as a psychiatric concept, by Eugen Kahn and Louis H. Cohen. Childhood physical and mental health records of historical geniuses, by Catharine C. Miles and Lillian S. Wolfe. Integrating and dis-integrating effects of sound stimuli, by Helen H. Roberts. List of contributors. Index.

Note: This collection of 29 studies in physiological psychology is a commemorative volume in honor of Raymond Dodge, Professor of Psychology at Yale University. It includes four essays on Dodge and a bibliography of his writings. Bibliographies also accompany almost all of the studies, and many have summaries of statements of conclusions reached. Tables and diagrams supplement the text.

MORGAN, CLIFFORD THOMAS

Physiological psychology. New York: McGraw-Hill Book Company, Inc., 1943. 623 p. illus. 23 cm. (McGraw-Hill publications in psychology; J. F. Dashiell, consulting editor) \$4.00.

3083d

Contents: Historical introduction. Cellular functions. The internal environment. The physiology of nerve cells. The nervous system. Phylogenetic development. Ontogenetic development. The chemical senses. Visual physiology. Visual experience. Hearing. The skin senses. Proprioception. Survey of the senses. Reflexes and posture. Cerebral motor functions. Emotion. Sleep and activity. Instinctive behavior. Mating behavior. Bodily needs. Survey of adaptive behavior. Motor learning. Discriminative learning. Memory in man. Symbolic processes.

Note: A comprehensive and authoritative survey of experimental facts in the field of physiological psychology. After a historical introduction and a review of the basic facts of physiology and the nervous system, the book gives an extended treatment of the physiological basis of psychological development, sensory and motor phenomena, motivation, and learning and the higher thought processes.

PATERSON, DONALD GILDERSLEEVE

Physique and intellect. New York: The Century Co., 1930. 304 p. illus. 20 cm. (The Century psychology series; R. M. Elliott, editor) \$2.75.

3084

Contents: Preliminary considerations. Height and weight in relation to intellect. Cranial measurements and intelligence. Anatomical age and mental age. Morphological index, height-weight ratio, and intelligence. Physical condition and mental

efficiency. Physique and temperament. Summary and conclusions. Index of names. Index of subjects.

Note: This book studies the relation between physical and mental traits, both in children and in adults, and points out as far as possible to what extent popular beliefs regarding the physical basis of mind are upheld or denied by scientific knowledge.

ROSETT, JOSHUA

The mechanism of thought, imagery, and hallucination. New York: Columbia University Press, 1939. 289 p. illus. 26 cm. \$3.00.

3085

Contents: The law of evolution and dissolution of the nervous system. The emotional state. The relations of the emotions to the conscious, sensory, or informative state. The expression and the subjective experience of the emotions. The will. Nerve signalling. The effect of injuries on the association systems. Representation and symbolism. A definition of thought, imagery and hallucination. Hallucinations in certain injuries and diseases of the nervous system. The epileptic seizure. The state of attention. Sleep. Concluding remarks. Index.

Note: A treatise for physiologists and psychologists. The author's main thesis is that mental functions of the type mentioned in the title are predominant only when sensory reception is diminished or extinguished. The discussion is based on observed physiological fact. Most of the chapters contain a bibliography of pertinent literature.

RUCKMICK, CHRISTIAN ALBAN

The psychology of feeling and emotion. New York: McGraw-Hill Book Company, Inc., 1936. 529 p. illus. 23 cm. (McGraw-Hill publications in psychology, J. F. Dashiell, consulting editor) \$4.50.

3086

Contents: A survey of the affective life. A historical perspective. The range of the affective life. Affection or elementary feeling. The classification of emotions. The James-Lange-Sergi theory. More modern theories of feeling and emotion. A phylogenetic theory of affective life. The facial expression of emotion. Other experimental procedures of expression. The electrodermal response. The experimental procedures of impression. Qualitative descriptions of feeling and emotion. The pathology of the affective life. The role of feeling and emotion in psychoanalysis. Development of feelings and emotions in the child. Feeling and emotion in the animal mind. Feelings and emotions in the educational program. Culture and the affective life. In summary and conclusion.

Note: A systematization of outstanding theoretical and experimental contributions to the field of feeling and emotion, integrating them with a phylogenetic theory proposed by the author. After critically reviewing the materials at hand from various procedures and techniques used in research, the book stresses the application of affective factors in the school program and in everyday life.

SEASHORE, CARL EMIL

Elementary experiments in psychology. Revised and enlarged in cooperation with Robert Holmes Seashore. New York: Henry Holt and Company, Inc., 1935. 219 p. illus. 27 cm. \$1.50.

3087

Contents: General vocabulary. Aptitude. An adjustment inventory. The ethical self. Status in psychology. Visual after-images. Color-blindness. Color-mixing. Visual contrast. The visual field. Visual space. Auditory pitch and intensity. Auditory time and timbre. Auditory space. Taste and smell. Tactual space. The cutaneous senses. Weber's law. Attention. Apperception. Gestalt. Normal illusions. Mental images. Association. Guilt detection. Visual memory. Auditory memory and rhythm. Transfer of training in an eye-hand coordination. Insight versus trial and error. Reasoning. Types of imagination. Reflexes in the frog. Human reflexes. Motor speed. Steadiness and aiming. Serial action. Reaction-time. Attitude. Psychology in advertising. Public opinion. Art judgment. Self profile.

Note: The materials contained in the revised edition of this manual are based on more than twenty-five years of teaching experience. The experiments are of many different types and are adapted to large or small classes. They may be used with any introductory text and with very little laboratory equipment or a fully equipped laboratory.

SKINNER, BURRHUS FREDERIC

150
2872
The behavior of organisms; an experimental analysis. New York: D. Appleton-Century Company, Incorporated, 1938. 457 p. illus. 23 cm. (The Century psychology series, R. M. Elliott, editor) \$5.00. 3087a

Contents: A system of behavior. Scope and method. Conditioning and extinction. Periodic reconditioning. The discrimination of a stimulus. Some functions of stimuli. Temporal discrimination of the stimulus. The differentiation of a response. Drive. Drive and conditioning. The interaction of two variables. Other variables affecting reflex strength. Behavior and the nervous system. Conclusion.

Note: This book explains a new and highly productive method of investigating behavior, which makes it possible to identify and to treat experimentally a considerable number of fundamental behavior variables. It emphasizes that kind of behavior ("operant behavior") which is not elicited in response to stimulation but may be said to be "emitted" by the organism. It gives special attention to the processes of discrimination and advances a new interpretation. It develops an important concept of the reflex "reserve" and presents a fresh and simple treatment of the problem of motivation.

TINKER, MILES ALBERT, AND KENNETH H. BAKER

150
2891
Introduction to methods in experimental psychology. New York: D. Appleton-Century Company, Incorporated, 1938. 222 p. illus. 27 cm. (The Century psychology series; R. M. Elliott, editor) \$3.00. 3088

Note: This laboratory manual for the first college course in experimental psychology presents 28 experiments. In the choice of experiments, much traditional emphasis has been abandoned. Reaction time, psychophysics, and memory methods have been omitted, and the emphasis on sensory perception has been reduced. Modern trends are represented by a series of experiments in learning, the measurement of general and specific attitudes, and the measurement of personality, including the technique of vocational diagnosis. References are supplied with each experiment. The manual is designed for use in conjunction with any standard introductory text in experimental psychology.

TROLAND, LEONARD THOMPSON

150
2892
The principles of psychophysiology. A survey of modern scientific psychology. With original drawings by the author. 2 v. New York: D. Van Nostrand Company, Inc., 1929-32. illus. 22 cm. Vol. I-II, \$4.00 each. 3089

Contents (abridged): Volume I: The problems of psychology and perception. Part I, The definition of psychological knowledge: An outline of the history of psychology. The definition of psychology. The fundamental concepts of introspective psychology. The methods of introspective psychology. Part II, The nature of the psychophysical relationship: The fundamental concepts of psychophysiology. More specific relationships between experience and response. Aspects of psychophysiology as a science. Part III, Perception: The concept of perceptions. Component perceptions. Composite perceptions. Conclusion. Bibliography. Index. Volume II: Sensation. Part IV, Sensation, consciousness and the afferent arc: The concept of sensation. Visual sensation. Auditory sensation. The chemical senses. The cutaneous senses. Kinaesthetic and internal sensation. Generalizations concerning sensation. Bibliography. Index.

Note: The author's aim has been to present an exposition of the facts and principles of psychology in accordance with the analysis of the process of neuromuscular response and the correlation of consciousness with the cerebral factor in physiological operations. The author first examines the foundations of psychology as a science, then formulates a plan for treating the specific problems and methods of psychology, together with a presentation of the most important facts and theories of the science; and finally reconsiders the question of mind-body relationship from the philosophical standpoint. The theories of both the Gestalt and structural schools of psychology are given equal emphasis. There are 684 references in the bibliographies given in the two volumes. A third volume, *Cerebration and action*, is out of print. A projected fourth volume, *The ultimate theory of mind and matter* was not published.

WOODWORTH, ROBERT SESSIONS

Experimental psychology. New York: Henry Holt and Company, 1938. 889 p. illus. 24 cm. \$4.00. 3090

Contents: Introduction. Memory. Retention. Memory for form. The conditioned response. Maze learning. Practice and skill. Transfer of training. Economy and interference in learning and remembering. Feeling. Expression of the emotions. Bodily changes in emotion. The "psychogalvanic reflex" or "galvanic skin response." Reaction time. Association. Experimental esthetics. The psychophysical methods. Results in psychophysics: judgments of magnitude. The skin senses. Smell and taste. Hearing. The sense of sight. Eye movements. Perception of color. The perception of form. Visual space. Attention. Reading. Problem solving behavior. Thinking. Bibliography. Index.

Note: A study of the whole field of psychological experimentation, adapted as a text for advanced courses in experimental psychology. It summarizes specific problems—in learning, perception, thinking, emotion—the methods of attacking these problems, and the results which have been achieved. Ease of style and freedom from unnecessary technicalities make it a suitable book for undergraduates as well as graduate students.

YOUNG, PAUL THOMAS

Emotion in man and animal; its nature and relation to attitude and motive. New York: John Wiley and Sons, Inc., 1943. 422 p. illus. 23 cm. \$4.00. 3091

Contents: The nature of emotion. Attitudes and motives, determinants of emotion. Needs and appetites. Emotional development. Bodily changes in emotion. Patterns of organic response in emotional excitement. Feeling and emotion as conscious processes. Direct determinants of emotion. Predisposing conditions of emotional disturbance. Attitudes and motives in relation to emotion. General conclusion. Index of authors. Index of subjects.

Note: An important book on emotions in relation to attitudes and motives. These topics are considered in the light of recent investigations and in relation to practical human problems of development and adjustment. The material is of interest to students of child psychology, education, anthropology, physiology, social and experimental psychology, and allied fields. The book takes account of clinical material and case studies as well as the findings of the laboratory. A generous number of plates and figures illustrate the text. Bibliographies, notes, and suggestions for further study amplify the presentation.

Comparative Psychology

ALLEE, WARDER CLYDE

The social life of animals. New York: W. W. Norton and Company, Inc., 1938. 293 p. illus. 21 cm. \$3.00. 3096

Contents: Foreword. Science versus metaphysics. History and natural history. Beginnings of co-operation. Aggregations of higher animals. Group behavior. Group organization. Some human implications. Social transitions. Literature cited. Index.

Note: Based upon the author's lectures on the Norman Wait Harris Foundation at Northwestern University. The social life of animals on various levels is discussed on the basis of observations and experiments made by the author. It is his purpose to lay a basis through this discussion for a better understanding of social behavior in the human animal.

HOOTON, EARNEST ALBERT

Why men behave like apes, and vice versa; or, Body and behavior. Princeton: Princeton University Press, 1940. 234 p. illus. 22 cm. \$3.00. 3097

Contents: Introduction: Harangue on human affairs. Body and behavior: In the primate order. In the human family as a whole. In the races of man. In nations and ethnic groups. In the individual. Index.

Note: A popular discussion of what is wrong with modern man, from the anthropologist's point of view. Mr. Hooton interprets the relation between body and behavior, and speculates on the future of the human race. Based on the five Vanuxem lectures delivered at Princeton University in 1940.

KELLOGG, WINTHROP NILES, AND LUELLA (AGER) KELLOGG

The ape and the child; a study of environmental influence upon early behavior. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1933. 341 p. illus. 22 cm. \$3.00. 3098

Contents: An experiment outlined. Some basic similarities and differences. Health. Eating, and sleeping. Dexterity, arm movements, and walking. The senses. Play. Social and affectionate behavior. Emotional behavior. Learning. Memory and recognition. Intelligent behavior. Communication and language. Conclusion. References for further reading. Dates of trials of principal tests and experiments. Index.

Note: The record of a striking experiment carried out by trained scientists in rearing an ape and a child of about the same age as companions and playmates in the same household.

KLÜVER, HEINRICH

Behavior mechanisms in monkeys. With an introduction by K. S. Lashley. Chicago: The University of Chicago Press, 1933. 387 p. illus. 23 cm. (Behavior Research Fund. Monographs) \$4.00. 3099

Contents (abridged): The general problem of behavior mechanisms. Animals used in this study. Methods and general procedure. First group of experiments: Reactions to weight relata. Reactions to auditory relata. Reactions to visual relata. Reactions to sudden changes. Second group of experiments: Visual acuity. Tactile acuity. Anisotropy. Handedness. Strata functions. Instrumentation. Emotion. Chronological sequence of experiments. Discussion of results in the light of various problems. Summary. Bibliography. Index.

Note: A monograph presenting the description and the results of the author's experiments in the study of sub-human primates, particularly the analysis of their behavior. Theoretical matters have been excluded so far as possible. The study of behavior is approached from a biological point of view, although the author points out that there is difficulty in drawing a sharp line of demarcation between a biological and a sociological approach. The work deals not only in behavior mechanisms *per se* but also in behavior data which may be of use in connection with neurophysiological and related problems, since the brain of the lower primates is a simplified replica of the human brain. There are numerous tables of data and photographs, and the bibliography contains 309 references to the world literature.

MAIER, NORMAN RAYMOND FREDERICK, AND T. C. SCHNEIRLA

Principles of animal psychology. New York: McGraw-Hill Book Company, Inc., 1935. 529 p. illus. 23 cm. (McGraw-Hill publications in psychology, J. F. Dashiell, consulting editor) \$4.00. 3100

Contents (abridged): Part I, Principles discernible in the behavior of inframammalian animals: Fundamental characteristics of behavior. First problems in the behavior of multicellular animals. New and significant advances in adaptation—the worms. Basic activities in the phylum Arthropoda. Basic features of vertebrate behavior. Modifiability and the partial alteration of directly determined behavior. Part II, Prerequisites to behavior dominated by modifiability: The differential reaction to stimuli. Neural mechanisms in behavior. Part III, The nature of modification in behavior—class Mammalia: Introduction to the problem of learning. Factors determining performance in learning situations. Higher mental processes. Bibliography. Subject index. Author index.

Note: This book reinterprets and systematizes the varied behavior data of animals below man in an attempt to organize the evidence into a consistent psychological theory. In addition, the book offers an analytical discussion of certain special problems, particularly learning and its nature, in connection with the behavior of higher animals. Each chapter contains a list of suggested readings and in addition there is an extensive bibliography of books and periodical articles.

MOSS, FRED AUGUST, EDITOR

Comparative psychology. Revised edition. New York: Prentice-Hall, Inc., 1942. 404 p. illus. 23 cm. (Prentice-Hall psychology series) \$5.35. 3101

Contents: Why study animal psychology? by Edward L. Thorndike. The historical background of comparative psychology, by R. H. Waters. Maturation and "instinctive" functions, by Calvin P. Stone. Motivation, by Calvin P. Stone. The effects of drugs and internal secretions on animal behavior, by F. A. Moss. Discrimination, by Paul E. Fields. The neurology of learning, by Donald G. Marquis. The conditioned reflex, by Howard S. Liddell. Learning, by W. T. Heron. Complex learning processes, by W. T. Heron. Theoretical interpretations of learning, by Kenneth W. Spence. Individual differences, by Robert C. Tryon. Social behavior of animals, by Otto L. Tinklepaugh. Index.

Note: An introductory textbook for college courses in animal psychology, each chapter of which is written by a specialist in the field covered and summarizes the current technical literature on each subject in monograph form. There are bibliographies of between 20 and 50 references at the end of each chapter except the first. The revised edition incorporates the advances in the field of comparative psychology between 1934 and 1942 and includes two new chapters by Marquis and Spence.

MUNN, NORMAN LESLIE

An introduction to animal psychology; the behavior of the rat. Boston: Houghton Mifflin Company, 1933. 439 p. illus. 21 cm. \$4.00. 3102

Contents: Introduction. Unlearned behavior. General activity and persistence of response in the presence of obstruction. Sensory processes. The role of sensory processes in maze behavior. The learning process. The nature and theoretical basis of learning. Symbolic processes. Appendix: Selected references on other animals than the rat. Bibliography on the behavior of the rat. Index of authors. Subject index.

Note: A text and reference book which gives both an introduction to the problems and methods of animal psychology and a review of the literature on the behavior of the rat. It is the author's thesis that it is possible to write an essentially complete outline of the science of animal behavior without going beyond the available data on the rat. However, a list of references is provided on other animals for those desiring to use the book as a text in courses in comparative psychology.

TOLMAN, EDWARD CHACE

Purposive behavior in animals and men. New York: The Century Co., 1932. 463 p. illus. 23 cm. (The Century psychology series, edited by Richard M. Elliott) \$5.00. 3102a

Contents (abridged): Part I, Behaviorism—wherefore and what sort: Behavior, a molar phenomenon. Part II, The rat in the maze: Demands and means-end-readinesses. Demands for goal-objects. Expectations of goal-objects and means-objects. Discriminanda and manipulanda. Mnemonization, perception, inference—sign-Gestalt-expectations. Learning and delayed reaction. Inference—the means-end-field. Part III, Rats, cats, apes, and men: Means-end-capacities. Inventive ideation. Part IV, The psychologist in the laboratory: Speech and introspection. Sensation and images. Feeling and emotion. Part V, Motivation and learning: Appetites and aversions. Instinct, chain appetites and aversions, skills. The nature and laws of learning—the conditioned reflex doctrine—the trial and error doctrine—the doctrine of purposive behaviorism. Part VI, This system *qua* system: Summary and conclusions for psychologists and for philosophers. Glossary. Index.

Note: This volume presents a complete behavioristic psychology which is described as neither physiological nor metaphysical, and which is dependent entirely on experimental observations of animal and human behavior. Behavior is shown to be inherently purposive. Most of the experiments cited were performed in the author's own laboratory.

WARDEN, CARL JOHN, AND OTHERS

Comparative psychology; a comprehensive treatise by Carl J. Warden, Thomas N. Jenkins, and Lucien H. Warner. New York: The Ronald Press Company, 1940. 3 v. illus. 22 cm. (Psy-

chology series, A. T. Poffenberger, editor) Vol. I, \$4.50; Vol. II, \$6.00; Vol. III, \$4.50. The three volumes together, \$12.50. 3103

Contents: Volume I, Principles and methods: The development of modern comparative psychology. The natural science viewpoint in biology. The biological foundations of comparative psychology. The classification and analysis of behavior. Methods of testing receptive capacities. Methods of testing reactive capacities. Comparative morphology and physiology of organisms. Bibliography. Volume II, Plants and invertebrates: Protista, isolated cells and tissue cultures. Metaphyta. Porifera and Coelenterata. The Echinodermata. Platyhelminthes, nemathelminthes, trochelminthes, and Annelata. Mollusca. The Arthropoda. Bibliography. Volume III, Vertebrates: Pisces. Amphibia. Reptilia. Aves. Mammalia (except primates). Primates. Bibliography.

Note: A comprehensive treatise, intended as a textbook for advanced courses and as a reference work in connection with courses in comparative psychology, genetic psychology, physiological psychology, experimental psychology, the psychology of learning, and other special fields. The material has been systematically arranged to make possible a ready reference to topics of special interest as well as to the behavior of any particular group of organisms. The extensive bibliographies are complete for each chapter, and the work is thoroughly documented. The same authors have written a shorter text based on this treatise entitled *Introduction to comparative psychology*, New York: The Ronald Press, 1934, 581 p., \$4.50.

WASHBURN, MARGARET FLOY

591.5
W272 The animal mind; a text-book of comparative psychology. Fourth edition. New York: The Macmillan Company, 1936. 536 p. illus. 20 cm. \$3.50. 3104

Contents: The difficulties and methods of comparative psychology. The evidence of mind. The mind of the simplest animals. Sensory discrimination (methods of investigating it). (The chemical sense). (Hearing). (Vision). Spatially determined reactions. Space perception of things. The modification of conscious processes by individual experience. Higher mental processes. The affective factors in the animal-drives, incentives, and emotions. Some aspects of attention. References. Index of subjects. Index of names.

Note: Designed as a textbook for college courses, this volume offers a comprehensive survey of the subject, based on the literature and on the author's original research. The present edition contains added material on learning, motivation, and on recent trends in research on forms of animal behavior. The list of references is extensive.

WERNER, HEINZ

150
W992 Comparative psychology of mental development. Translated by E. B. Garside. With a foreword by Gordon W. Allport. New York: Harper & Brothers, 1940. 510 p. illus. 21 cm. \$4.00. 3105

Contents: The fields, the problems, and the methods of developmental psychology. The syncretic character of primitive organization. Diffuse forms of sensorimotor and perceptual organization. Syncretic and diffuse organization in imagery. Primitive notions of space. Primitive notions of time. The nature of syncretic action; action as bound to the concrete situation. The diffuse character of primitive action. Conception. The primary structure of thought. The fundamental ideas of magic as an expression of primitive conceptualization. Primitive worlds and spheres of reality. Primitive personality. Bibliography. Index.

Note: A revision of a book published in Germany in 1925, which was received with great interest. The author, who is now in the United States, has rewritten the volume and brought the material up to date. In it he compares the development of the child and historical evolution, and shows that the laws of mental development are universal laws.

YERKES, ROBERT MEARNES

591.5
Y94 Chimpanzees; a laboratory colony. New Haven: Yale University Press, 1943. 321 p. illus. 24 cm. \$5.00. 3106

Contents: Prologue. Servant of science. Part I, General description: From jungle to laboratory. Good tempers and bad. Social behavior. Life's cycles. Male and female. Part II, Mentality: The world of the chimpanzee. Looking toward intelligence.

Experience the teacher. Memory, foresight, and insight. Language and symbolism. Part III, Care and handling: House and home. Feeding chimpanzees. Breeding and rearing. An ounce of prevention. Epilogue. The story of an idea. References and selected bibliography. Subject-author index.

Note: Professor Yerkes organized and for many years directed the Yale Laboratories of Primate Biology at Orange Park, Florida. He experimented with the great apes in an effort to discover in their lives the springs of action that motivate living creatures, among them man himself. For some twenty-five years, both in this country and in Africa, he and his staff have conducted pioneer studies of the habits and social life of chimpanzees, devising tests for them, using them as experimental subjects, measuring and photographing them, understanding them with respect and affection. In this volume Dr. Yerkes has summed up his knowledge of the chimpanzee for both scientist and layman.

YOUNG, PAUL THOMAS

Motivation of behavior; the fundamental determinants of human and animal activity. New York: John Wiley and Sons, Inc., 1936. 562 p. illus. 23 cm. \$4.00. 3107

Contents: The problem. The energetics of activity. Animal drives. Drive and purpose. Direction and regulation. Positive and negative behavior. Psychological hedonism. Social motivation. Emotion and motivation. The dynamic interplay of motives. Questions and exercises. Index.

Note: A general psychology study going beyond beginning or introductory psychology. The author gives a great deal of space to descriptions of experiments and cases so as to present impartially the points of view of a great many schools ranging from animal psychology to psychoanalysis. He has illustrated his theories by reference to numerous experiments, both his own and those of others, and has concisely estimated the importance of their results as bearing upon his problem.

Social Psychology

BIRD, CHARLES

Social psychology. New York: D. Appleton-Century Company, Incorporated, 1940. 564 p. illus. 23 cm. (The Century psychology series, Richard M. Elliott, editor) \$4.00. 3108

Contents: Preface. Introduction. Motivation. Social incentives: I. Rewards and punishments. Social incentives: II. Competition and cooperation. The measurement of social attitudes. Applications of attitude measurement. Imitation. Suggestion, suggestibility, and stereotypes. Propaganda. The behavior of crowds. Leadership. The social significance of age. Juvenile delinquency. Psychological aspects of war. Index of authors' names. Index of subjects.

Note: A textbook for college students, written with two aims in view: to relate a large number of experimental studies to a wide range of social problems; to reveal the fundamental behavior processes underlying social adjustments. The author's purpose is not to assemble researches but rather to clarify, and if possible show the solutions for, social problems through the medium of research. Every chapter includes its own bibliography.

BOGARDUS, EMORY STEPHEN

Fundamentals of social psychology. Third edition. New York: D. Appleton-Century Company, Incorporated, 1942. 538 p. illus. 23 cm. (The Century social science series) \$3.50. 3109

Contents: Part I, Behavior and personality: Origins of behavior. Conditioned behavior. Dynamic behavior. Directive behavior. Attitudes and personality. Status and personality. Configuration of personality. Part II, Behavior and leadership: Originality. Talent and genius. Invention and discovery. Leadership traits. Autocratic leadership. Democratic leadership. Special leadership problems. Part III, Interaction and process: Interaction. Communication. Discussion. Suggestion. Fashion. Custom. Conflict. Accommodation. Assimilation and socialization. Part IV, Interaction and group life: Primary and secondary groups. Crowds and mobs. Assemblies and publics. Occupational publics. Large-scale publics. Public opinion. Group loyalty. Group morale. Social controls: types and agencies. Social controls: products

and problems. Social psychology in process. A social psychology library. Index.

Note: A textbook of social psychology suitable for college use. In this third edition the changes in the literature of social psychology between 1932 and 1941 are taken into account. These are reflected in the changes in the text and in the reading lists at the end of each chapter, and in the attention to experimental study.

BRITT, STEUART HENDERSON

Social psychology of modern life. New York: Farrar and Rinehart, Inc., 1941. 562 p. illus. 23 cm. \$3.75. 3109a

Contents: Part I, Social psychology and its methods: The social psychology of everyday life. The methods of social psychology. Part II, Biological and social foundations of behavior: Biological bases of human behavior. Social antecedents of behavior. The nature of culture. Part III, Some individual factors of social adjustment: Unlearned and learned behavior. Behavior, traits and attitudes. The social psychology of language. The psychology of irrationality. Part IV, Behavior in the presence of others: Our judgments of other persons. The influence of other persons. Group behavior. Sex, dominance, and prestige. The psychology of leadership and invention. Part V, The social psychology of institutions: Groups and institutions. The family. Education—the school. Religion—the church. Fraternities and political parties. Occupational groups. Part VI, Social conflicts: Delinquency patterns. Race differences. Prejudices against minority groups. Nationalism and war. Knowledge for what? Appendices. Index.

Note: This book is intended for students of sociology and psychology and interested laymen. It emphasizes the social psychology of modern everyday life rather than abstract theoretical problems, and introduces, on every topic, experimental and observational materials, especially those which tend to throw the most light on problems of human interrelation in the United States. The book provides three sets of study aids, including a list of study questions and suggested readings at the end of each chapter, plus four appendices which include a list of dictionaries and vocabularies; footnotes giving references to all materials cited; a list of texts on social psychology; and a list of general bibliographical sources. It is profusely illustrated with pictures showing various phases of Americana—fads, fashions, cartoons, crazes, and pictures involving problems in judgment.

BROWN, JUNIUS FLAGG

Psychology and the social order: an introduction to the dynamic study of social fields. New York: McGraw-Hill Book Company, Inc., 1936. 529 p. illus. 23 cm. (McGraw-Hill publications in psychology; J. F. Dashiell, consulting editor) \$3.50. 3110

Contents (abridged): Part I, Methodological section: Two philosophies of biology. The logic of dynamics. Social groups as fields. Some persistent problems of social psychology. Part II, Sociological section: Classification. The effects of national membership-character, church membership-character, social class membership-character, and minor-group membership-character. Historical relationships between groups as organized wholes. The effect of family and primary group membership-character. Part III, Psychological section: Personality and personality traits. The original nature of man. The field theory of personality genesis. The Freudian theory of personality genesis. Leadership. Part IV, Political science section: The state. Types of state: the liberal democracy, the fascist dictatorship, the communist dictatorship. Theories concerning the outcome of the present world crisis. Résumé. Appendices. Bibliography. Author index. Subject index.

Note: An introduction to social psychology which aims to clarify the methodological issues involved in speaking of a science of social psychology, to indicate the relationships between social psychology and the other sciences concerned with social behavior, and to present those findings of modern psychological research and theory considered basic to social science and social philosophy. The general finding of the methodological section, namely, that the field-theoretical approach is the most valid approach scientifically, dictates the plan of the rest of the work. The book is intended for the intelligent layman without previous instruction in psychology as well as for college students.

CANTRIL, HADLEY

The psychology of social movements. New York: John Wiley & Sons, Inc., 1941. 274 p. 23

cm. (Wiley books in psychology; H. L. Langfeld, advisory editor) \$3.50. 3111

Contents: Part I, Basic concepts: Mental context. Motivation in social life. The individual's pursuit of meaning. Part II, Social movements: The lynching mob. The kingdom of Father Divine. The Oxford group. The Townsend plan. The Nazi party. Index.

Note: A readable and informative volume. The author has made a penetrating analysis of the complex reasons behind the rise of social movements—their social context, the psychology of the leaders and the followers, the special appeals. Consideration is given to economic and political factors. The book appeals alike to students of social psychology and laymen.

FARIS, ELLSWORTH

The nature of human nature and other essays in social psychology. New York: McGraw-Hill Book Company, Inc., 1937. 370 p. 23 cm. (McGraw-Hill publications in sociology) \$3.50. 3112

Contents: Preface. Introduction. Part I, Group and person: The nature of human nature. The subjection aspect of culture. The primary group: essence and accident. The sect and the sectarian. Are instincts data or hypotheses? The concept of imitation. The origin of punishment. Standpoint and method of sociology illustrated by the study of punishment. Part II, Conduct and attitudes: Social attitudes. The concept of social attitudes. Attitudes and behavior. Current trends in social psychology. Borderline trends in social psychology. Of psychological elements. An estimate of Pareto. Part III, Sociology and education: The sociologist and the educator. Two educational problems. The nature and significance of the mores. The fundamental tendencies of children. Discipline in the modern family. The implications of behaviorism for character education. Part IV, Sociology and ethnology: Pre-literate peoples: proposing a new term. Ethnological light on psychological problems. The mental capacity of pre-literates. Culture and personality among the forest Bantu. Social evolution. Part V, The sociology of racial conflict: Racial attitudes and sentiments. Racial superiority. The sociology of religious strife. If I were a Jew. The natural history of race prejudice. Index.

Note: A collection of discussions originally published in various journals and books. They deal with five leading subjects in which the author was concerned in his writing and teaching, and which are indicated by the headings of the five parts of the volume. While designed primarily for students of his former students, they may be of interest to others concerned with social psychology and sociology.

FREEMAN, ELLIS

Social psychology. New York: Henry Holt and Company, 1936. 491 p. 22 cm. \$2.65. 3113

Contents (abridged): Part I, The individual basis of social phenomena. Part II, Individual and cultural determination of values. Part III, The psychology of some fundamental social values. Index.

Note: A text and reference book for advanced students of psychology and sociology. Emphasis is placed on the stereotypes of economic relationships which govern the psychology of our culture, and upon the fluctuating or dynamic cultural determinants of behavior as opposed to the relatively stable hereditary factors. There is a special detailed treatment of such topics as acquisitiveness, interest on money, industrial cooperation, and primitive anthropology. Intentionally omitted are the elementary topics of the emotions, autonomic nervous system, child development, and the like.

FROMM, ERICH

Escape from freedom. New York: Farrar and Rinehart, Inc., 1941. 305 p. 22 cm. \$2.50. 3113a

Contents: Freedom—a psychological problem? The emergence of the individual and the ambiguity of freedom. Freedom in the age of the Reformation. The two aspects of freedom for modern man. Mechanisms of escape. Psychology of nazism. Freedom and democracy. Appendix: Character and the social process. Index.

Note: This book is part of a broad study concerning the character structure of modern man and the problems of the interaction between psychological and sociological factors which the author, a psychologist, had been working on for several years but did not complete because of his belief that the current political developments and their implied dangers required that he interrupt the work and concentrate on one crucial aspect of it. The thesis

of the book is that modern man, although securing his freedom from the bonds of pre-individualistic society in a certain sense, has not gained freedom in the positive sense of the realization of his individual self. Although the author claims the book to be an analysis rather than a solution, he believes an understanding of his thesis vital to a victory over totalitarian tendencies.

GUTHRIE, EDWIN RAY

190
6288 The psychology of human conflict; the clash of motives within the individual. New York: Harper & Brothers, 1938. 408 p. 20 cm. \$2.75. 3113b

Contents: The nature of living organisms. The nature of mind. The integration of behavior. Associative learning. Associative inhibition. Habits. The emotional reinforcement of action. Motives. Desires, consciousness and unconsciousness. Interests. Concerning personalities. The description of personalities. The self and voluntary action. The origins of personality. Delusion and belief. Adjustment through the reinforcement of action. The nervous breakdown. The psychoneuroses: hysteria. Phobias. Neurasthenia, psychasthenia and anxiety states. Dreams and fantasy. Memory and fugues. The family as a source of conflict. Marital sources of conflict and neurosis. Social status and conflict. The psychology of insanity. Psychotherapy. Suggested readings. References. Index.

Note: This book is a simplified description of the ways in which men adjust themselves to circumstances. It presupposes no previous knowledge of psychology and is written in an easy style for the layman. Pierre Janet's descriptive psychology and an objective theory of learning form the core of the discussion. Suggested readings at the end are divided according to chapter content.

JONES, ALFRED WINSLOW

3360
8712 Life, liberty, and property; a story of conflict and a measurement of conflicting rights. Philadelphia: J. B. Lippincott Company, 1941. 397 p. illus. 22 cm. \$3.50. 3113c

Contents: Part I, The story of conflict: Introduction—class and property. Early Akron. The rubber industry. Present Akron. The labor movement—failure. The labor movement—success. Industrial conflict. Part II, The measurement of conflicting rights: Village storekeeper. The farmers. The magnates. Propaganda. The rubber chemists. Girls in offices. Teachers. The clergy. The "little business men." The red apples. CIO rubber workers. Attitude toward authority. W.P.A. workers. The indoctrinated. Major party politics. Summary and interpretation. Conclusion—class consciousness and property. Appendices. Index.

Note: The author of this book is concerned with the development of conflicting economic interests and the reflection of that conflict if any in the attitudes of the economic and social classes concerned. After sketching briefly the socio-economic disintegration of a primitive tribal group based on the communion of property due to internal economic differentiation, the author goes directly to the study of the city of Akron—a result of economic and social transformations analogous to those that occurred in the tribal community. The investigation was carried on and data gathered during the late months of 1938 and early months of 1939 and involved the interview of some 1700 of the town's citizens on their attitude toward corporate property, a subject upon which the author believes there is likelihood of finding sharp differences in attitudes. The history of the city of Akron is sketched, generally, in the first part of the book and the second part devoted to the presentation of the results of the interviews. The illustrative material consists mostly of charts revealing the various results of the interviews. The appendixes include the form and subject of the interview, types of occupational groups and others interviewed, and a series of statistical tables.

KARDINER, ABRAM

572
KK The individual and his society; the psychodynamics of primitive social organization. With a foreword and two ethnological reports by Ralph Linton. New York: Columbia University Press, 1939. 503 p. 23 cm. \$5.00. 3113d

Contents: Part I, Methodological: Introduction. Basic orientations. Preliminary studies in primitive culture. Security systems and basic personality structure. Part II, Descriptive: Marquesan culture, by Ralph Linton. Analysis of Marquesan culture. The Tanala of Madagascar, by Ralph Linton. Analysis of Tanala culture. Part III, Theoretical: Psychology and sociology, a

methodological review. Psychological principles and technique. Index.

Note: This book represents an exploratory attempt to forge a technique for synthesizing with psychology the knowledge accumulated by the social sciences. The author, a psychiatrist, utilizes a psychological technique grounded in Freudian principles with some modification.

KARPF, FAY BERGER

American social psychology; its origins, development, and European background. With a foreword by Ellsworth Faris. New York: McGraw-Hill Book Company, Inc., 1932. 461 p. 23 cm. (McGraw-Hill publications in sociology) \$3.50. 3113e

Contents (abridged): Introduction. Part I, European background: Nineteenth century philosophical background. The development of social-psychological thought in Germany. The development of social-psychological thought in France. The development of social-psychological thought in England. Part II, The development of social-psychological thought in the United States: Background and beginnings. Social-psychological thought as an extension of psychological and social theory. The emergence of a differentiated social psychology. The emergence of a social psychology (continued)—attempts at a systematic treatment. Summary and conclusion. Bibliography. Index.

Note: An historical guide to social psychology in America. By means of a modified biographical treatment, by copious quotation and by condensation the author has set forth the teachings of various authors. The arrangement is roughly chronological. Not written as a textbook, but useful as such. There are bibliographical footnotes and a 17-page bibliography.

KATZ, DANIEL, AND RICHARD L. SCHANCK

Social psychology. New York: John Wiley and Sons, Inc., 1938. 700 p. illus. 22 cm. \$3.75. 3114

Contents (abridged): Social psychology and everyday experience. A description of uniform ways and their psychology. The measurement of institutional ways and the J-curve hypothesis. Special forms of uniform behavior. Atypical ways. Social interaction. Social institutions. The physiological and psychological foundations of social behavior. The motivation of behavior. The mechanisms of social interaction. Social stimulus-patterns and the development of language. The nature of personality and methods in its study. Personality characteristics and the structure of personality. The development and integration of personality. The relation of personality to culture. Society and culture. The epoch of the rural community. The era of publics. The era of social classes. The individual in the modern world. Index.

Note: An introductory textbook for students of sociology and psychology. The subject is presented from the different points of view of various participants in the social scene, i.e. the man in the street, the clinician or psychiatrist, and the social engineer or planner, and unified by a continuing emphasis upon naturalistic and scientific interpretation. A section is devoted to mechanisms of action and motives based on previous experimental findings, and the final portion is devoted to historical and theoretical discussion. References at the end of each chapter.

KLINEBERG, OTTO

Social psychology. New York: Henry Holt and Company, 1940. 570 p. 22 cm. \$3.00. 3115

Contents: Part I, Introductory: Background and history. Animal social psychology. Language. Part II, Social factors in human nature: Theories of human nature. The dependable motives. Emotional behavior. Social factors in perception and memory. Part III, Differential psychology: Individual and class differences. Sex differences. Racial differences. Part IV, Social interaction: The individual in the group. Attitudes. Race prejudice. Part V, Personality: The problem of personality. The measurement of personality. Genetic and biographical approaches to personality. Culture and personality. Part VI, Social pathology: Social factors in abnormality. Social factors in delinquency and crime. Conclusion. Indexes.

Note: An introductory textbook for college students. It emphasizes the recent changes in the concepts and data of social psychology and attempts an integration between social psychology and ethnology. The author presents the subject mainly from the standpoint of the relation of the individual to his culture, and is concerned as much with the varieties of human behavior as with its constants, studied in comparative terms.

KROUT, MAURICE HAIM

301
K922
Introduction to social psychology. New York: Harper and Brothers, 1942. 823 p. illus. 22 cm. (Harper's social science series) \$4.00. 3116

Contents: Editor's introduction. Preface. Environment. Heredity. The organism. The group. Culture. Symbolism. Patterning. Survivals. Change. Conflict. Leadership. Followership. Bibliography. Subject index. Index of authors.

Note: A textbook for college students. Its aim is to enable them to understand interhuman relations to which the more delicate types of individual behavior can be traced, and to react more intelligently to social situations. To this end various topics are discussed with particular emphasis on current trends and ideologies. Questions and problems are provided at the ends of the chapters.

LAPIERE, RICHARD TRACY, AND PAUL R. FARNSWORTH

301
L3162
Social psychology. Second edition. New York: McGraw-Hill Book Company, Inc., 1942. 511 p. 23 cm. \$3.50. 3117

Contents: Part I, The nature of the individual and of society: Social psychology. The psychobiological bases of human behavior. The sociocultural bases of human behavior. Part II, The process of socialization: Types of human behavior. Overt symbolic behavior. Overt nonsymbolic behavior. Symbolic sources. The covert behaviors. Part III, The human personality: Human nature. Individuality. Personality stereotyping. Part IV, Personality and social adjustment: The dynamics of social adjustment. Social disorganization and malpreparation. Social change and maladjustment. Socially atypical patterns of adjustment. Psychologically abnormal patterns of adjustment. Part V, Social interaction: The interaction situation. Cultural leadership situations. Personal leadership situations. Distant leadership situations. Abnormal social situations. Bibliography and author's index.

Note: An elementary textbook for college courses. The central thesis is that social behavior is an outgrowth of the interaction between individuals. The present edition takes into account recent trends and advances in the field such as the steady drift in conceptualization toward "interactionalism" and the growing concern with what might be called the pathology of the relationship between the individual and contemporary society.

MAY, MARK ARTHUR

172.C
714.514
A social psychology of war and peace. New Haven: Published for the Institute of Human Relations by Yale University Press, 1943. 284 p. 23 cm. \$2.75. 3118

Contents: Preface. Acknowledgments. Why war? War, peace, and social learning. Learning to hate and to fight. Learning to fear and to escape. Learning to love and to defend. Learning to follow leaders. Aggressive social movements. Defensive social movements. Psychological conditions of peace. The present war and the future peace. Index.

Note: This book challenges the popular conception that the underlying causes of war are found in man's fighting instincts. It holds that human nature is neither belligerent nor peaceful, but neutral. The bias is in man's environment. In some types of environments he acquires attitudes, habits, and beliefs that predispose him to war; in other environments he acquires traits that are favorable to peace. War and peace are therefore the results of man's conditioning and education. The book shows in detail how men learn to fight and to hate, to fear and to escape, to love and to defend, to follow leaders and participate in social movements. It ends with a discussion of the psychological conditions of peace.

MEAD, GEORGE HERBERT

301
714.6
Mind, self & society, from the standpoint of a social behaviorist. Edited, with introduction, by Charles W. Morris. Chicago, Ill.: The University of Chicago Press, 1934. 401 p. 23 cm. \$5.00. 3119

Contents (abridged): Part I, The point of view of social behaviorism. Part II, Mind. Part III, The self. Part IV, Society. Supplementary essays: The function of imagery in conduct. The biologic individual. The self and the process of reflection. Fragments

on ethics. Bibliography of the writings of George H. Mead, chronologically arranged.

Note: A collection of papers by Mead selected from the viewpoint of adequately representing the outlines of his system of social psychology. None of the papers had been published previously.

MORENO, JACOB L.

301
m8154
Who shall survive? A new approach to the problem of human interrelations. Washington, D.C.: Nervous and Mental Disease Publishing Company, 1934. 440 p. illus. 24 cm. (Nervous and mental disease monograph series. No. 58) \$4.00. 3120

Contents (abridged): Foreword, by William A. White. Presentation of the problem: Social and organic unity of mankind. Historical background. Method and definition. Evolution of groups: Evolution of group organization. Periods of group development. Sociogenetic law. Sociometry of groups: Sociometric classification. Community organization. Social microscopy. Motivation. Spontaneity test. Conduct. Psychological currents. Construction and reconstruction of groups: Introduction. Initial assignment. Assignment therapy. Spontaneity training. Sociometric planning of society: Spontaneous evolution of society. Population test. Spontaneous and guided migration. Management of psychological currents. Experimental planning of a new community. Who shall survive? Supplements: Sociometric studies, by Helen Jennings. Notes. Glossary. Statement on the research in Hudson. Bibliography.

Note: The author assumes that many individual maladjustments reflect group maladjustments and should be dealt with by adjusting the group relationships of the individual. Tests developed to determine desirable group associates were given to children and adults in a number of educational and correctional institutions of New York State. This account of the results shows that a redistribution of population on the basis of sociometric classification would be a valuable aid in dealing with socially disorganized individuals. The bibliography consists of 41 references.

MURPHY, GARDNER, AND OTHERS

301
714.514
Experimental social psychology. An interpretation of research upon the socialization of the individual. Revised edition. By Gardner Murphy, Lois Barclay Murphy and Theodore M. Newcomb. New York: Harper and Brothers, 1937. 1121 p. illus. 22 cm. \$4.50. 3121

Contents: Part I, Introduction: The field and the methods of social psychology. Part II, Interpretation of the process of socialization: Nature and nurture in relation to social differences. The biology of motives. The learning process in social situations. Part III, A genetic study of social behavior: Methods of studying the social behavior of children. Development of social behavior in a social context. Characteristic social behavior of children in our culture. The development of social behavior in early childhood. Social behavior in later childhood and adolescence. Some adult behavior patterns in our own society. Part IV, Quantitative studies of individual differences in adult social behavior: Measurement of the adult personality. Social attitudes and their measurement. References. Bibliography. Indexes.

Note: A monograph for students of psychology and for research workers presenting a systematic interpretation of evidence from every type of research known to the authors regarding the relations of individual human beings to one another in our own culture. The emphasis is not upon group behavior as such but upon the process by which the individual becomes an adult personality in our society. Illustrated with numerous case histories and summaries of research studies in chart form. The revised edition incorporates new research material developed between 1931 and 1937 and contains new references.

THORNDIKE, EDWARD LEE

301
714.6
Human nature and the social order. New York: The Macmillan Company, 1940. 1019 p. illus. 22 cm. \$6.00. 3121a

Contents (abridged): Introduction. The ABC of human behavior. Abilities. Wants. The measurement of wants and satisfaction. The causation of abilities, wants and propensities. The causation of individual differences in achievements, wants and propensities. Conflicts of wants, conscience, and judgments about

values. Living by science. Human nature and the science of philanthropy. Economics, business and realistic ethics. Utility and disutility: Supply and demand. Natural resources and capital. Labor and management. Buying and selling: Consumption. Payments for human factors. Money and credit. Ownership. The psychology of capitalism and alternative economic systems. Political science and the other sciences of man. Human relations. The functions and criteria of a good government. Methods of ruling and doing public business. The law and human nature. The improvement of law. Human nature and reform. Appendix: An objective criterion for likeness in general nature among abilities differing in goodness. A second objective criterion for likeness in general nature among abilities differing in level. The measurement of abilities. On the fallacy of imputing the correlations found for groups to the individuals or smaller groups composing them. On theories of the organization of a person. Reference lists. Index.

Note: Facts and principles of psychology which students of sociology, economics, government, law, and the sciences of human affairs need to know are presented in this comprehensive book. The author believes that a knowledge of psychology and its application to welfare should prevent some of the errors and calamities for which the well-intentioned have been responsible. The first half of the book is directed primarily to the student, but the second half, concerned with application of psychology, is of general interest.

TOLMAN, EDWARD CHACE

Drives toward war. New York: D. Appleton-Century Company, Incorporated, 1942. 118 p. illus. 21 cm. (The Century psychology series) \$1.25. 3122

Contents: Psychologically adjusted man. The biological drives. The social techniques. Heredity, learning, and the psychological dynamisms. Drive-conversions. Psychologically adjusted man and the abolition of war.

Note: From the psychologist's viewpoint this book analyzes the biological drives of human beings in relation to the fundamental causes of war. It presents an idea of a post-war world of the future in which these basic psychological factors would be reduced to a minimum, and suggests how these aggressive propensities may be directed into constructive and socially valuable channels.

WARDEN, CARL JOHN

The emergence of human culture. New York: The Macmillan Company, 1936. 189 p. illus. 20 cm. \$2.50. 3122a

Contents: The meaning of culture: The individual and culture. Patterns of culture. The biosocial basis of culture. Culture as an emergent. Do animals possess culture? Insect societies. Bird societies. Mammal societies. The emergence of man and culture: Man's anthropoid heritage. Descent from the trees. Humanoid specializations. Emergence of the cultural order. The evolution of culture: Major cultural stages. The universal culture pattern. Secondary culture patterns. Culture and progress: The dogma of social progress. The cultural outlook. Bibliography. Index.

Note: The author's major thesis is that man is distinguished from the other anthropoids by the development and possession of a genuine and complex culture which he has not only created but which in turn has created him. Outside of the first chapter which sets forth the main arguments for the general viewpoint, the remainder of the book is dedicated to the presentation of concrete evidence calculated to prove the author's views and to demonstrate the influence of cultural changes upon human progress.

WATSON, GOODWIN, EDITOR

Civilian morale; second yearbook of the Society for the Psychological Study of Social Issues. Boston: Published for Reynal & Hitchcock by Houghton Mifflin Company, 1942. 463 p. illus. 21 cm. \$3.50. 3122b

Contents: Part I, Theory of morale: The nature of democratic morale, by Gordon W. Allport. The psychodynamic problem of democracy, by Thomas M. French. Five factors in morale, by Goodwin Watson. Time perspective and morale, by Kurt Lewin. Morale and national character, by Gregory Bateson. Part II, How morale develops: Children are important to morale, by Lois Barclay Murphy. The morale of youth groups, by Ronald Lippitt. Morale and the training of leaders, by Alex Bavelas. Propaganda

and morale, by S. S. Sargent. News and morale—a miniature experiment, by Theodore Newcomb. Part III, The state of American morale: American morale when the war began, by Donald Rugg. Student morale, by Joe and Eugenia Belden. Morale and the Jewish minority, by Otto Klineberg. Morale among Negroes, by Kenneth B. Clark. Morale in Canada, by J. D. Ketchum and J. S. A. Bois. Part IV, Morale in industry: Morale during unemployment, by Goodwin Watson. Morale on the job, by Richard L. Hull and Arthur Kolstad. Labor unions and morale, by Goodwin Watson. Part V, Recommendations: Essentials for a civilian morale program in American democracy, by Gardner Murphy. Bibliography. Index.

Note: This is an interim report on what psychologists now think about morale problems, and contains not only the findings of the research, but also the recommendations of the authors as citizens of a democracy. A bibliography divided by chapters is provided together with a 14-page index. Each chapter concludes with a summarizing section, and charts and tables are used when necessary to supplement the text.

YOUNG, KIMBALL

Social psychology. Second edition. New York: F. S. Crofts and Company, Inc., 1944. 578 p. illus. 22 cm. \$4.00. 3123

Contents: Personality, society, and culture. Part I: Some basic relations of personality to society and culture: Animal prototypes of human behavior. Culture and personality. Drives and emotions. Some factors in human learning. The foundations and mechanisms of personality. The rise of the self. The nature of social-culture reality. Stereotypes, myths, and ideologies. Dominance and leadership. Part II, Some aspects of human conflict: Prejudice as a phase of conflict. Other areas of prejudice. The psychology of revolution. The psychology of war and of military morale. Civilian morale and other problems of war. Part III, Mass behavior: Some forms of mass behavior: crowd and audience. Fashion. Public opinion. The media of opinion formation. Propaganda. Psychological warfare in international relations. Control and power. Glossary. Indexes.

Note: A college textbook which emphasizes four of the most important advances in the field of social psychology made between 1929 and 1944, namely, motivation, social interaction, the measurement of traits, opinions, and attitudes, and the linkage of social psychology with the other social sciences, especially cultural anthropology. The second edition attempts to take into account these recent developments, dealing more especially with the role and status of the individual in relation to his group-oriented life. Additions to the present edition include a chapter on the social life of lower animals, especially monkeys and apes, new material on the elements and mechanisms of the social-cultural reality, the psychology of war and wartime morale, the effect of the motion picture and the radio on public opinion, and the part played by propaganda in social control. References appear at the end of each chapter.

Psychology of Personality

ALLPORT, GORDON WILLARD

Personality; a psychological interpretation. New York: Henry Holt and Company, 1937. 588 p. illus. 24 cm. \$3.50. 3124

Contents: Part I, The approach to personality: Psychology and the study of individuality. Defining personality. A brief history of characterology. Part II, The development of personality: Foundations of personality. Basic aspects of growth. The self and its constraints. The transformation of motives. The mature personality. Part III, The structure of personality: The search for elements. The theory of identical elements. The theory of traits. The nature of traits. The unity of personality. Part IV, The analysis of personality: A survey of methods. Common traits, psychography. Analysis by ratings, tests, experiments. Expressive behavior. Part V, Understanding personality: The ability to judge people. Inference and intuition. The person in psychology. Index of subjects. Index of names.

Note: The purpose of this book is to coordinate the results of previous studies concerning personality and to provide new coordinating concepts and theories which will serve as a basis for further study. Doctrines from various schools of psychology are borrowed and adapted in an effort to cover the many sides of the subject. Results of research in the subject are presented in the text, rather than in statistical charts and graphs.

ANGYAL, ANDRAS

Foundations for a science of personality. New York: The Commonwealth Fund, 1941. 398 p. illus. 21 cm. \$2.25. 3125

Contents: The idea of a science of personality. The trend toward increased autonomy. The psychological functions. Organism and environment. Biospheric dynamics. The trend toward homonymy. Specific dynamic trends. The problem of integration. Disturbances of integration. The course of life as a Gestalt. Epitome. Index.

Note: Human nature has long been studied in its many phases, but a broad theoretical frame of reference for the integration of its manifold aspects has been wanting. Dr. Angyal has constructed such a frame for a science of personality. His dynamic conception of personality is in harmony with the modern trend in the study of the human being, but he goes beyond the principle of personality as a unitary process, and embodies the basic laws of psychological processes in a closely knit and self-consistent system. The volume is addressed to all who are concerned with the problems of personality: psychiatrists, psychologists, biologists, sociologists, anthropologists, and others.

ASSOCIATION FOR RESEARCH IN NERVOUS AND MENTAL DISEASE

The biology of the individual; an investigation of the most recent advances; the proceedings of the Association, New York, December 28th and 29th, 1933. Editorial board: J. Ramsay Hunt, M.D., Thomas K. Davis, M.D., and Angus M. Frantz, M.D. With 49 illustrations and 21 tables. Baltimore: The Williams & Wilkins Company, 1934. 323 p. illus. 23 cm. \$6.00. 3126

Contents: Historical notes on constitution and individuality, by Smith Ely Jelliffe. Body-build and its inheritance, by Charles B. Davenport. Morphological form and its relation to reflex action and behavior, by William T. James. Progress of physical maturity and mental expansion in childhood, by T. Wingate Todd. Ontogenetic patterning of infant behavior. A psycho-morphological approach to the problem of constitution and type, by Arnold Gesell. Constitution and internal medicine, by Lewellys F. Barker. Endocrine aspects of constitution, by Walter Kempe. Biochemical aspects of constitution, by Max A. Goldzieher. Constitutional aspects of personality types. With special consideration of the cycloid and schizoid, by Eugen Kahn. The eidetic type, by Heinrich Müller. Personality and the psychoses, by C. Macfie Campbell. A study of the pre-psychotic personality in certain psychoses, by Karl M. Bowman. The schizophrenic personality with special regard to psychologic and organic concomitants, by R. G. Hoskins and E. Morton Jelinek. Individuals and their human environment, by Floyd H. Allport. Crime and the individual, by William Healy. Personality in the light of psychoanalysis, by Paul Schilder. The personality concept in relation to graphology and the Rorschach test, by Oskar Diethelm. Constitutional factors in psychosexual development. A comparative study of the heterosexual, homosexual and narcissistic types of adjustment, by George W. Henry. Index.

Note: Volume xiv of the *Research publications* of this Association. It represents an attempt to evaluate the various factors which enter into the formation of the concept of totality recognized by such expressions as individuality and personality. Of interest to neurologists, psychiatrists, and the medical profession in general. Bibliographies given with some chapters.

CAMPBELL, CHARLES MACFIE

Human personality and the environment. New York: The Macmillan Company, 1934. 252 p. illus. 22 cm. \$3.25. 3127

Contents: The relation of the personality to the physico-chemical environment. The personality and the component structures of the organism. The development of the personality. The personality. Its dynamic systems and their integration. The personality and some of its tasks. The personality and the total situation. Index.

Note: This book presents the substance of six lectures delivered before a lay audience at Lowell Institute, Boston, in February, 1933. The lectures attempt to give a more vivid and precise meaning to the word *personality*, and to stimulate the interest of the layman in the driving forces of individual life. The presenta-

tion is intended to be as concrete as possible, with specific examples of the individual in action taken from the lives of well-known figures of history. The material is based on the existing literature of the field, references to which are given in footnotes.

HEALY, WILLIAM

Personality in formation and action. New York: W. W. Norton & Company, Inc., 1938. 204 p. 21 cm. (Thomas W. Salmon memorial lectures, New York Academy of Medicine) \$2.50. 3130

Contents: Foreword. The materials of personality formation. The developing and emerging personality. Personality in widening relationships. Implications for the future. References. Index.

Note: Surveys the formative processes, the biological and social influences, that are at work to construct the personality. Deals with the bearing of personality development on education, industrial relations, political leadership, and national cultures.

HUNT, JOSEPH McVICKER, EDITOR

Personality and the behavior disorders, a handbook based on experimental and clinical research. New York: The Ronald Press Company, 1944. 2 v. illus. 24 cm. \$10.00. 3131

Contents: Volume I. Part I, Theoretical approaches to personality: The structure of personality, by Donald W. MacKinnon. Personality in terms of associative learning, by Edwin R. Guthrie. Dynamic theory of personality, by O. H. Mowrer and Clyde Kluckhohn. Part II, Cross-sectional methods of assessing personality: Subjective evaluations of personality, by Edward S. Jones. Personality tests, by J. B. Maller. Interpretation of imaginative productions, by Robert W. White. Part III, Behavior dynamics, experimental behavior disorders, and hypnosis: Clinical approach to the dynamics of behavior, by Thomas M. French. Physiological effects of emotional tension, by Leon J. Saul. Experimental analysis of psychoanalytic phenomena, by Robert R. Sears. Level of aspiration, by Kurt Lewin and others. An outline of frustration theory, by Saul Rosenzweig. Conditioned reflex method and experimental neurosis, by H. S. Liddell. Experimental behavior disorders in the rat, by Frank W. Finger. Experimental studies of conflict, by Neal E. Miller. Hypnotism, by Arthur Jenness. Part IV, Determinants of personality—biological and organic: Heredity, by L. S. Penrose. Constitutional factors in personality, by William H. Sheldon. Personality as affected by lesions of the brain, by Stanley Cobb. Physiological factors in behavior, by Nathan W. Shock. Volume II. Part V, Determinants of personality—experiential and sociological: Infantile experience in relation to personality development, by Margaret A. Ribble. Childhood experience in relation to personality development, by Lois Barclay Murphy. Adolescent experience in relation to personality and behavior, by Phyllis Blanchard. Cultural determinants of personality, by Gregory Bateson. Ecological factors in human behavior, by Robert E. L. Faris. Part VI, Some outstanding patterns of behavior disorder: Behavior disorders in childhood, by Leo Kanner. Delinquent and criminal personalities, by Lawson G. Lowrey. Unfit personalities in the military services, by A. Warren Stearns. The psychoneuroses, by William Malamud. The functional psychoses, by Norman Cameron. The concept of psychopathic personality, by Paul William Preu. Seizure states, by William G. Lennox. Part VII, Some investigated correlates of behavior disorder: Psychological deficit, by J. McV. Hunt and Charles N. Cofer. Electroencephalography, by Donald B. Lindsay. Part VIII, Therapy and the prevention of behavior disorders: Psychiatric therapy, by Kenneth E. Appel. The prevention of personality disorders, by George S. Stevenson. Author index. Subject index.

Note: The aim of this compilation is to present the major portion of theory, investigative fact, and clinical practice from various life sciences that bear on the study of personality. The forty contributors represent the fields of psychology, sociology, anthropology, education, physiology, and other sciences. Behavior disorders are analyzed in detail, while primary emphasis is placed on the whole organism or person. Extensive bibliographies follow each chapter.

LEWIN, KURT

A dynamic theory of personality; selected papers. Translated by Donald K. Adams and Karl E. Zener. New York: McGraw-Hill Book Company, Inc., 1935. 286 p. illus. 23 cm. (Mc-

Graw-Hill publications in psychology) \$3.00.
3131a

Contents: The conflict between Aristotelian and Galileian modes of thought in contemporary psychology. On the structure of the mind. Environmental forces in child behavior and development. The psychological situations of reward and punishment. Education for reality. Substitute activity and substitute value. A dynamic theory of the feeble-minded. Survey of the experimental investigations. Index of names. Index of subjects.

Note: A collection of originally independent articles written at different times, but demonstrating the author's experimental approach to the problems of will, emotion, and character. The selection was made in order to give a picture of the author's investigations in these fields and their connections with various applied fields, especially child psychology, pedagogy, psychopathology, characterology, and social psychology. Bibliographical references are given in footnotes. The final chapter gives a synopsis of the author's experimental investigations which is designed to orient those interested in a closer acquaintance with his work.

McNEMAR, QUINN, AND MAUD A. MERRILL,
EDITORS

Studies in personality, contributed in honor of Lewis M. Terman. New York: McGraw-Hill Book Company, Inc., 1942. 333 p. illus. 23 cm. (McGraw-Hill publications in psychology) \$3.50. 3131b

Contents: Introduction, by R. S. Woodworth. An experimental study of the resolution of conflict by children: time elapsing and amount of vicarious trial-and-error behavior occurring, by R. G. Barker. A study of identical twins reared apart under differing types of family relationships, by Barbara S. Burks. The appraisal interview: a critical consideration of its theory and practice with particular reference to the selection of public personnel, by Franklin Fearing. The use of free association in the objective measurement of personality, by Florence L. Goodenough. Responses by rhesus monkeys to stimuli having multiple sign-values, by H. F. Harlow. The relation of physiological and social indices of activity level, by L. P. Herrington. Personality as related to source and adequacy of sex instruction, by E. L. Kelly. Psychological belief, by J. L. Kennedy. Mechanisms of hallucinations, by Heinrich Müller. Psychological study of a young male pseudohermaphrodite reared as a female, by Catharine C. Miles. A technique for detecting attempts to fake performances on the self-inventory type of personality tests, by F. L. Ruch. Success and failure: a study of motility, by R. R. Sears. The place of individual differences in experimentation, by Eugene Shen. Individual and sex differences in speed of saccadic eye movements, by M. A. Tinker. A note on personality factors affecting the rehabilitation of problem families, by R. R. Willoughby. Variations in personality manifestations in Mormon polygynous families, by Kimball Young. Bibliography of Professor Terman's writings, prepared by Gretchen A. Magaret and Clare Wright.

Note: Presents notable research contributions on various aspects of personality by outstanding students of Professor Lewis M. Terman, prepared for the occasion of his sixty-fifth birthday.

132
MENNINGER, KARL AUGUSTUS

Love against hate, with the collaboration of Jeanette Lyle Menninger. New York: Harcourt, Brace and Company, 1942. 311 p. 22 cm. \$3.50. 3131c

Contents: This medicine, love. The frustrations of the child. The frustrations of women. The depreciation of femininity. Breaking the vicious circle. Work. Play. Faith. Hope. Love. Source notes. Index.

Note: A psychologist's attempt to analyze the fundamental causes of conflict and hate among individuals and groups, written both for the student and for the layman. Based on Freud's analysis of the ways in which hate becomes fused with love and threatens to overcome it, the book is a statement of the practical problem of how we can encourage love and diminish hate, how to favor the life instinct over the death instinct, how we can cultivate the power which draws human beings together and eliminate the hate which manifests itself in wasteful and suicidal wars. The author prefaces his main thesis with a study of the emotions from their earliest expression in the child to their final pattern of display, and demonstrates his belief that the forces of hate can be conquered by giving general application to the clinical experience of the psychiatrist.

MENNINGER, KARL AUGUSTUS

Man against himself. New York: Harcourt, Brace & Company, 1938. 485 p. 22 cm. \$3.75. 3131d

Contents: Part I. Destruction: Eros and Thanatos. Part II. Suicide: The taboo. The motives. Recapitulation. Part III. Chronic suicide: Asceticism and martyrdom. Neurotic invalidism. Alcohol addiction. Anti-social behavior. Psychosis. Part IV. Focal suicide: Definitions. Self-mutilations. Malingering. Polysurgery. Purposive accidents. Impotence and frigidity. Part V. Organic suicide: The totality concept in medicine. The psychological factor in organic disease. The choice of the lesser evil. Part VI. Reconstruction: Clinical techniques. Social techniques. Index.

Note: A clinical study of self-destructiveness through the observations of leading scientists. Written for laymen and scientists, this book demonstrates the self-destructive factors within the personality and illustrates with case histories. There are bibliographical footnotes, chapter-end summaries and an index.

MURPHY, GARDNER, AND FRIEDRICH JENSEN

Approaches to personality; some contemporary conceptions used in psychology and psychiatry, with a supplement by Dr. John Levy. New York: Coward-McCann, Inc., 1932. 427 p. illus. 22 cm. \$4.00. 3132

Contents: I. Gestalt and type: Personality and mental elements. The behaviorist's approach. II. The psychology of Freud, Jung, and Adler: Psychoanalysis (Sigmund Freud). Analytical psychology (C. G. Jung). Individual psychology (Alfred Adler). III. The child guidance approach to the study of personality (Dr. Levy). IV. Eclecticism and genetic method. Notes. Bibliography. Index.

Note: An interpretation of the schools of thought led by Freud, Jung, and Adler. Dr. Jensen illustrates their principles in the study of personality by reference to the problems of individuals. The study of normal personalities has yielded a rich store of psychological information, also. Dr. Murphy explains the relationship of Gestalt, behavioristic, and association psychology to the problems of personality. The roles of heredity and environment are studied at length for their contribution to individual differences. The quantitative studies of personality so characteristic of recent American psychology are explained. Dr. John Levy describes the work of the child guidance movement and its significance for personality study.

MURRAY, HENRY ALEXANDER, AND OTHERS

Explorations in personality. A clinical and experimental study of fifty men of college age. By the workers at the Harvard Psychological Clinic. New York: Oxford University Press, 1938. 761 p. illus. 24 cm. \$8.50. 3132a

Contents: Preface. Introduction. Proposals for a theory of personality. Variables of personality. Judgments of personality. The genetical investigation of personality: childhood events. Procedures: Conference. Autobiography. Family relations and childhood memories. Sexual development. Present dilemmas. Conversations. Predictions and sentiments test. Questionnaires. Abilities test. Aesthetic appreciation test. Hypnotic test. Level of aspiration test. The experimental study of repression; memory for failures test. Violation of prohibitions; ethical standards test. Observations and post-experimental interviews. Sensorimotor learning test. Emotional conditioning test. Galvanic skin response. Tremor responses. Thematic apperception test. Imaginal productivity tests. Musical reverie test. Dramatic productions test. Rorschach test. Miscellaneous procedures. Reactions to frustration. Social interaction. Case history: case of Earnst. Conclusions. Glossary. Index.

Note: The point of view adopted in this book is that personalities constitute the subject matter of psychology, the life history of a single man being a unit with which psychology has to deal. The intentions of the authors were (1) to construct methodically a theory of personality; (2) to devise techniques for getting at some of the more important attributes of personality; and (3) by a study of the lives of many individuals to discover basic facts of personality. In order to make the book an integrated whole rather than a collection of articles on special topics, its authors adopted the following procedure: to have all experimenters study the same series of individuals with the same concepts actively in mind, and then in assembly—a meeting being

devoted to each case—to report their findings and collaborate in accomplishing a common purpose: the formulation of the personality of every subject.

NEWCOMB, THEODORE MEAD

301
N43
Personality & social change; attitude formation in a student community. New York: The Dryden Press, 1943. 225 p. 21 cm. \$2.50. 3132b

Contents: Part I, The setting: The problem and its setting. Obtaining the data. Part II, The quantitative data: The attitude scales—their nature and content. Attitude norms. The nature and significance of attitude change. Values and interests. The college community as a frame of reference. Personal status. Community reputation. Former students and graduates. Part III, Individual studies: Nature and selection of data. Some selected individual studies. Some personality patterns related to modes of community adaptation. Part IV, Summary and interpretation: Résumé of quantitative findings. Résumé of individual studies. Personality pattern and community role. Personality and social change. Appendixes: Concerning the questionnaires used in the study. The validation of the scales. The reliability of the attitude scales. Concerning the selection of respondents. Reliability of group differences in mean attitude scores. Dispersions of attitude scores. Attitude inter-relationships. Item responses to per cent estimates questionnaires. Supplementary data on personal status at Bennington, Williams and Skidmore. Index.

Note: This study presents data on the social changes in the decade of the 1930's and their effects on the students of Bennington College. The problem investigated is this: "What kinds of personal characteristics, in any student community, determine those social relationships which in turn lead to varying reactions to proposed social changes?" Questionnaires, written reports, and individual interviews provided the data. Description of the questionnaire used and tables of findings comprise the various appendixes.

PLANT, JAMES STUART

137
p60
Personality and the cultural pattern. New York: The Commonwealth Fund, 1937. 432 p. 23 cm. \$2.50. 3133

Contents: A new approach to the understanding of the personality. Changing concepts of the personality. The Personality-culture balance. A method of study: the casual breakdown. Examples of the interaction of the personality and the environment, drawn from studies of the casual breakdown. The structure of the personality. Some concepts of classical psychiatry in relation to the pressures of the environment. Results of the conflict between personality needs and environmental pressures. The personality and the family pattern. The personality and an urban area. Towards an individual-centered culture. The road to an individual-centered culture. The family. The school. Recreation. Law and order. Social work. Medicine. The church. Industry. Education for change. Index.

Note: This book expresses the views of a well-known psychiatrist who has devoted much thought to the interrelation of the personality and the cultural pattern, with especial attention to the problems raised by the rapid changes in the cultural pattern and the prospect of even more fundamental changes in the future. The author makes valuable contributions to both psychiatry and sociology in studying the influence of the environment upon the personality and considering the social organization from the standpoint of the individual. The work is grounded in his experience in the Essex County Juvenile Clinic of Newark, New Jersey, supplemented by extensive study in the fields of psychiatry and sociology.

SPENCER, DOUGLAS

137.8
347
Fulcrum of conflict; a new approach to personality measurement. Yonkers-on-Hudson, N.Y.: World Book Company, 1938. 307 p. 20 cm. \$2.52. 3135

Contents: Present status of personality measurement. Difficulties of personality measurement in contrast with intelligence testing. Setting the problem. The hypothesis. Personality conflict. The fulcrum of conflict. Construction of the experience appraisal. Experimental administration of the instrument. Evidences of validity. Evidences of reliability. The frankness of subjects on personality measures. Establishment of the hypothesis. Preliminary item analysis. Summary and conclusions. Appendixes. Bibliography.

Note: This monograph presents a study of certain aspects of the methodology of personality-test construction, investigates a

new hypothesis relevant to such research, and attempts an initial step toward a contribution to the techniques of personality measurement. A secondary purpose of the work is an exploratory study of personality conflict at the high-school level, approached by the method of quantitative measurement. There are a large number of case histories summarized from the relevant literature of the field and from the author's clinical experience. The appendix contains a complete copy of the author's experimental form of experience appraisal, together with a statistical summary of responses received in tests.

STAGNER, ROSS

Psychology of personality. New York: McGraw-Hill Book Company, Inc., 1937. 465 p. illus. 23 cm. (McGraw-Hill publications in psychology; J. F. Dashiell, consulting editor) \$3.50. 3136

Contents: Section One, Introduction: Introduction. Methodology—the analytic approaches. Methodology—study of the total personality. Section Two, Descriptive psychology of personality: Nature of personality structure. Basic reactions—feelings and emotions. Personality acquisition—simpler forms of learning. Personality acquisition—complex forms of learning. Implicit traits of personality. Character. Attitudes and values. Overt level of personality structure. Type theories of personality. Section Three, Dynamics of personality: Appetites and aversions. Theories of dynamics—Freud, Adler, Lewin. A cultural interpretation of motivation. Section Four, Determinants of personality: Biological determinants of personality. Social determinants—the family (I). Social determinants—the family (II). Play and recreation relationships. Personality and the school system. Economic conditions affecting personality. Personality and patterns of culture, by Dr. A. H. Maslow. The personality and social values. Bibliography. Index.

Note: Presents a thorough, natural-science approach to the psychology of personality and shows that the characteristics of personality can be explained in terms of the familiar concepts of general psychology. Emphasis is upon normal personality rather than the mildly or extremely abnormal case.

SYMONDS, PERCIVAL MALLON

137.8
Sy6d
Diagnosing personality and conduct. New York: D. Appleton-Century Company, Incorporated, 1931. 602 p. illus. 23 cm. (The Century psychology series) \$4.00. 3137

Contents: Introduction: Significance of the diagnosis of conduct. Observation. Rating methods. The questionnaire. Adjustment questionnaires. Attitude questionnaires. Interest questionnaires. Tests of conduct, knowledge and judgment. Performance tests. The free association method. Physiological measures of the emotions. Interviewing. Psychoanalysis. External signs of conduct. Measures of the environment. The case study: a comprehensive study of the individual. Bibliography. Index.

Note: This book describes the various devices and techniques found to be of practical value in studying the personality of an individual and evaluating his behavior. The book contains chapters on observation, rating, and interviewing.

TERMAN, LEWIS MADISON, AND OTHERS

Sex and personality; studies in masculinity and femininity, by Lewis M. Terman and Catharine Cox Miles, assisted by Jack W. Dunlap, Harold K. Edgerton [and others]. New York: McGraw-Hill Book Company, Inc., 1936. 600 p. illus. 23 cm. \$4.50. 3138

Contents (abridged): Rationale of the masculinity-femininity test. Origin of the M-F test. Extension of the M-F test to new techniques. Correlations of M-F score with physical measurements and trait ratings. Relation of M-F score to age, education, and intelligence. Effect of interests on M-F score. A study of male homosexuals. Case-studies—masculine and feminine types of delinquent girls. Sex temperaments as revealed by the M-F test. Appendixes. Index.

Note: A volume of studies made possible by grants from the Committee on Research on Problems of Sex of the National Research Council. The results of a ten-year investigation of sex differences in interests, attitudes, and thought trends are presented. The investigation was based on a test of mental masculin-

ity and femininity administered to several thousand subjects (the M-F test). The sex temperaments are described and the factors which shape them are given extended treatment.

WOLFF, WERNER

Par The expression of personality; experimental depth psychology. New York: Harper & Brothers, 1943. 334 p. illus. 22 cm. \$3.50. 3139

Contents: Conditions in experiments on personality. Bodily expression and personality. Voice and personality. Recognition of one's own personality. Judgment of self. Gait and other expressive movements. Fact and wish. Self-evaluation and psychological dynamics. Duality in personality. Experiments on personality in hypnosis and mental disease. Emotional factors in memory. Tabu words in the private vocabulary. Association and personality. Experimental diagnosis of personality. Indirect verbal methods of assessing intra-personal tendencies. The vocabulary for personality. Bibliography. Index.

Note: This book is a contribution to experimental studies of personality dynamics, especially as they relate to unconscious forces which are made manifest only through recourse to subtle and ingenious methods. It is a report of the author's experiments in personality, conducted since 1925 at European and American institutions, and attempting to establish a scientific basis from which the "expression of personality" could be investigated experimentally in expressive behavior and expressive movements. The volume includes studies of the reflection of personality in bodily expression, voice, and gait, and an analysis of self-judgment, self-recognition, and self-evaluation. Emotional factors in memory are discussed, and pathological aspects of personality considered. The experimental diagnosis of personality is discussed at some length.

YOUNG, KIMBALL

137 *4882* Personality and problems of adjustment. New York: F. S. Crofts & Co., 1940. 868 p. illus. 23 cm. \$4.25. 3140

Contents: Constitutional foundations of behavior, neural and glandular. Constitutional foundations: the interplay of heredity and environment. Drives, cycles of activity, and emotions. Some aspects of social learning. Mental life and interaction. Groups and culture: the framework of personality development. The language development of the individual. The rise of the self in interaction. Language, thought, and the self. Methods of studying the personality. Theories of personality. Types of personality. The induction of the child into the family. Other aspects of fundamental training. Some problems of adolescence and maturation. Pupil adjustment to the learning process in school. Teacher-pupil and teacher-community relations. Mental hygiene for college students. Adjustment in marriage. The dissolution of the family. Adjustment problems of the modern woman. The relation of occupation to personality adjustment. The personality of the juvenile delinquent. The personality of the adult criminal. Adjustments associated with constitutional deficiencies. Neurotic and psychotic manifestations of personality. The neurotic and psychotic in our society. Integration and balance through religion, art, and avocation. Personality, society, and culture. Bibliography and index of names. Index of subjects.

Note: For advanced students of the psychology of personality and of mental hygiene, personal guidance, and social work. The material was drawn from the fields of physiology, genetic psychology, cultural anthropology, mental hygiene, and abnormal psychology.

Child Study

ACKERSON, LUTON

136.76 *4222* Children's behavior problems; a statistical study based upon 5000 children examined consecutively at the Illinois Institute for Juvenile Research. Chicago: The University of Chicago Press, 1931-42. 2 v. illus. 23 cm. (Behavior Research Fund. Monographs) Vol. I, \$4.00; Vol. II, \$5.00. 3147

Contents (abridged): Volume I, Incidence, genetic and intellectual factors: Introductory—the data, case study. The indexing of behavior difficulties and reasons for referring: comparative frequencies; sex and race differences. The relationship of chil-

dren's behavior problems to age and intelligence: general tendencies; the possibility of prediction; an interpretation of the influence of age and intelligence on children's behavior problems. Index. Volume II, Relative importance and interrelations among traits: Introductory. The relative importance among traits: the personality-total criterion; the conduct-total criterion; the police-arrest criterion. Interrelations among traits: chronological age and intelligence; sensitiveness and worrisomeness; bashfulness and apprehensiveness; destructiveness; stuttering or stammering. Index.

Note: This work is of interest to physicians, sociologists, social workers, and psychologists. The author endeavors to discover the manner in which some 125 behavior problems are intercorrelated with one another. To accomplish this, he studies the case histories of 5000 children examined at the Illinois Institute for Juvenile Research, with attention to differences in personality and conduct difficulties between boys and girls, and whites and Negroes.

BAKER, HARRY JAY

Introduction to exceptional children. New York: The Macmillan Company, 1944. 496 p. illus. 22 cm. \$3.50. 3148

Contents: Introduction to the field: Problems in general education. Problems of exceptional children. The physically handicapped: The partially seeing. The blind. Defective hearing. The hard-of-hearing. The deaf. Defective speech. Orthopedic handicaps. Disorders of physical growth. Lowered vitality. Miscellaneous physical conditions. Mental growth and development: The nature of intelligence. The slow-learning. The mentally subnormal and the feeble-minded. The rapid-learning. The mentally gifted. Neurological and psychogenic diseases. Epilepsy. Psychotic conditions. Miscellaneous neurological conditions. Behavior adjustments: Types of behavior. The mechanism of behavior. Behavior causes and methods of diagnosis. Remedial and preventative measures. Miscellaneous social conditions. Educational retardation. General problems, summary and conclusions: General scope of the problem. Desirable attitudes toward the exceptional. Appendix. Index.

Note: This book is intended primarily as a text for use in an introductory course on exceptional and handicapped children but the material in the book is of interest to persons interested in the education of the exceptional child—teachers, students, educational administrators and supervisors, and citizens generally.

BAKER, HARRY JAY, AND VIRGINIA TRAPHAGEN

The diagnosis and treatment of behavior-problem children. New York: The Macmillan Company, 1935. 393 p. 20 cm. (Experimental education series, edited by M. V. and H. E. O'Shea) \$3.50. 3149

Contents: Preface. Introduction. List of diagnostic items. List of tables. Introduction and historical background: Significance and incidence. History of treatment and contributions to theories. The Detroit behavior scale—its administration and evaluation: The Detroit scale for the diagnosis of behavior problems. Administration of the Detroit behavior scale. Detailed items of diagnosis. Interpretation of the sixty-six factors: Health and physical factors. Personal habits and recreational factors. Personality and social factors. Parental and physical factors of the home. Home atmosphere and school factors. Case studies, statistical evaluations, and conclusions: Illustrative case studies. The validation of the behavior scale. Intercorrelations between behavior causes. General considerations and conclusions. General references. Index.

Note: With due appreciation for the difficulties and limitations inherent in measuring accurately behavior motivation, this volume presents a careful, documented study of the proper diagnosis and correction of behavior-problem children, the quiet and timid as well as the overt and disagreeable. The Detroit scale of behavior factors is fully discussed.

BAKWIN, RUTH MAE MORRIS, AND HARRY BAKWIN

Psychologic care during infancy and childhood. New York: D. Appleton-Century Company, Incorporated, 1942. 317 p. illus. 25 cm. \$3.50. 3150

Contents: Basic principles. Etiology. History taking. The examination. Diagnostic methods. Treatment. The emotions. The mentality. Superior intelligence. Special talents. Inferior intelligence. Special types of mental deficiency. Lateral dominance.

Left-handedness. The language functions—speech. The language functions—reading, writing, spelling. Play. Training. Discipline. Parental attitudes. The siblings. The school. Adolescence. Undesirable habits. Eating difficulties. Difficulties of defecation. Enuresis. Disturbances of sleep. Sexual disturbances. Antisocial behavior. Disturbances associated with the physical status. Psychologic care during infancy. Hospital care. General bibliography. Author index. Subject index.

Note: Written by two pediatricians, this book is primarily intended as a practical guide for those who have to do with children in the home. Also, it is designed to interest and instruct physicians, public health nurses and social workers in the promotion of optimal psychologic health in the child. The subject is presented from the developmental standpoint, and the integration of physical and psychic processes is stressed. The book is about equally divided between what may be called normal maturation processes and undesirable habits or behavior difficulties. The practical common sense viewpoint is stressed throughout. The authors are optimistic and believe that with favorable treatment most psychologic injury to the child can be corrected. A carefully selected bibliography is appended to each chapter for those who desire more intensive discussion of particular problems. There is, in addition, a less extensive general bibliography for parents.

BARKER, ROGER GARLOCK, AND OTHERS, EDITORS

Child behavior and development, a course of representative studies, edited by Roger G. Barker, Jacob S. Kounin [and] Herbert F. Wright. New York: McGraw-Hill Book Company, Inc., 1943. 652 p. illus. 23 cm. (McGraw-Hill publications in psychology; J. F. Dashiell, consulting editor) \$4.00. 3151

Contents: Research in child psychology: history and prospect, by Lawrence K. Frank. Reflex activities in the human fetus, by Davenport Hooker. The activities of newborn infants, by Orvis C. Irwin. The development of prehension in infants, by H. M. Halverson. Conditioned responses in human infants, by M. A. Wenger. Mental growth during the first three years, by Nancy Bayley. Language development in the preschool child, by Dorothea McCarthy. The development of children's concepts of causal relations, by Jean Marquis Deutsche. Growth in intellectual ability, by Frank N. Freeman and Charles D. Flory. The Stanford Binet scales for measuring intelligence, by Lewis M. Terman and Maud A. Merrill. Intellectual development and rigidity, by Jacob S. Kounin. Growth of the child as a whole, by Willard C. Olson and Bryon O. Hughes. Learning and maturation in identical infant twins, by Arnold Gesell and Helen Thompson. The effects of preschool attendance upon intellectual development, by Beth L. Wellman. Foster-family resemblances in intelligence, by Barbara S. Burks. Intellectual growth of children in foster homes, by Marie Skodak. Mental and physical traits of a thousand gifted children, by Lewis M. Terman. Study of personality development, by Jean Walker Macfarlane. Studies of children's fears, by Arthur T. Jersild. Social behavior and child personality, by Lois Barclay Murphy. Play and substitute satisfaction, by Sybille Escalona. The effect of barriers upon strength of motivation, by Herbert F. Wright. Experiments in sibling rivalry, by David M. Levy. Clinical studies in childhood play, by Erik Homburger Erikson. The behavior of young children in failure, by Mary Elizabeth Keister. Frustration and regression, by Roger G. Barker, Tamara Dembo, and Kurt Lewin. Domination and socially integrative behavior, by Harold H. Anderson. The "social climate" of children's groups, by Ronald Lippitt and Ralph K. White. Social behavior of preschool children, by Mildred Parten and S. M. Newhall. A sociometric study of emotional and social expansiveness, by Helen H. Jennings. Evaluations of adolescent personality by adolescents, by Caroline McCann Tryon. Personality patterns in school children, by R. Nevitt Sanford. Development in adolescence: a case study, by Harold E. Jones. Child training and social class, by Allison Davis. The Hopi child, by Wayne Dennis. Index.

Note: Each of the papers in this volume, intended for college students, is an account of the procedures, results, and conclusions of a particular investigation. Bibliographies accompany the papers.

BAYLEY, NANCY

Mental growth during the first three years; a developmental study of sixty-one children by repeated tests; from the Institute of Child Welfare, University of California, Worcester, Mass.

Clark University, 1933. 92 p. illus. 25 cm. (Genetic psychology monographs. Vol. 14, no. 1, July 1933) Paper, \$2.00. 3151a

Contents (abridged): Introduction. Data collection. Results. Comparisons with other investigators, and conclusions. Summary. References. Résumé en français. Referat auf Deutsch.

Note: This study of childhood mental growth aims to answer such questions as: What infant behavior may we call "mental"? What specific behavior precedes later mental achievements? To what extent are these later achievements dependent on the earlier? Can we predict later development from early behavior? Tables and diagrams accompany the text.

BENTLEY, JOHN EDWARD

Superior children, their physiological, psychological and social development. New York: W. W. Norton & Company, Inc., 1937. 331 p. 21 cm. \$3.25. 3152

Contents: Preface. Introduction. The superior child. Aims and objectives in the education of superior children. The physical, mental, social, and moral qualities of superior children. The psychological theory of gifted children. Special abilities and talents. Precocity. The gifted girl. The diagnosis and discovery of superior children. Educational provisions for the instruction of superior children. The teacher of superior children. The problem of discipline and social adjustment. Educational usages, past and present. The childhood and youth of six great men. Leadership through the adequate education of superior children. Genius. Appendices. Glossary. Index.

Note: The book shows how gifted children may be discovered and how their education may be shaped in accordance with their exceptional capacities. The social characteristics of superior children are also studied to emphasize the need for social contributions in harmony with their endowments.

BLATZ, WILLIAM EMET

The five sisters; a study of child psychology. New York: William Morrow and Company, 1938. 209 p. illus. 21 cm. \$2.50. 3153

Contents: A unique problem. Who's who. The habit of culture. The discipline of freedom. Clouds and sunshine. No two alike. Looking forward. Index.

Note: An illustrated, non-technical account of the pre-school education and general childhood development of the Dionne quintuplets during the first five years. Brief accounts of emotional responses, group play reactions, school program, and sample daily routines are given.

BLATZ, WILLIAM EMET, AND HELEN BOTT

The management of young children. With a foreword by Sidonia Matsnar Gruenberg. New York: William Morrow and Company, 1930. 354 p. 21 cm. \$3.00. 3153a

Contents: Part I, The nature of control: Authority in the modern home. Discipline and freedom. The nature of control. Part II, The physical environment: Opportunities for activity. Constructive and destructive tendencies. Danger situations. Part III, The social environment: Adult influences—unwitting. Adult influences—witting. Relations among children. Part IV, Types of motivation: Levels of action. Rewards and punishments. Success and failure. Bibliography. Index.

Note: This volume is intended to present a philosophy of child training for parents rather than a scientific treatise upon the subject. With the view of contributing to the "socializing" of children, the authors have outlined what they consider the underlying principles of child-parent relationship within the mores of present day society, emphasizing principles of social adjustment in the pre-school period. While there is a sequence of thought running through the book, the authors have tried to make each chapter a unit which might be read independently of the others. Each chapter concludes with an outline, illustrations, and questions for the reader to answer.

BOSSARD, JAMES HERBERT SIWARD, AND ELEANOR S. BOLL

Family situations. An introduction to the study of child behavior. Philadelphia: Univer-

sity of Pennsylvania Press, 1943. 265 p. 23 cm. \$3.00. 3154

Contents: Part I, The situational approach: The development of the situational approach. The meaning and implications of the situational approach. Family situations: their meaning and analysis. Classification in the growth of knowledge. The classification of family situations. Part II, Studies of family situations—a summary: Intra-family relations. Family patterns. External factors. Part III, Division of labor: Sociology and the situational approach to behavior. Bibliography. Index.

Note: This treatise for teachers and advanced students of sociology and psychology presents an approach to the study of behavior problems in children through the study of the family situations to which such behavior is a response. The first part of the book deals with a series of developments and theses in this form of approach; part II synthesizes the many specific studies of family situations from original case histories and from pertinent literature of the field. The final portion outlines the sociological methods recommended for the further development of the situational approach. The bibliography is extensive and additional references appear in footnotes.

BOSSARD, JAMES HERBERT SIWARD

Marriage and the child. Philadelphia: University of Pennsylvania Press, 1940. 178 p. illus. 23 cm. \$2.00. 3155

Contents: Part I, The background of child welfare: Child welfare and the modern mind. The child welfare movement. Part II, Selected problems of marriage: The age factor in marriage. Residential propinquity as a factor in marriage. Nationality and nativity as a factor in marriage. Further studies in marriage selection. Ecological areas and marriage rates. Marriage rates and the depression: a Philadelphia study. Summary. Index.

Note: This study consists of two distinct and somewhat independent parts, namely, a survey and appraisal of the social movement in the United States which aims at the promotion of the well-being of children from both the philosophic and the practical aspects; followed by six original studies of certain problems of marriage presented as background material for the more scientific appraisal of the problems of children and of the family situations which condition the development of the child's personality. Numerous statistical tables are given and there are bibliographic references in footnotes.

BRECKENRIDGE, MARIAN EDGAR, AND E. LEE VINCENT

Child development; physical and psychological growth through the school years. Philadelphia: W. B. Saunders Company, 1943. 592 p. illus. 22 cm. \$3.25. 3156

Contents (abridged): Some general principles of development. Interrelatedness of growth: Influences on growth. Heredity, endocrines, illnesses, emotions. Nutrition and routines: home, school, church, camp; further community factors. Growth and use of the body: Physical growth. Motor control. Growth of sense perceptions and judgments. Development of memory; imagination; creative activity. Growth of language, thinking and reasoning. Social and personality development: General personality trends. Conflict and aggression. Cooperation and friendship. Moral judgment and psycho-sexual development. Summary of growth achievements. Bibliography. Index.

Note: This text was designed for professional students in psychology, teacher training, home economics, medicine, nursing and social work, as well as for parents. Although it deals principally with the span from age five through adolescence, roots are traced all the way back to the pre-natal period, and branches indicated reaching beyond adolescence. Steady focus is kept on the psychological and behavior problems of the child and attention is called to the need for recognition of certain physical defects. Questions are placed at the ends of chapters and also bibliographies. Cross-references to the bibliography at the end of the book are also given in the text proper.

BROOKS, FOWLER DELL, AND LAURANCE F. SHAFFER

Child psychology. Boston: Houghton Mifflin Company, 1937. 600 p. illus. 22 cm. \$3.25. 3156a

Contents: Problems and methods of child psychology. The origins of child behavior. The principles of learning. The behavior of infants. Growth in bodily size. The development of physical

and motor capacities. Language. The developments of mental functions. The growth of intelligence. Emotional behavior. Problems of emotional behavior among children. Motivation during childhood. Social development of children. Children's character and children's religion. Personality traits: their measurement and development. Personality adjustments of children. Child hygiene. The organization of traits. The prediction, guidance, and control of child behavior. Additional references. Glossary. Index.

Note: A textbook on child psychology, prepared as a companion volume to Brooks' *Psychology of adolescence*, Boston: Houghton Mifflin Company, 1929, and covering the first 12 years of the child's life. The literature of the subject has been organized and evaluated in an effort to produce a coherent picture of the subject. The mechanisms of heredity and the prenatal and postnatal development of structure and function are treated, and those forms of activity of the child which are a result of his contact with his social system are considered. Selected references are given at the end of each chapter in addition to the list at the end of the volume.

BURKS, BARBARA STODDARD, AND OTHERS

Genetic studies of genius, Volume III: The promise of youth; follow-up studies of a thousand gifted children, by Barbara Stoddard Burks, Dortha Williams Jensen, Lewis M. Terman, assisted by Alice M. Leahy, Helen Marshall, Melita H. Oden. Stanford University, Calif.: Stanford University Press, 1930. 522 p. 22 cm. \$6.00. 3156b

Contents: Part I, Methods and results: Purpose, methods, and personnel. Follow-up procedures. Retests of intelligence. Educational progress. Tests of scholastic achievement. Achievement as indicated by grades. Scholastic and other interests. Vocational plans and vocational achievement. Social and personality traits. Ratings on personal traits and home conditions. Health history and vital statistics. Family statistics and sibling tests. The high school and special ability groups. Part II, Case studies: Three gifted girls. School acceleration and social adjustment. Deterioration of IQ or achievement. The conquest of obstacles. Some twins and other siblings. Behavior and personality problems. Five musicians. Youthful zealots. The promise of babyhood and the fulfillment of youth. Part III, A study of literary juvenilia: Derivation of a tentative scale for rating literary juvenilia. The tentative scale and its use. Results or ratings, with illustrations. Case notes on gifted juvenile writers. The prediction of literary achievement. Part IV, Summary: Retrospect, prospect, and summary. Blanks used in gifted children follow-up. Index.

Note: The first and second volumes in this outstanding study of gifted children, conducted under the direction of Lewis M. Terman, were published in 1926. The present volume is a further study after six years of the same group treated in the first volume, and was designed primarily to discover how gifted children develop as they grow older. The data are presented in the form of tables, case histories and interpretative text.

CARROLL, HERBERT ALLEN

Genius in the making. New York: McGraw-Hill Book Company, Inc., 1940. 307 p. illus. 23 cm. (McGraw-Hill series in education, Harold Benjamin, consulting editor) \$2.75. 3157

Contents: Identification of intellectually gifted children. Racial and family background. The role of environment. Physique and health. Social characteristics. Mental characteristics and achievements. Constancy of mental development. Determiners of eminence. Special gifts. Educational adjustments—acceleration. Educational adjustments—enrichment. Biography of a typical gifted child. Selected bibliography. Index.

Note: A discussion mainly from the viewpoint of the psychology of mentally superior individuals. Most of the data presented relate to intellectually gifted children. The author has presented data based on research where these are available, but he has not hesitated in other cases to present his own interpretations which occasionally go beyond experimental data.

CURTI, MARGARET (WOOSTER)

Child psychology. Second edition. New York: Longmans, Green and Company, 1938. 458 p. illus. 22 cm. (Longmans' psychology series) \$3.20. 3158

Contents: Introduction. Ann's first five years. Heredity and environment in prenatal and neonatal growth. Physical growth and the development of overt sensory-motor adjustments. Native factors in emotion and motivation. The distribution and development of particular mental capacities: general intelligence. Perceptual-motor learning: The conditioned response. Complex habits. The origins of meaning: the first ideas and the development of speech. The growth of meanings. The organization of meanings in reflective thought and reasoning. The significance of problems in mental life. Some factors in the genesis and control of social and ethical behavior. The growth of personality. Index.

Note: Aims by presenting a critical basic interpretation of the field of child psychology to stimulate the student to organize his own psychological thinking in an effective way. The work is presented mainly from an American functionalistic point of view and is intended for use as a textbook in college courses. The second edition contains eight new chapters, including a biography of a five-year-old child taken from a diary record made by a psychologically trained mother, and new material on heredity in mental development together with related data based on new research and publications. Bibliographical references are given in footnotes and there are further suggestions for reading at the end of each chapter.

DEARBORN, WALTER FENNO, AND JOHN W. M. ROTHNEY

Predicting the child's development. Cambridge, Mass.: Sci-Art Publishers, 1941. 360 p. 24 cm. \$4.50. 3158a

Contents (abridged): Introduction. Some problems in the study of mental and physical growth of school children. Methods of measurement. Studies concerning the nature of growth and development: Facts revealed by the longitudinal study of growth. Statistics of skeletal age and the relation of skeletal age to mental age. Equating measure of mental growth. Sexual maturation and the physical growth of girls aged six to nineteen. Consistency in growth of stature. Consistency of relative position in the mental growth of girls. Consistency of performance on verbal and non-verbal test items of mental tests. The curve of mental growth. Studies of relationships in mental and physical growth: The relation of physical growth to school achievement at the age of adolescence. Stage of ossification as a measure of growth and its relation to intelligence-test scores. A note on mental-physical relationships. The relations of mental and physical development. Miscellaneous studies: Basing weight standards upon linear bodily dimensions. Individual differences in growth and development. Summary and conclusions. Indexes.

Note: This volume is the result of the researches of a number of collaborators and includes the subject matter of at least three doctoral dissertations. Numerous tables and figures are used to document the findings of studies undertaken. The investigation, known as the Harvard Growth Study, was inaugurated in 1922 in the Psycho-Educational Clinic of the Harvard Graduate School of Education and is concerned with the examination of 3,500 school children over a period of years. Extensive use was made of standard psychological tests which are listed at the end of the volume. There is also a register of personal names and a subject index.

DEWEY, EVELYN

Behavior development in infants; a survey of the literature on prenatal and postnatal activity, 1920-1934. New York: Published for the Josiah Macy, Jr., Foundation by Columbia University Press, 1935. 321 p. 23 cm. \$3.50. 3159

Contents: Part I, Growth processes: Theories of behavior development. Evidence from biology and neurology. Correlation of structure and function from animal studies. Part II, Behavior of the human fetus: Primary fetal motions and responses. Patterns of activity. Responses to sensory stimulation. Summary. Part III, Neonatal behavior: Reactions fully developed at birth. Reactions developing or regressing after birth. Summary. Part IV, Behavior during infancy: The development of locomotion. Hand and arm reactions. Eye reactions and visual acuity. Reactions to sound. Adjustment for the solution of problems. Language. Summary. Part V, Summary and conclusions. Bibliography. Index.

Note: A systematic résumé, with bibliographical references, of the literature published 1920-1934 covering human behavior development from the fetus through the second year of life. The purpose of the survey is not to cover all the literature but to select salient results and organize them according to the plan being followed in the study of growth at the Normal Child De-

velopment Clinic, where the survey was originally made. Although primarily intended for psychologists and others working in the field of child study, it is a book that can be of use to the general reader interested in the subject.

FAEGRE, MARION ELLISON (LYON), AND JOHN E. ANDERSON

Child care and training. Sixth edition revised. Minneapolis, Minn.: The University of Minnesota Press, 1943. 314 p. illus. 21 cm. \$2.50. 3160

Contents: The young child. Physical growth and development. General care, including diet and clothing. Children's diseases. Mental growth of the child. Learning. Emotional habits. Eating habits. Sleeping habits. Eliminative and other early habits. Constructive discipline. Curiosity, questioning, and sex education. Imagination, truth, and falsehood. Play. Social development. Books and reading. The family. Books dealing with the development and training of children. Index.

Note: A guide for parents in the training and care of young children from the ages of one to fourteen years. The material is based on the extension courses and study groups sponsored by the University of Minnesota and upon the questions asked by parents in those courses. Emphasis is upon the psychological approach to the understanding of the needs and behavior of children. Specific problems such as lack of appetite, decayed teeth, fear, common diseases, and other factors are discussed, and the physical, mental, and social growth of the child is analyzed from the first year through junior high school. The aim is to help parents in developing a healthy happy child so that he may become a well-adjusted, normal adult. The sixth edition contains minor additions based on recent studies.

FITE, MARY DELAFIELD

Aggressive behavior in young children and children's attitudes toward aggression. Provincetown, Mass.: The Journal Press, 1940. 319 p. 24 cm. (Genetic psychology monographs. Vol. 22, no. 2) Paper, \$3.00. 3160a

Contents: Introduction. Attitudes toward aggression and degree of aggressive behavior. Influence of parental and group attitudes on the child's attitudes toward aggressive behavior. Aggressive behavior and attitudes in relation to the child's place in the group. The child's personality and his attitudes toward aggression. The role of the teacher in the formation of attitudes toward aggressive behavior. Summary and interpretation. References.

Note: This study is primarily concerned with the influence of experience in nursery school and kindergarten on attitudes of young children toward physically aggressive behavior and is largely limited to a discussion of attitudes toward one type of physical aggression: children hitting one another. It deals mainly with the child's feelings about his behavior, rather than the behavior itself.

GARRISON, KARL CLAUDIUS

The psychology of exceptional children. New York: The Ronald Press Company, 1940; revised printing, 1943. 351 p. illus. 21 cm. (Psychology series; A. T. Poffenberger, editor) \$3.25. 3162

Contents: Our children. Part I, Individual variations: The origins of child behavior. Individual development. Individual differences. Trait differences and education. Measurements in education. Part II, Gifted children: The gifted child in school. Characteristics of the gifted child. Psychology of special abilities. School provisions for the gifted. Part III, The retarded child: The problem of retardation. Characteristics of the mentally retarded child. Special disabilities. Educational retardation and personality maladjustments. Curricula provisions for the retarded child. Development through group participation. Part IV, The physically handicapped child: The problem of defective vision. Hearing defects of children. The speech defective child. Problems related to left-handedness. Children of lowered vitality. The crippled child. Appendix. Indexes.

Note: A textbook for college courses in the subject and a guide for teachers in giving more effective treatment to exceptional children. The volume presents materials based upon a survey of a large number of studies in the technical literature of the field, which is organized and simplified without impairment of authenticity. Selected references are given at the end of some of the chapters.

GARVEY, CHESTER ROY

(736.7) The activity of young children during sleep, an objective study. Minneapolis: The University of Minnesota Press, 1939. 102 p. illus. 23 cm. (University of Minnesota. The Institute of Child Welfare. Monograph series. No. xviii) \$2.00. 3163

Note: Analyzes the relationship of the quietness of young children's sleep to length of sleep, time of going to bed, afternoon naps, room and outdoor temperatures, season, age and sex of the child, violent exercise between supper and bedtime, and sleeping posture.

GESELL, ARNOLD LUCIUS, AND OTHERS

(736.7) An atlas of infant behavior; a systematic delineation of the forms and early growth of human behavior patterns. In two volumes, illustrated with 3,200 action photographs. Volume one, in collaboration with Helen Thompson and Catherine Strunk Amatruda. Volume two, in collaboration with Alice Virginia Keliher, Frances Lillian Ilg, and Jessie Jervis Carlson. New Haven: Yale University Press, 1934. 2 v. illus. 31 cm. \$25.00. 3163a

Contents (abridged): Volume I, Normative series—general introduction: Prefatory summary. Underlying concepts. Cinematography and the analysis of behavior patterns. Illustrations of arrangements and procedures. A normative investigation of infant behavior. The normative behavior situations. Plan and uses of the atlas. Selected bibliographies. Delineations of behavior patterns and pattern phases: Posture and locomotion. Early perception and prehension. Perceptual, prehensory and adaptive behavior. Volume II, Naturalistic series—introductory summary: A naturalistic survey of infant behavior. The naturalistic approach. Arrangements for observation. The infant's behavior day. Family and home conditions. Photographic techniques. Illustrations of equipment and procedures. Delineations of behavior patterns and episodes.

Note: A series of photographs constituting a comprehensive record of infant behavior during the first year of life. Volume two records similar behavior patterns as are considered in volume one, but the study is of infants under conditions of domestic life with special emphasis on social behavior, and individual differences rather than normative trends are emphasized. The photographs were selected from numerous cinema records of behavior sequences which were made for each child. Descriptive captions taken from the observers' records of the photographed actions accompany each picture or picture sequence. The work is of interest to psychologists and others concerned with child development, and represents a type of analysis which the authors believe to be of importance to developmental psychology.

GOODENOUGH, FLORENCE LAURA

(136.7) Anger in young children. Minneapolis: The University of Minnesota Press, 1931. 278 p. 20 cm. (University of Minnesota. The Institute of Child Welfare. Monograph series. No. ix) \$2.50. 3163b

Contents: Introduction. Behavior during anger. The frequency and duration of outbursts. Conditions making for increased irascibility. Activities during which anger occurs. The immediate causes of anger. Methods of control. Parent-child relationships. General summary. Bibliography. Index.

Note: This monograph is a first step in the accumulation of objective data regarding anger manifestations among children. It was undertaken with the thought of establishing a body of data that might serve as a basis for distinguishing between ordinary and excessive outbursts of anger. The book includes a selected bibliography. Although the volume contains many tables and figures, its language is not too technical, hence it can be used by parents as well as by child specialists.

HARDIN, FLOYD, AND OTHERS, COMPILERS

Child psychology; a bibliography of books in

English annotated and classified under: child study; children, abnormal and backward; children—management; education of children; juvenile delinquency; parent and child; compiled by Floyd Hardin and Eulalia Dougherty Chapman, assisted by Letha Hill. Denver: Bibliographical Center for Research, 1938. 203 p. 27 cm. \$1.00. 3164

Contents: Preface. Acknowledgment. Key to abbreviations. Periodicals to which reference is made. Bibliography: Child study; Children, abnormal and backward; Children—management; Education of children; Juvenile delinquency; Parent and child.

Note: A listing of 640 books in English covering six important divisions in the field of child psychology. Only titles for which authoritative annotations could be found were included. Essential bibliographical details are given for the identification of the volumes; annotation of the entries, reference to reviews where further descriptions may be found, and location of books and periodicals in leading libraries of the Rocky Mountain area are features of the bibliography. It is designed primarily for psychologists, educators, and parents.

HARTWELL, SAMUEL WILLARD

Fifty-five "bad" boys. With an introduction by William Healy, M.D. New York: Alfred A. Knopf, 1931. 359 p. 21 cm. \$2.25. 3165

Contents: Introduction. The problem. The plan. The technique. Misunderstandings. Pleasures from delinquency. Preventive psychotherapy. Lack of loyalties. Inferiority. Mental and neurological diseases. Psychic trauma. Uncertainties. Distorted lives. Running away from life. The unloved and unwanted child. Interpretation of results. As others see it. Summary.

Note: The first section presents two main ideas concerning the practical treatment of problem children: first, a discussion of the depth of rapport that may be established; second, the dividing of the thought into theoretical thinking, planned treatment, and psychiatric treatment. The second section is the report of 55 cases and a discussion of them in the light of their eventual outcome.

HENRY, CHARLES ERIC

Electroencephalograms of normal children. Washington, D.C.: Society for Research in Child Development, National Research Council, 1944. 71 p. illus. 23 cm. (Society for Research in Child Development. Monographs. Vol. ix, no. 3. Serial no. 39) Paper, \$1.50. 3165a

Contents: Foreword, by William Walter Greulich. Introduction. Serial changes in alpha frequency. Cross-sectional measurements. Measurements of slow activity. Correlations between EEG measures and growth and development. Questionably normal and abnormal EEGs from normal children. Comment. Summary and conclusions. Bibliography.

Note: This monograph reports a study based upon the collection of 3,765 electroencephalograms of normal children made since 1935 by the Brush Foundation. The records are based on single and repeat examinations of some 890 children ranging in age from 3 months to 19 years. Since extensive anthropometric and psychometric data on the same children were available, attempt was made to relate the electroencephalographic pattern to other aspects of the child's physical and mental development. The publication is the third in the series of reports summarizing some of the findings of the Brush Foundation study of the growth and development of normal children, the two previously issued reports being *The Brush Foundation study of child growth and development. I. Psychometric tests*, by Elizabeth Ebert and Katherine Simmons (see Index) and *The Brush Foundation study of child growth and development. II. Physical growth and development*, by Katherine Simmons (see Index).

HURLOCK, ELIZABETH BERGNER

Child development. New York: McGraw-Hill Book Co., Inc., 1942. 478 p. illus. 23 cm. (McGraw-Hill publications in psychology) \$3.50. 3165b

Contents (abridged): The history of child psychology. Principles of development. Prenatal development. The newborn infant. Physical growth. Motor development. Development of speech. Emotional development. Social development. Play. Development of understanding. Moral development. Development of religious interests. Sex development. Forms of self-expression. Bibliography. Index.

Note: A textbook of child psychology in which the child has been observed free from the influence of any one specific environmental influence, while at the same time attention has been given to an analysis of the different environmental factors that affect the course of development. Approximately 775 references are cited in the bibliography.

INSTITUTE FOR JUVENILE RESEARCH, CHICAGO

Child guidance procedures. Methods and techniques employed at the Institute for Juvenile Research. Paul L. Schroeder, director. New York: D. Appleton-Century Company, Inc., 1937. 362 p. 21 cm. \$2.50. 3166

Contents: Part I, The problem of child guidance: Nature and need of childhood. Existence and variety of problems. The child guidance approach. Part II, The diagnostic study: Organization of the clinic at the Institute for Juvenile Research. The social history. The medical study. The psychological examination. The recreation study. The psychiatric interview. Synthesis and program of therapy. Part III, Therapy: Problems arising from interference with the child's opportunity to grow; case studies. Problems arising from failure to support the child's dependency; case studies. Problems arising from failure of proper direction, training, or control; case studies. Problems arising from the constitutional inadequacy of the child. Part IV, The clinic and the community: The relationship between the clinic and the community. Part V, Perspective. Bibliography. Index.

Note: A text and reference book intended primarily for students pursuing field training courses in psychiatry, social work, psychology, and sociology. The work provides orientation in child guidance practices with special reference to the program of the Institute for Juvenile Research, and is also useful to physicians, educators, social workers, court workers, and recreation leaders. There are a number of summaries of case histories and interviews with children and parents as well as recommended programs of treatment and direction.

JENSEN, ARNE SIGURD

Psychology of child behavior. New York: Prentice-Hall, Inc., 1938. 664 p. illus. 21 cm. (Prentice-Hall psychology series; F. A. Moss, editor) \$3.00. 3166a

Contents: Introduction. The scope of child psychology. Child study in retrospect. Purposes and processes in child psychology. Physical motor, and mental growth. Heredity and hereditary traits. Native equipment for responses. The learned responses. Individual differences. The expressive arts. The play interest in child life. The intellectual element in child life. The emotional element in child life. Behavior problems. Social or group life of children. Mental hygiene for children. Personality development. Behavior hygiene. Possibilities and problems in child psychology. Conclusions. General references.

Note: The aim of the author is to produce a teachable text in child psychology without sacrificing scientific accuracy. The work treats the period of the child's life before adolescence. Controversial aspects of psychology are avoided. In addition to approximately 240 works in the list of general references, references and exercises are given at the end of each chapter.

JERSILD, ARTHUR THOMAS

Child psychology. Revised and enlarged. New York: Prentice-Hall, Inc., 1940. 592 p. 24 cm. (Prentice-Hall psychology series; F. A. Moss, editor) \$4.00. 3167

Contents: The newborn child. Learning and growth. Routine physical habits in early childhood. Motor development. Language development. Development of social behavior. Emotional development: Introductory. Fear, anger, jealousy. Pleasure, affection, sympathy. Growth of understanding. Children's make-believe, dreams, and other imaginative activities. Children's ideals, morals, and religion. Children's interests. The growth and prediction of intelligence. Personality patterns and problems of adjustment. Author index. Subject index.

Note: A text and reference work for students of child psychology, presenting the fundamentals of behavior and emotion in the child from infancy to early adolescence. The revised edition contains new chapters on learning and growth, the establishment of habits of eating, sleeping, and elimination, children's interests, imaginative activities, and moral and religious concepts. Advances in other related fields between the years 1933 and 1940, as reflected in the literature of the subject, have also been incorporated. A feature of the work is the large number of references given at the end of each chapter which total approximately 750 books and articles published in America mainly between the years 1929-1939.

JERSILD, ARTHUR THOMAS, AND OTHERS

Children's fears, dreams, wishes, daydreams, likes, dislikes, pleasant and unpleasant memories; a study by the interview method of 400 children aged 5 to 12, by Arthur T. Jersild, Frances V. Markey, and Catherine L. Jersild. New York: Bureau of Publications, Teachers College, Columbia University, 1933. 172 p. illus. 23 cm. (Child development monographs. No. 12) \$1.75. 3167a

Contents (abridged): Introduction. Procedure. Subjects. Treatment of data. Validity of results. Comparison between results of repeated interviews. Children's wishes: Disposition of a million dollars. Occupational preferences. Best happenings. Worst happenings. Children's likes and dislikes. Wishes with regard to change in personal status. Children's attitudes toward going to school. Daydreams and imaginary companions. Dreams. Fears. General summary and discussion: Sex differences. Age differences. Differences as related to intelligence. Differences between children from superior and poor environments.

Note: Interviews with a large representative group of New York City children distributed over a wide age range and carefully selected as to distribution of sex, grade, and socio-economic status form the basis for this report. Many of the original replies of the children are given and significant comparisons are made between different groups of children. Findings substantiate some of the theories about child life that have been held for many years, and in some cases form a basis for a reevaluation of these theories.

KAWIN, ETHEL

Children of preschool age; studies in socio-economic status, social adjustment and mental ability, with illustrative cases. Chicago: The University of Chicago Press, 1934. 340 p. illus. 23 cm. (Behavior Research Fund. Monographs) \$3.50. 3168

Contents: Part I, The preschool department of the Illinois Institute for Juvenile Research: Introduction—development of the preschool department. Service to nursery schools. Service in clinics. Case summaries. Part II, Research studies: Introductory—sources and characteristics of case material. Study one—young children of low and high socio-economic status: a comparative study of their performance on the Merrill-Palmer scale. Study two—social adjustment in children of preschool age. Study three—analysis of Stanford-Binet and Merrill-Palmer test results for children of preschool age. A supplementary note on the question of causality. Index.

Note: Part I of this work consists chiefly of reports of practical work that has been done with children of preschool age at the institute mentioned in the part title. This part is of interest to teachers, social workers, and others concerned with the preschool child. The studies in Part II are mainly of interest to those persons concerned with research and child development. Forty-five tables of data are interpolated in the text.

LERNER, EUGENE, AND LOIS BARCLAY MURPHY, EDITORS

Methods for the study of personality in young children. With the collaboration of L. Joseph Stone, Evelyn Beyer, Elinor Whitney Brown. Washington, D.C.: Society for Research in Child

Development, National Research Council, 1941. 289 p. illus. 23 cm. (Society for Research in Child Development. Monographs. Vol. vi, no. 4. Serial no. 30) Paper, \$2.00. 3168a

Contents: Preface, by L. K. Frank. Editorial foreword. Ages and intelligence quotients of children mentioned in the study. Part I, Experiments in free play by Lois Barclay Murphy: Miniature life toys. Sensory toys. Dough and cold cream. Summary of 'free' methods. Part II, Experiments in group play and readiness for destruction, by L. Joseph Stone: Group play techniques with special reference to leadership. Aggression and destruction games: balloons. Part III, Experiments in active play techniques, by Eugene Lerner: Introduction. Blocking technique. Gratification technique. Marionette technique. Motivation technique. General diagnostic play technique. Part IV, Observing children in nursery school situations: Observing behavior in the nursery school, by Evelyn Beyer. Observing behavior during the intelligence test, by Elinor Whitney Brown. Observing behavior in the pediatric examination, by Eugene Lerner. Observing behavior with the music teacher, by Eugene Lerner.

Note: This monograph presents the fruits of four years' exploration and experimentation by a group at Sarah Lawrence College concerned with the problem of studying the personality make-up and development of young children. It is intended for the attention of students of child development and also of those concerned with programs in education and early childhood and the task of promoting mental health. The research was financed by the Josiah Macy, Jr., Foundation.

LEVY, DAVID MORDECAI

Maternal overprotection. New York: Columbia University Press, 1943. 417 p. 23 cm. \$4.50. 3169

Contents: Foreword. Aims and methods. Case sifting. Excessive contact. Infantilization. Prevention of social maturity. Maternal control. Maternal and paternal factors. Problems of the over-protected. Treatment, prognosis, psychopathology. Case studies of treatment and follow-up. Appendix: Case summaries. Index.

Note: This volume contains studies which were made possible by the resources, records, and personnel of the former Institute for Child Guidance in New York City. They comprise medical, social, psychometric, and psychiatric investigations whose primary aim is to show the influence of the mother upon emotional and intellectual life from infancy to maturity. The book is intended for psychiatrists, pediatricians, social workers, teachers, and others concerned with child guidance. Many tables and case records are included. The studies originally appeared in *Psychiatry*, the quarterly publication of The William Alanson White Psychiatric Foundation.

LOUTTIT, CHAUNCEY MCKINLEY

Clinical psychology: a handbook of children's behavior problems. With a foreword by L. T. Meiks. New York: Harper & Brothers, 1936. 695 p. illus. 22 cm. \$4.00. 3170

Contents: Introduction. Diagnostic methods: Anamnesis and examination; psychometrics. Mental deficiency or feeble-mindedness. School retardation. Specific disabilities in school subjects. Superiority. Behavior problems: introduction. Conduct problems. Juvenile delinquency. Speech defects. Personality problems. Psychoneuroses and psychoses. Sensory defects. Neurological and physical disabilities. List of references. Index.

Note: This book covers topics pertinent to the clinical applications of psychology in the field of children's behavior. It includes methods of examination and diagnosis, psychometrics, problems associated with intelligence and special abilities, personality disturbances, and psychological problems associated with sensory, motor, and other organic disabilities. For each problem the author gives the incidence, significance, causes, psychological characteristics, and treatment. Reference data in the shape of tables, charts, and diagrams are incorporated, as well as considerable case history material.

McGRAW, MYRTLE BYRAM

Growth: a study of Johnny and Jimmy, with a preface by Dr. Frederick Tilney and an introduction by John Dewey. Drawings by Kenneth W. Breeze. New York: D. Appleton-Century Company, Incorporated, 1935. 319 p. illus. 23

cm. (The Century psychology series; Richard M. Elliott, editor) \$3.50. 3170a

Contents: Behavior development. Plan of investigation. Phylogenetic activities and the effect of exercise upon them. Ontogenetic behavior activities and the effect of exercise upon them. The development of associational activities. Modification of behavior-patterns of different stages of development during infancy. The effect of early exercise upon subsequent experience during infancy. The development and influence of attitudes. The physical development of Johnny and Jimmy. General principles of growth. References. Index.

Note: A detailed study of the comparative growth and behavior development of a set of twins who were carefully observed in the laboratory of the Normal Child Development Clinic at Columbia Medical Center during the first two years of their life. The purposes of the reported investigation were (1) to study the process of development as it is manifested in the growth of particular behavior-patterns of the human infant and (2) to evaluate the influence of exercise or use of an activity upon its development. Thus, one child was given special daily exercise in particular activities, while the other child's activities were not restricted any more than would be customary for the average infant of corresponding chronological age in an average home. There is a bibliography of 68 references.

MERRY, FRIEDA (KIEFER), AND RALPH VICKERS MERRY

From infancy to adolescence; an introduction to child development. New York: Harper & Brothers, 1940. 330 p. illus. 21 cm. \$2.50. 3171

Contents: Historical background and methods of studying children. Origin and development through the neonatal period. The development of motor abilities. The development of language. Intelligence and its measurement. Learning and motivation. The development of emotional behavior. The development of play. Graphic and musical expression. The child and his reading. Children's interests in the radio and the movies. Personality and social development. Character and religion. Selected bibliography. Index.

Note: A brief, clear treatment of the subject, in accord with the modern trend toward the study of the child rather than toward a more formal study of educational psychology. Each chapter is provided with questions, activities, and objective tests.

MORGAN, JOHN JACOB BROOKE

Child psychology. Third edition. New York: Farrar and Rinehart, Inc., 1942. 588 p. illus. 21 cm. \$3.00. 3172

Contents: Methods and problems of child study. Prenatal development. Infant behavior. Physical growth. Motor development. Emotional development. Motivation. Perceptual development. Language. Learning. Problem solving. Play and work. Intelligence. Social development. The growing personality. Index of names. Index of subjects.

Note: This book is primarily for use in college courses. Recent research has been brought together and interpreted to show that the activities of a child can be intelligently visualized only in terms of (a) the combination of influences which are operating at the moment, (b) the antecedent circumstances which enabled the child to develop the behavior patterns and attitudes he now manifests, and (c) the consequent behavior which is likely to result from his present activities. Each citation in the text is keyed to a list of pertinent references which appears at the end of each chapter. There is available to accompany this text Pauline A. Humphreys and Gertrude Hosey, *Workbook in child psychology*, third edition, New York: Farrar and Rinehart, 1942, 120 p., \$0.75.

MORGAN, JOHN JACOB BROOKE

The psychology of the unadjusted school child. Revised edition. New York: The Macmillan Company, 1936. 339 p. 20 cm. \$2.50. 3173

Contents: Education and mental stamina. Underlying causes of maladjustments. Essential adjustments of childhood. The habit of success. Defense mechanisms. Distraction devices. Memory distortions. Daydreaming. Fears. Feelings of insecurity. Blaming others. Backbiting and reforming others. Compensation. Arguing and excuse-making. Living in the past. Social maladjustments. Instability. Intellectual defects. Delinquency. Mental hygiene. Selected books for further reading. Index.

Note: The purpose of this book is to assist teachers in recognizing and handling mental maladjustments in children, and in guiding children into habits of mental health. It is based on a background of 2,500 case studies in the psychological clinic conducted by the author at Northwestern University. In this edition, the book has been greatly changed along lines that will make it easier for the teacher to apply the principles to school situations. Practical hints and review questions are appended to each chapter.

MURCHISON, CARL ALLANMORE, EDITOR

136.7
m9342
A handbook of child psychology; second edition revised, by John E. Anderson, Heinrich Klüver, Phyllis Blanchard . . . Edited by Carl Murchison. Worcester, Mass.: Clark University Press, 1933. 956 p. illus. 23 cm. (The International university series in psychology) \$5.00.

3174

Contents: Preface to the second edition. Preface to the first edition. Part I, Introductory: The methods of child psychology, by John E. Anderson. Part II, Development of child behavior before birth, by Leonard Carmichael. Part III, Development of child behavior after birth: The neonate, by Karl C. Felt. Maturation and the patterning of behavior, by Arnold Gesell. Locomotor and visual-manual functions in the first two years, by Mary M. Shirley. Emotional development, by Mary Cover Jones. The measurement of mental growth, by Florence L. Goodenough. Language development, by Dorothea McCarthy. The social behavior of children, by Charlotte Bühler. Learning in children, by Joseph Peterson. Children's morals, by Vernon Jones. Children's philosophies, by Jean Piaget. Order of birth, by Harold Ellis Jones. Environmental forces, by Kurt Lewin. Sex differences, by Beth L. Wellman. Speech pathology, by Lee Edward Travis. Eidetic imagery, by Heinrich Klüver. The physiological appetites, by William E. Blatz. Part V, Studies of special groups: The gifted child, by Lewis M. Terman and Barbara S. Burks. The feeble-minded child, by Rudolf Muttner. The child of special gifts or special deficiencies, by Leta S. Hollingworth. The child with difficulties of adjustment, by Phyllis Blanchard. The adolescent child, by Leta S. Hollingworth. The primitive child, by Margaret Mead. Name index. Subject index.

Note: A textbook in child psychology, prepared by a group of specialists who have each contributed a section dealing with a particular phase of the subject. References are provided at the end of each paper. In the second edition, chapters were eliminated on those topics which were not subjected to continuous research between 1931 and 1933. Several new chapters were added and the entire work thoroughly revised.

NAGGE, JOSEPH WILLIAM

136.7
N134
Psychology of the child; mental and physical growth. New York: The Ronald Press Company, 1942. 530 p. illus. 21 cm. \$3.25.

3175

Contents: Historical introduction. The behavior of the organism before and shortly after birth. Motor development. The development of perception. The growth of intelligence. The physical growth of the child. Learning and forgetting. The origin and development of language. Personality and social development. Motivation and incentive. Play. Types of exceptional children. The mental and physical hygiene of the child. Appendix: Weight-height-age tables.

Note: This book deals with the mental and physical growth of the child and presents a survey of child study. The treatment is eclectic, and reader interest has been a foremost consideration. Data include many recent and significant studies in the physiological and psychological fields. Some earlier studies of historical and technical value have also been included. The order of presentation is chronological, following roughly the order in which behavior phenomena appear in the child. There is much practical material, making the book useful to both teachers and parents. Selected bibliographies provide for additional reading.

RIBBLE, MARGARETHA ANTOINETTE

641.1
R3347
The rights of infants, early psychological needs and their satisfaction. New York: Columbia University Press, 1943. 118 p. illus. 22 cm. \$1.75.

3176

Contents: The right to a mother. Oxygen hunger. Sucking. Learning to feel. Sleep. Premental behavior. Some facts about

elimination. Life rhythms and artificial schedules. Babies must not be thwarted. Early emotional development. Getting ready to think. Fathers. Toward mental health. Bibliography. Index.

Note: The purpose of this book is to discuss a vital aspect of infant care which is not covered in the manuals dealing with food and hygiene—the human impulses which get their initial momentum in the primary relationships between the child and the mother. Many years of observation form the background for this study, but the author has succeeded in making it readable and interesting to the general reader as well as to the specialist in child development.

ROGERS, CARL RANSOM

The clinical treatment of the problem child. Boston: Houghton Mifflin Company, 1939. 393 p. 22 cm. \$3.25.

3177

Contents (abridged): Part I, Ways of understanding the child: A point of view. Methods of diagnosis. The component-factor method of diagnosis. Part II, Change of environment as treatment: The foster home as a means of treatment. Institutional placement as treatment for behavior problems. The advisability of removing a child from home. Part III, Treatment through modifying the environment: Family attitudes as a focus of treatment. The school's part in changing behavior. The intelligent use of clubs, groups, and camps. Part IV, Dealing with the individual: Treatment interview techniques; education, persuasion, release. Treatment interviews; deeper therapies. Making treatment effective. Appendix. Index.

Note: Written for psychologists, psychiatrists, social workers, school counselors, teachers, and others concerned with the treatment of behavior problems in children. It is suitable also for use in college courses. Selected bibliographies are appended to the chapters.

SANFORD, R. NEVITT, AND OTHERS

136.7
PS69
Physique, personality and scholarship; a co-operative study of school children, by R. Nevitt Sanford . . . and other contributors. Washington, D.C.: Society for Research in Child Development, National Research Council, 1943. 705 p. illus. 23 cm. (Society for Research in Child Development. Monographs. Vol. VIII, no. 1. Serial no. 34) Paper, \$2.00.

3177a

Contents: Part I, Introduction: Aims and principles. Treatment of data. Part II, Physical and physiological studies: Introduction. Interrelations between diet, illness, and certain physical variables. Physical measurements. Physiological variables. Interrelation of physical and physiological syndromes. Graphic case summaries. Part III, Studies of personality and the environment: Theory of personality. The variables of personality and of the environment. Manifest personality syndromes. Procedures and general results in investigating personality. Family press variables. Family press syndromes. Part IV, Intellectual development and school abilities: Introduction. Experiments with general concepts. Experiment with translating ability. General intellectual ability. School abilities and school progress. Relationships involving intellectual and school variables and syndromes. Part V, Interrelationships: Introduction. Relationships involving particular groups of syndromes. Correlates of manifest personality syndromes. Factors related to school success. Some general development trends. Part VI, Conclusion. Bibliography. Appendix.

Note: The research reported in this monograph was a clinical and exploratory study of the "whole child." The object was to investigate numerous factors of different types, with especial attention to how they become organized in the individual and to how this organization changes as the child grows. The subjects were 48 children between the ages of 5 and 14 years, who were studied intensively, 43 of them over a three-year period. Main emphasis was upon observation and recording rather than upon interpretation, but in places the authors point out possible educational implications of their findings. Statistical results are presented in tables and graphs.

SCHEIDEMANN, NORMA VALENTINE

136.76
Sch 29
The psychology of exceptional children. Boston: Houghton Mifflin Company, 1931-37. 2 v. illus. 19 cm. (Riverside text-books in education, edited by E. P. Cubberley) \$3.50, each volume.

3178

Contents: Volume I: The nature and origin of trait differences. The concept of general intelligence and its measurement. Major speech disorders. Minor speech disorders. The left-handed child. The mentally subnormal child. Special types of feeble-mindedness. Gifted children. Special types of gifted children. The psychoneurotic child. The psychopathic child. The deaf child. The blind child. The congenitally word-blind child. The delinquent child. Other types of exceptional children. Index. Volume II: Structures and functions of the nervous system. The cerebrally birth-injured child. The post-encephalitic child. The enuretic child. The albinistic child. The pre-schizophrenic child. The child afflicted with puberty praecox. The prematurely born child. The bilingual child. The eidetic child. The congenitally syphilitic child. Glossary. Index.

Note: This work is intended to serve as a textbook for college courses in the psychology of exceptional children, as well as a manual and guide for teachers and principals in public and private schools. The material is based upon a survey of the researches in the various divisions of specialization relating to the field which have been previously published in monographs and scientific journals. The best available methods of diagnosis, prognosis, and remedial treatment are presented for the various types of cases studied, which represent a considerable proportion of all types of exceptional children. Case histories and selected references are given at the end of each chapter.

SHIRLEY, MARY MARGARET

The first two years; a study of twenty-five babies. Minneapolis: The University of Minnesota Press, 1931-33. 3 v. illus. 20 cm. (University of Minnesota. Institute of Child Welfare. Monograph series. No. VI-VIII) \$7.50. 3179

Contents (abridged): Volume I, Postural and locomotor development: Purpose and methods of studying locomotor development. Progress toward creeping. Assuming an upright position. Development of walking. Interrelations of locomotor development. Individual differences. Relation to physical growth. Relation to intellectual development. Theoretical implications. Conclusion. Appendixes. Bibliography. Index. Volume II, Intellectual development: Development of intellect in babies. The motor sequence. The beginnings of speech. Early social development. Growth in comprehension. The psychological examinations. Tests of development. Choice tests. Textile test and instrument box test. Box tests. Picture test and odor test. Developmental trends in certain traits observed throughout two years. Consistency in rate of development. Suggested principles of behavior development. Appendixes. Bibliography. Index. Volume III, Personality manifestations: Personality in the baby. Personality as it appears at psychological examinations, in incidental relations, in speech. The meaning of personality in babyhood. Bibliography. Index.

Note: A study of the development of twenty-five babies by the Institute of Child Welfare at the University of Minnesota over a period of two years. In making the studies presented in these volumes, records were kept concerning the growth of the children at home through the cooperation of the mothers involved. In this study the relation of age to development is minimized because of the small size of the group, and the order, or sequence, of developmental events is stressed.

SKEELS, HAROLD MANVILLE, AND OTHERS

A study of environmental stimulation; an orphanage preschool project by Harold M. Skeels, Ruth Updegraff, Beth T. Wellman and Harold M. Williams. Iowa City, Ia.: University of Iowa, 1938. 191 p. illus. 23 cm. (University of Iowa studies. Studies in child welfare. Vol. xv, no. 4) Paper, \$1.50. 3179a

Contents (abridged): Co-operative preschool project. Research plan. The nursery school. Intelligence. Language. General information. Social maturity (social competence). Behavior adjustments of the preschool children. Social behavior of the preschool children as measured by the Berne scale. Motor achievements. Significance of the study. References. Appendix.

Note: This research study is an effort to determine the effects of preschool education, under controlled conditions, introduced into the lives of underprivileged children of average and below average intelligence. Children of preschool age were divided into two carefully matched groups of twenty each, only one of which was in attendance at the nursery school, for purposes of control and the division maintained for a three-year

period. Using this situation, a number of research studies were initiated to determine the effects of preschool experience upon the child's development.

SKINNER, CHARLES EDWARD, AND PHILIP LAURENCE HARRIMAN, EDITORS

Child psychology, child development and modern education, with the collaboration of the following: Amy F. Arey, Lawrence Augustus Averill, Lorin E. Bixler [and others]. New York: The Macmillan Company, 1941. 522 p. illus. 22 cm. \$3.00. 3180

Contents: Preface. Child development and modern education, by Charles E. Skinner and Philip L. Harriman. Heredity and early development, by Raleigh M. Drake. Physical growth in children, by John W. Charles. Motor development of the child, by Clarence E. Ragsdale. Growth in motivation during childhood, by Clarence E. Ragsdale. Language development in childhood, by Clarence E. Ragsdale. Emotional development of children, by Philip L. Harriman. Mental growth in children, by Philip L. Harriman. The learning of children, by Elden A. Bond. Social development of children, by Lester D. Crow. Character development in children, by Lorin E. Bixler. Religious development of children, by J. J. Smith. Aesthetic experience in childhood, by Gladys Ridsen. Play life of children, by Amy F. Arey. Personality development, maladjustments, and mental hygiene, by Lester D. Crow. The exceptional child, by Lawrence A. Averill. The psychoeducational clinic, by Brian E. Tomlinson. Child development through education, by Clyde Hissong. Appendix. Outline, prepared by Raleigh M. Drake. Index.

Note: Designed especially as a text in child psychology for students of education. Full bibliographies, tables, charts, and graphs are included.

STODDARD, GEORGE DINSMORE, AND BETH L. WELLMAN

Child psychology. New York: The Macmillan Company, 1934. 419 p. illus. 20 cm. \$2.75. 3181

Contents: Preface. Introduction. Introduction to the field: Trends in child psychology. Methods of research. Motor and mental development: Motor development. Characteristics of mental life. Sensory discriminations—concepts and thinking. Language. Growth of intelligence. Intelligence as related to other factors in child development. The meaning of intelligence. Learning. Social behavior, play and artistic ability: Social behavior. Play. Development of artistic capacity. Personality and adjustment: Emotional patterns. Personality aberrations. Behavior aberrations. Character. The meaning of personality. Reference. Index.

Note: A text for the more advanced course in child psychology. Full bibliography. The author's *Manual of child psychology*, New York: The Macmillan Company, 1936, 117 p., \$1.00, provides further material on some of the problems and topics discussed in this text, a large number of questions and exercises, and new charts and graphs.

STRANG, RUTH MAY

An introduction to child study. Revised edition. New York: The Macmillan Company, 1938. 681 p. illus. 22 cm. \$3.00. 3182

Contents: Introduction. The roots of behavior: The baby at birth. Heredity influences. Prenatal influences. The early preschool period—the first two years: Development during the first two years. How the baby learns. Special problems of the first two years. How to study the baby. The later preschool period: Years three, four and five: Development during the later preschool period. How preschool children learn. Special problems of the later preschool period. Suggestive family schedule. Study and guidance of preschool children. The primary period: Development during the primary period. How primary children learn. Special problems of the primary period. Studying primary children. From the primary period to the adolescent years: Development in the postprimary-preadolescent period. Learning in the postprimary-preadolescent period. Special problems of the postprimary-preadolescent period. Child study and guidance in the elementary school. The adolescent years: Development and guidance of adolescents. Appendix. Index of subjects. Index of names.

Note: Covering the period from birth through adolescence and written with a minimum of technicalities, this revised edi-

tion provides a practical textbook for courses in child psychology and child study and guidance. It should likewise prove a valuable manual for child psychologists, child specialists, parents, and teachers. The material is arranged according to the various age periods, treating the physical, social, emotional, and mental aspects of the child, with detailed sections on learning and guidance under each age period. To aid the student workbook material in the form of questions, problems, and tests is given at the end of each chapter, followed by a selected bibliography.

TEAGARDEN, FLORENCE MABEL

Child psychology for professional workers. New York: Prentice-Hall, Inc., 1940. 641 p. illus. 23 cm. (Prentice-Hall psychology series; F. A. Moss, editor) \$3.25. 3183

Contents: Heredity. The principles of heredity as applied to the case load. Getting the child into the world. Infancy. The preschool child. Some fundamental physical habits. The child and his home. The child away from his own home. Adoption. The child's emotions. The sex life of the child. The child's intelligence. The child and his school. Behavior difficulties. Psychological and social problems incident to certain diseases of children. Children with visual and auditory handicaps. Speech defective and crippled children. The children's charter. Index.

Note: A textbook adapted to the needs of case workers in social agencies such as social workers, home and school visitors, social workers in training, and public health nurses. Emphasis is upon the mental-hygiene point of view and attention is given to the characteristics of normal as well as abnormal children. The material is based partly upon the author's clinical experience and partly upon the literature of the field. There are long lists of selected references at the end of each chapter.

THOM, DOUGLAS ARMOUR

Child management. Revised edition. Washington, D.C.: Government Printing Office, 1937. 107 p. 22 cm. (United States. Children's Bureau. Bureau publication no. 143) Paper, \$0.10. 3184

Contents (abridged): The parents. The environment. The child. Habits. Feeding. Sex instruction. Rewards and punishments. Stuttering. Fear. Anger. Lying. Stealing. The child during sickness and convalescence. The mentally defective child as a family problem.

Note: The fundamentals of child psychology presented for parents, teachers, and nurses. The revised edition contains a discussion of the psychological background of child training and guidance.

THOM, DOUGLAS ARMOUR

Habit clinics for child guidance. Revised edition. Washington, D.C.: Government Printing Office, 1939. 97 p. 22 cm. (United States. Children's Bureau. Bureau publication no. 135) Paper, \$0.15. 3185

Contents (abridged): Habit-clinic personnel and procedure. The child and his personality. The parent and the home. Habit problems. Resentment toward frustration. Development of the child's sex life. Personality changes following illness and injury. Convulsions, tics, mannerisms. The crippled child. Mental deficiency.

Note: An enlargement of the original edition (1923), outlining methods of psychiatric treatment for preschool children. Intended as a guide for nurses and general practitioners engaged in the operation of habit clinics, the book presents by means of case histories the special types of problems met with and the treatment recommended.

WASHBURN, RUTH WENDELL

Children have their reasons, with an introduction by Dorothy Canfield Fisher. New York: The Appleton-Century Company, Incorporated, 1942. 257 p. illus. 20 cm. \$2.00. 3185a

Contents: Parenthood, first of the professions. Parents and child psychologists in partnership. Successful methods are not ready-made. Disciplinary tools. Children plan too. New babies,

a threat to the security of the older children. Why not eat that dinner? The search for physical satisfactions. Who made me? What happens when I die? To every child his own personality. Learning to live with personality traits. Tests—uses and abuses. Testing very young children. Readiness or maturation. Odds and ends of importance. Toby—six months to nine years. By way of summary and in praise of laughter. Index.

Note: A book for parents. The author's thesis is that children are human beings even though ignorant and inexperienced. Thus, the emphasis is on understanding the child. Visits to the specialist in psychology, psychometric study of the child, preparation of the parent's mind to get the most out of the child—these are some of the topics treated. The book is written for the layman and offers no footnotes, bibliography, or references.

WATSON, MAUD ETHEL

Children and their parents. With an introductory chapter by Marion E. Kenworthy. New York: F. S. Crofts and Company, 1932. 362 p. 23 cm. \$3.75. 3186

Contents (abridged): Part I, The new social philosophy. History taking and interpretation. The case of Caroline—the interpretation of trends. The technique of treatment. The case of David—treatment in process. Part II, A group of case studies: The case of Gerry. The case of Lucy. The case of Peter. The case of Nancy. Evaluation of technique. Selected bibliography.

Note: This book which is an outgrowth of the author's experience for a number of years with the Neuro-Psychiatric Clinic of the Out-Patient Department of Harper Hospital, Detroit, summarizes briefly the field of child psychology and psychiatry. The technique used to confront various maladjustments is discussed, and numerous case studies are included.

WHITE HOUSE CONFERENCE ON CHILDREN IN A DEMOCRACY, WASHINGTON, D.C., 1940.

Final report. Washington, D.C.: Government Printing Office, 1942. 392 p. illus. 25 cm. (United States. Children's Bureau. Bureau publication no. 272) \$0.65. 3186a

Contents (abridged): Part I, Backgrounds: The point of view. The children of America—numbers and distribution. The American setting. Children in minority groups. Common needs of all children. Part II, The economics problem: Livelihood. Economic assistance. Part III, Services: Education; the schools; religion; leisure-time services; libraries. Employment. Social services for children. Health. Dwellings. Government and administration. Part IV, Recommendations. Appendixes.

Note: A summary of the facts and conditions about many phases of child life in America, presenting a unified picture of the life and growth of America as related to its children. The recommendations approved and adopted at the Conference by the White House Committee which was held Jan. 18-20, 1940 are included.

YALE UNIVERSITY. CLINIC OF CHILD DEVELOPMENT

The first five years of life; a guide to the study of the preschool child. Part one, by Arnold Gesell. Part two, by Henry M. Halvorsen, and others. Part three, by Arnold Gesell and Catherine S. Amatruda. New York: Harper & Brothers, 1940. 393 p. illus. 24 cm. \$3.50. 3187

Contents: Part I, Early mental growth. Introduction: Understanding the preschool child. The nature of mental growth. The first year of life. From one to five. A pictorial survey of preschool behavior. Part II: Gradations of mental growth: Motor development. Adaptive behavior. Language development. Personal-social behavior. Part III, The study of the individual child: The philosophy of the developmental examination. The conduct of the developmental examination. Clinical adaptations to atypical conditions. Individuality and its characterization. Developmental supervision and the school beginner. Examination records and arrangements. Selected references. Index.

Note: A volume, intended for laymen, students, and psychologists, which emphasizes the organic continuity of development of the child. Intelligence is treated as an aspect of an intricate reaction system. A great many clinical data are cited, and behavior pattern descriptions are given.

Psychology of Adolescence

ABEL, THEODORA MEAD, AND ELAINE F. KINDER

136.76 The subnormal adolescent girl. New York: Columbia University Press, 1942. 215 p. 22 cm. \$2.50. 3188

Contents: The subnormal adolescent girl. Within her home. At school. In industry. In an institution. The seriously mal-adjusted girl. The community's problem. Origins and control. Bibliography. Index.

Note: A presentation, from the viewpoint of psychology and sociology, of the difficulties which a teen-age girl of subnormal mental development encounters in her home, in a school, or at the factory, including the problems of the adolescent subnormal girl who has failed to become adjusted as a member of the community and has been committed to an institution for the mentally deficient. Illustrated with excerpts from case histories.

ARLITT, ADA HART

136.7 Adolescent psychology. New York: American Book Company, 1933. 250 p. illus. 20 cm. \$2.50. 3189

Contents: Introduction. Physical changes at adolescence. Instinctive tendencies. Emotional life at adolescence. Adolescent escape and defense mechanisms. Emotional maturing. Learning at adolescence. Memory and reasoning. Intelligence and mental growth. Personality. Disturbances in adolescent personality. Moral and religious development at adolescence. The hygiene of adolescence. Glossary. Index.

Note: A textbook for students in colleges and teachers colleges, and a discussion for educators. Use is made of material derived from contact with parent groups, researches in the summer-camp field, and case studies of psychopathic and neurotic older children. This material is employed to develop an understanding of both the normal and the atypical adolescent. Escape and defense mechanisms and other emotional maladjustments are carefully treated. The material is both interpretative and therapeutic.

BELL, HOWARD MITCHELL

362.7 Youth tell their story; a study of the conditions and attitudes of young people in Maryland between the ages of 16 and 24, conducted for the American Youth Commission. Washington, D.C.: American Council on Education, 1938. 273 p. illus. 26 cm. Paper, \$1.50. 3189a

Contents: Introduction. National implications of the Maryland data. Youth and the home. Youth and the school. Youth at work. Youth at play. Youth and the church. Attitudes. Appendix: Basic totals for the primary groups of youth interviewed. List of tables. List of figures. List of pictorial graphs. Maryland youth survey schedule.

Note: A study, based on data obtained by interviewing 13,528 young people, of youthful opinion on current social and economic matters. The questionnaire used as a basis for the interviews is included in the book. Persons with many types of cultural backgrounds were chosen for interviewing in the hope that the opinions and attitudes found would be typical of youth all over the United States. The data are represented in many tables and graphs and are also discussed at length.

BLOS, PETER

136.7 The adolescent personality; a study of individual behavior. New York: D. Appleton-Century Company, Incorporated, 1941. 517 p. 22 cm. (Progressive Education Association publications. Study of Adolescents) \$3.25. 3190

Note: The special significance and usefulness of this book rest in its use of four detailed and complete case histories of children of different socio-economic and educational levels as

mediums for a study of normal adolescent behavior. On the basis of the first two cases and many illustrations from other cases, all of them collected by the Study of Adolescents, the author develops a theory of adolescent personality, which he then tests on the remaining two cases. Finally, he applies the knowledge of adolescence thus gained to educational problems. The book is valuable for college, university, and normal school courses in adolescent psychology, mental hygiene, guidance, and child development.

COLE, LUELLA

Psychology of adolescence. Revised edition. New York: Farrar & Rinehart, Inc., 1942. 660 p. illus. 21 cm. \$3.25. 3191

Contents: The problems of adolescence. Bodily growth. Health and hygiene. Emotional growth. Emotions and the school. Emotional deviates. Social growth. The social life of the school. The adolescent and his home. Delinquency. Growth in attitudes and behavior. Community influences. Mental growth. Intellectual-cultural interests. Intellectual deviates. Choice of a vocation. The high school curriculum. The end of adolescence. Appendix: Books containing good case histories; List of novels. Index.

Note: This book, primarily for use in college courses, presents a comprehensive picture of the adolescent years. It contains many pertinent case studies which should enable teachers to transfer the principles of adolescent psychology to their everyday procedures in the classroom. A selected bibliography appears at the end of each chapter. Principal changes in this edition are: experimental data have been revised, the sections on social development and on vocational choice have been expanded, case studies have been revised, and case histories increased in number.

CONKLIN, EDMUND SMITH

Principles of adolescent psychology. New York: H. Holt and Company, 1935. 437 p. 22 cm. \$3.25. 3192

Contents (abridged): Introduction. Physical maturation and its effects. Sex differences. Interests of adolescence. Ideals. Factors in social adjustment. Effects of the social conflict. Influences of the family. Romantic love. Religious adjustment. Faults, misdemeanors and delinquency. Special delinquency problems. Abnormalities of personality organization and adjustment. Index.

Note: A well organized modern discussion of adolescent psychology. It is based upon scholarly research and a wide personal experience in dealing with adolescent problems, which are viewed as a phase in the growth of personality or the distortion of such growth.

DIMOCK, HEDLEY SELDON

Rediscovering the adolescent; a study of personality development in adolescent boys. With a foreword by Hugh S. Hartshorne, pictographs by Harold E. Haydon. New York: Association Press, 1937. 287 p. illus. 22 cm. \$2.75. 3192a

Contents: Introduction: Science in search of the adolescent. The adolescent expands his world. The play pursuit of the adolescent. Adolescent personality and behavior. The adolescent chooses friends. The adolescent seeks status: i. The adolescent seeks status. ii. Adolescent emancipation from parents. Moral and religious thinking in adolescence. The adolescent forms groups: i. The adolescent forms groups: ii. Puberty: at what age and why? Pubescence and physical growth. Toward an understanding of the adolescent.

Note: The author's three general purposes were to present a factual picture of the major physiological, physical, social, and personal characteristics of adolescent boys; ascertain as accurately as possible the specific changes that take place in certain phases of life during the adolescent years; explain individual and group variations in physical and psychological development. An interesting sidelight is the author's observations as to what extent the developments that take place during adolescence follow or accompany the physiological changes associated with puberty. Two hundred boys between 13 and 14 years of age, residing in Milwaukee and Kenosha, Wisconsin, were selected for study without regard to their intelligence quotients or religious backgrounds. Young Men's Christian Association collected the essential data over a two-year period. This book is designed primarily for those persons who are working with or teaching adolescents. It consists mainly of interpretation and discussion.

DOANE, DONALD CALVIN

370 The needs of youth; an evaluation for curriculum purposes. New York: Bureau of Publications, Teachers College, Columbia University, 1942. 150 p. illus. 23 cm. (Teachers College, Columbia University. Contributions to education. No. 848). \$2.10. 3192b

Contents (abridged): Introduction: A classification of needs. Review of literature on youth's needs and problems: Studies concerned with needs as shortcomings of society. Studies concerned with predicated needs. Psycho-biological needs: general studies; studies primarily concerned with youth's expressed concerns, desires, etc.; studies primarily concerned with adjustment problems. Conclusions. Needs and the curriculum: Why people do things. Psycho-biological needs vs. means of satisfaction. Relative intensity of a need. Influence of background of writer. Requirements of a study of psycho-biological needs. Method of present study: Selection of areas for study. Trial form of, final form of, distribution of, and administration of inventories. Responses to the inventory: Statistical treatments employed. Description of charts. Responses to areas in inventory: Sex, health, finances, morals, religion, government, music, literature, sciences, etc. Influence of background of respondent. Summary of responses to inventory. Summary and conclusions. Bibliography. Appendix.

Note: This book examines the various meanings of need and the relationship of these meanings to the curriculum of secondary schools. It also reviews some representative statements of the needs of youth and the more commonly mentioned ones are investigated to obtain some relative measure of their motivational possibilities, in and of themselves, and therefore of their suitability as focal points for instruction or organization of the curriculum. Also developed is the thought that a major function of education is to create new motivational possibilities by directing and building interests from these and other psychologically adequate starting points. This investigation reports a group of 2,069 high school youth in widely separated parts of the country who were given an opportunity to express opinions regarding a large number of topics and areas representing commonly mentioned needs. The volume contains many charts showing interest or lack of interest on the part of youth in these needs.

ESPENSCHADE, ANNA SCHOLL

Motor performance in adolescence including the study of relationships with measures of physical growth and maturity. Washington, D.C.: Society for Research in Child Development, National Research Council, 1940. 126 p. illus. 23 cm. (Society for Research in Child Development. Monographs. Vol. v, no. 1. Serial no. 24) Paper, \$1.00. 3192c

Contents: Part I, The data: Introduction. Selection and administration of tests. Analysis of data. Part II, Interrelationships: Interrelationships of motor functions. Motor performance as a function of age and sex. Motor performance as a function of physical maturity. Comparison of groups selected for superior and inferior motor performance. The consistency of motor performance: selected cases.

Note: The study measures at half-year intervals during adolescence certain motor functions "to investigate the relations of these functions *inter se* and with measures of physical and physiological development, and to note sex differences and changes in performance with growth and maturity."

GARRISON, KARL CLAUDIUS

1367 The psychology of adolescence. Revised edition. New York: Prentice-Hall, Inc., 1940. 477 p. illus. 21 cm. (Prentice-Hall psychology series; F. A. Moss, editor) \$4.00. 3193

Contents: Part I, The development of the individual: The adolescent age. Physical development of the adolescent. Mental development of the adolescent. Adolescent motivation. Social development of adolescents. Adolescent interests. The projection of adolescent interests. Moral and religious growth. Achieving independence. Part II, Personality development: The adolescent personality. Adolescent personality problems. Mental disturbances of adolescents. The hygiene of adolescence. Juvenile delinquency.

Guidance and control. Preparing the adolescent for the world of tomorrow. Appendix. Bibliography. Index.

Note: A textbook for college courses which treats problems that are of special significance to college students who are still in the latter stage of adolescence, particularly problems of personality development. A secondary aim of the book is to introduce the student to basic experimental studies and thus lay the foundation for a critical appreciation of the current literature of the field. The revised edition contains new material relative to youth problems, religious development, and the achievement of independence. Questions and reading references appear at the end of each chapter. The work is intended also as a guide for parents and teachers entrusted with the care of adolescents.

JONES, HAROLD ELLIS

Development in adolescence. Approaches to the study of the individual. New York: D. Appleton-Century Company, Incorporated, 1943. 166 p. illus. 21 cm. (The Century psychology series; R. M. Elliott, editor) \$2.00. 3194

Contents: Here John was at home. Into adolescence. John as seen by his teachers and classmates. John as a member of social groups. Physical development. Motor and mental abilities. Interests and attitudes. An interpretive study of some "underlying tendencies." John as he saw himself. The struggle for maturity. Index.

Note: An extended case history of adolescence based on records obtained for a single individual over a period of seven years. The person called John was selected from a grade-group of urban public school children. The growth study, continuing to the end of senior high school, includes physical and physiological measurements and records of various aspects of behavioral development during adolescence, with emphasis on this particular individual's handicaps and adjustments. The research on which the book is based was done at the Institute of Child Welfare at the University of California.

MEAD, MARGARET

From the South Seas; studies of adolescence and sex in primitive societies. New York: William Morrow & Company, 1939. 1088 p. 21 cm. \$4.00. 3195

Contents (abridged): Coming of age in Samoa: The education of the Samoan child. The Samoan household. The girl and her age group. Formal sex relations. The role of the dance. The attitude towards personality. The experience and individuality of the average girl. Maturity and old age. Our educational problems in the light of Samoan contrasts. Appendix. Index and glossary. Growing up in New Guinea: Scenes from Manus life. Early education. The family life. The child and the adult social life. The child and the supernatural. The development of personality. Manus attitudes toward sex. The adolescent girl. The adolescent boy. Bequeathing our tradition graciously. Education and personality. The child's dependence upon tradition. Appendixes. Index and glossary. Sex and temperament in three primitive societies: The mountain-dwelling Arapesh. The river-dwelling Mundugumor. The lake-dwelling Tchambuli. The implication of these results. Index and glossary.

Note: This book combines three of the author's books in one volume and constitutes a series of studies of primitive peoples in the South Seas made consecutively from 1925 to 1933, approached from the view-point of special age groups. In *Coming of age in Samoa*, New York, 1928, the author specializes on the adolescent girl; in *Growing up in New Guinea*, New York, 1930, the pre-adolescent age group is studied; and in *Sex and temperament*, New York, 1935, a special study is made of the pre-school age as well as the final character forms shown by the mature men and women. All of the details of behavior are based upon the author's personal observations and impressions during three separate field trips, and in this sense the work is a pioneer study. A new preface written in 1939 presents a summary of the author's aim and method with reference to the three studies contained in this volume.

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

The forty-third yearbook. Part I: Adolescence; prepared by the Society's committee: Harold E.

Jones (chairman), Reginald Bell, Frank N. Freeman, W. W. Greulich, Gordon N. Mackenzie, Mark A. May, and Daniel A. Prescott. Edited by Nelson B. Henry. Chicago: Distributed by the Department of Education, University of Chicago, 1944. 358 p. illus. 24 cm. Paper, \$2.25; cloth, \$3.00. 3195a

Contents: Introduction, Adolescence as a period of transition, by Lawrence K. Frank. Section I, Physical and physiological changes in adolescence: Physical changes in adolescence, by W. W. Greulich. Adolescent changes in body build, by Nancy Bayley and Read D. Tuddenham. Physiological changes in adolescence, by Nathan W. Shock. Adolescent problems related to somatic variations, by Herbert R. Stolz and Lois Meek Stolz. Section II, Physical, motor, and mental abilities: The development of physical abilities, by Harold E. Jones. The development of fine motor and mechanical abilities, by Harold E. Jones and Robert H. Seashore. Mental development in adolescence, by Harold E. Jones and Herbert S. Conrad. Differential mental growth, by Frank N. Freeman, Herbert S. Conrad and Harold E. Jones. Section III, The adolescent and the social order: The adolescent in technological society, by Newton Edwards. Socialization and adolescent personality, by Allison Davis. The adolescent peer culture, by Caroline M. Tryon. The adolescent and the family, by Lawrence K. Frank. The development of interest in vocations, by Harold D. Carter. Section IV, Educational implications: Implications for educational administration, by Stephen M. Corey. Implications for teachers and counselors, by Gordon N. Mackenzie. Preparing youth to be adults, by Caroline B. Zichry. Section V, Contribution of this yearbook to the literature on adolescence: An evolution of the yearbook, by George D. Stoddard. Index.

Note: The papers in this volume summarize recent research and state concisely our present knowledge of various phases of adolescence, point out the relationships among the findings of many specialized studies and interpret their significance both from the special viewpoint of education and the larger viewpoint of the adolescents' adjustments to society. Most of the papers are accompanied by extensive bibliographies.

PARTRIDGE, ERNEST DEALTON

Social psychology of adolescence. New York: Prentice-Hall, Inc., 1938. 361 p. illus. 21 cm. (Prentice-Hall psychology series, F. A. Moss, editor) \$2.75. 3196

Contents: Preface. Introduction: Young people in America. Approaches to adolescent behavior. The nature of the individual. The social implications of individual differences. The nature of the informal group. The influence of adolescent leaders. How the group influences the individual. Relationships between the sexes. Young people in the family. The adolescent and leisure time. The adolescent and the community. The adolescent and the educational process. The social psychology of delinquency. The social approach to behavior difficulties. Index.

Note: A textbook for college students and for persons engaged in work with young people. The whole field of social psychology is not treated, but references to further information on the subject are provided. An attempt is made to analyze the social setting of agencies dealing with young people.

SMITHIES, ELSIE MAY

Case studies of normal adolescent girls. New York: D. Appleton and Company, 1933. 284 p. illus. 19 cm. \$2.25. 3197

Contents: The technique of case work. Self-distrust: The case of Gretchen Kreutz. The superior student: The case of Katherine Duncan. Physical disability: The case of Georgia Ewald. Exhibitionism: The case of Clara Rombi. Volitional retardation: The case of Marian Mitchell. Depression: The case of Gertrude Turner. Insecurity: The case of Lillian Page. Environmental pressure: The case of Alice Warren. Parental dominance: The case of Betty Roberts. Shame: The case of Susan Johnson. Inferiority fear: The case of Florence Schilling. Our most common problems. Bibliography. Index.

Note: This detailed report and discussion of the cases of twelve temporarily maladjusted high school girls not only illustrates typical problems of adolescent psychology with which teachers and parents are confronted but also describes the technique for dealing with these and similar problems.

TAYLOR, KATHARINE (WHITESIDE)

Do adolescents need parents? For the Commission on Human Relations. A publication of the Progressive Education Association. New York: D. Appleton-Century Co., Incorporated, 1938. 380 p. 21 cm. \$2.50. 3197a

Contents: Preface, by Alice V. Keliher. The parent's role: Parents are still wanted. Enemies or friends? Parents are also people. Understanding. Affection with freedom. Adolescent needs: Experiences on their own. Making friends. Standards to live by. A living religion. Finding work. Finding love. A home of their own. Classified bibliography on topics of especial interest to parents and adolescents. Bibliography of sources used in the text.

Note: The Commission on Human Relations presents this book to help parents and children understand their relationship as it affects all of society. The author definitely believes that adolescents do need parents but suggests important revisions in popular notions of when, where, and in what way this is true. The classified bibliography consists of approximately 270 references and the bibliography of sources used in the text lists 114 references.

THOM, DOUGLAS ARMOUR

Guiding the adolescent. Washington, D.C.: Government Printing Office, 1933. 94 p. 22 cm. (United States Children's Bureau. Bureau publication no. 225) Paper, \$0.10. 3198

Contents (abridged): Physical growth and development. Attitudes toward sex. Adolescent and mental development. The individual as a whole. Learning to use leisure. A social conduct. Evading reality. The adolescent and his companions. The needs of the parent. Bibliography.

Note: A discussion of the problems accompanying the growing-up process during the years 12 to 20, intended to help parents understand and guide the adolescent to health and happy adulthood.

WHITE HOUSE CONFERENCE ON CHILD HEALTH AND PROTECTION

The adolescent in the family; a study of personality development in the home environment. Report of the Sub-committee on the Function of Home Activities in the Education of the Child, E. W. Burgess, chairman. New York: D. Appleton-Century Company, 1934. 473 p. 23 cm. \$3.00. 3198a

Contents: Part I, A comparison of white American, Negro and immigrant children: Introduction. Rural and village children. The urban white child of American parents. The Negro child. The immigrant child. American children, a summary. Part II, Personality of the child and family background: Status of the family. Broken homes. The child and his parents. Family activities, celebrations and recreation. Health regulations. Sex education. Delinquent children. Order of birth and personality development. Types of successful and unsuccessful families. Parent-child relations and family education. Recommendations. Appendixes: Comparative tables. Discussion of method. Index.

Note: Data from 13,000 school children in answer to two questionnaires were used as a basis for this report on the present-day American home as an environment for child development.

WILLOUGHBY, RAYMOND ROYCE

Sexuality in the second decade. Washington, D.C.: Society for Research in Child Development, National Research Council, 1937. 57 p. illus. 23 cm. (Society for Research in Child Development. Monographs. Vol. II, no. 3. Serial no. 10) \$0.75. 3198b

Contents: Introduction. Implicit sexuality. Autosexuality. Para- and homosexuality. Heterosexuality. Conclusion. Bibliography.

Note: A critical summary of previously published literature on sex in the adolescent years. Data from 114 books and articles on the subjects listed in the contents are compared.

ZACHRY, CAROLINE BEAUMONT, AND MARGARET LIGHTY

136.7
Emotion and conduct in adolescence. New York: D. Appleton-Century Company, Incorporated, 1940. 563 p. 22 cm. (Progressive Education Association publications. Commission on Secondary School Curriculum. Study of adolescents) \$3.25. 3199

Contents: Education and the adolescent's tasks of life adjustment. Part I, Changing attitudes to the self: Changing body and changing self. Differing influences upon boy and girl. Development in sex differentiation. Influences upon development of ethical standards. Adaptation to standards of conduct. Education and changing attitudes to the self. Part II, Changing personal relationships: Influences upon development in personal relationships. Changing relationships with adults. Changing relationships with peers. Education and changing personal relationships. Part III, Changing attitudes to basic social institutions: Approaching a vocation. Approaching citizenship and marriage. Education and the approach to adulthood. Selected readings. Index.

Note: Tasks of life adjustment with which the adolescent must cope are discussed in the three parts of this book in the light of interacting personal and cultural demands and with the interests of educators particularly in mind. This significant contribution to the understanding of the adolescent is based upon a five-year study. Much of the material collected during the study—case histories, quoted opinions, etc.—is incorporated in the book by way of illustration.

Psychological Testing

ARTHUR, MARY GRACE

A point scale of performance tests. Volume I, Clinical manual; second edition (revised). Volume II, The process of standardization. New York: The Commonwealth Fund, 1933-43. 2 v. illus. 24 cm. \$1.50 per volume. 3199a

Note: This manual makes available a method of selecting and combining the commonly used performance tests into point scales useful for clinical work. The 1943 revision of volume I, of which the original edition was published in 1930, clarifies instructions for specific tests and incorporates new material on the usefulness of the scale for testing pupils in the Indian schools of the United States, on results obtained in testing the deaf, and on the use of tests in cases of "congenital word blindness." New norms are presented, and form II and certain tests have been omitted. Volume II gives an account of the original work of standardization.

BENNETT, GEORGE K., AND RUTH M. CRUIKSHANK

136
A summary of manual and mechanical ability tests. New York: The Psychological Corporation, 1942. 80 p. 23 cm. Paper, \$0.50. 3199b

Contents: Introduction. General description of tests of mechanical ability. Problems in the measurement of mechanical ability. Prediction of vocational success as related to tests of mechanical and manual ability. Manual and mechanical tests in vocational selection. Test summaries. Annotated titles of other related tests. References. Index.

Note: This pamphlet has as its purpose the objective description of available tests of mechanical aptitude or ability and the summarization of their application to various types of selection and guidance situations. It is intended especially for the use of teachers and others counselling students who wish to prepare for or enter suitable employment, for those engaged in personnel selection in industry, and for research workers interested in the analysis of human abilities.

BINGHAM, WALTER VAN DYKE

✓ Aptitudes and aptitude testing. New York: Published for the National Occupational Conference by Harper and Brothers, 1937. 390 p. 24 cm. \$3.00. 3200

Contents (abridged): Part I, Aptitudes and guidance. Part II, Orientation within the world of work. Part III, The practice of testing.

Note: This book has been written primarily for those in or out of schools whose business is to help inquirers to plan their training and later their occupational advancement. The book treats first of all of what aptitudes are and how a person may recognize his own possibilities. Much is said about the theory and practice of testing. The book contains many tables.

CATTELL, PSYCHE

The measurement of intelligence of infants and young children. New York: The Psychological Corporation, 1940. 274 p. illus. 23 cm. \$3.00. 3201

Contents: Introduction. Statistical evaluation. General instructions for administering infant tests. Instructions for giving and scoring the tests. Index.

Note: The psychometric examinations upon which this work has been based were part of a series of observations of children enrolled from birth for continuing and comprehensive study by the Department of Child Hygiene of the Harvard School of Public Health. A uniform testing program, applicable to the years under study and comparable with the revised Stanford-Binet test adapted for older children, was devised by the author and is presented here in summary form, known as the developmental and intelligence scale. The scale runs from two months to thirty months, but has been so constructed as to constitute an extension downward of Form L of the Stanford-Binet tests. Procedure, time limits, range of the examination, scoring, and other related matters are discussed in connection with each of the tests described, most of which are illustrated by photographs.

EBERT, ELIZABETH, AND KATHERINE SIMMONS

The Brush Foundation study of child growth and development. I. Psychometric tests. Washington, D.C.: Society for Research in Child Development, National Research Council, 1943. 113 p. illus. 23 cm. (Society for Research in Child Development. Monographs. Vol. VIII, no. 2. Serial no. 35) Paper, \$1.50. 3201a

Contents: Foreword, by William Walter Greulich. Introduction. Section I, Intelligence test constancy: 'Cross-sectional' data. Longitudinal group, 3 to 10 years. Longitudinal group, 9 to 14 years. References. Section II, The performance tests: Constancy of scores. Interrelationships among the performance tests and correlations with the Stanford-Binet. Conclusions from the correlation data. Individual test profiles: trend of the performance record compared with that of the Stanford-Binet. Section III, The prediction of scholastic achievement by earlier psychometric tests: Correlations between achievement test scores and earlier psychometric test scores. Summary. Section IV, Sibling resemblance: Sibling correlations in intelligence. Mental growth patterns of twins and ordinary siblings. Section V, Summary of Minnesota mechanical assembly and Porteus maze test data. Appendix: The Kent-Shakow industrial and form board series: administration, scoring, and norms.

Note: This publication reports the results of a study in administration of various psychometric tests to children over a period of years. The subjects were "Regular Series children" of the Brush Foundation child study program, a selected group of children who were measured and tested from infancy through adolescence. Various intelligence tests and performance tests were used. A report on another phase of the same study appears in *The Brush Foundation study of child growth and development. II. Physical growth and development*, by Katherine Simmons (see Index).

FREEMAN, FRANK NUGENT, AND CHARLES D. FLORY

Growth in intellectual ability as measured by repeated tests. Washington, D.C.: Society for Research in Child Development, National Research Council, 1937. 116 p. illus. 23 cm. (Society for Research in Child Development. Monographs. Vol. II, no. 2. Serial no. 9) Paper, \$1.00. 3201b

Contents: Introduction. Methods employed in the study: The selection of the tests. Subjects used in the study. The testing program. Method of giving the tests. Scoring the tests. Limitations of the study. Reliability and validity of the tests. Reliability of the VACO tests. Reliability of the results of different examiners. Correlation with other mental tests. Intellectual growth as indicated by composite growth curves: General problems. The composite growth curve. Annual increments. Variability. Sex differences. Intellectual growth as indicated by age runs: Composite curves in age runs. Individual differences in intellectual growth: Individual growth curves for pupils with long records. Some selected growth curves. Curves of groups of pupils with long records. Relation of intellectual and physical growth. Development at the college level: The end points in intellectual growth. Obtaining subjects at the college level. Growth at the college level. Individual growth curves of four subjects tested while in college. Summary and interpretation: The method. The problems. The general or average curve of intellectual growth. The age of intellectual maturity. Sex differences. Individual differences. Changes in variability. Growth at different levels of ability. The factors in intellectual growth.

Note: This study used as data the results of tests given annually to the same children over a ten-year period. The children were 469 pupils in the Laboratory Schools of the University of Chicago. The authors conclude that continued experiments to measure rapidity and limits of learning at various ages should make it possible to more nearly determine the course of development of intellectual growth due to the factor of maturation rather than education.

✓ FREEMAN, FRANK NUGENT

Mental tests; their history, principles and applications. Revised edition. Boston: Houghton Mifflin Company, 1939. 460 p. illus. 22 cm. (Riverside textbooks in education, edited by E. P. Cubberley) \$2.75. 3201c

Contents: Introduction: present status, meaning, and fields of application of mental tests. Early experimentation with tests. The application of the correlation method. Age scales: The Binet scales and their revisions. The early development of point scales. Survey of point scales. Tests for the analysis of mental capacity. Tests of personality traits. Technique and theory of mental tests: Subject matter of tests and related problems. Problems relating to the selection and organization of the items of a test. Problems relating to scores and norms. How to tabulate the results of tests. Basic facts underlying the educational uses of tests. The educational uses of tests. Interpretation of mental tests. The nature of ability. Index.

Note: The author has revised and rewritten much of the first edition of this book, published in 1926. The general plan of organization is the same: early chapters present an historical account of the development of mental tests; the middle chapters discuss the technique of testing and the interpretation of the scores; the concluding chapters discuss the application and interpretation of tests. No one point of view is taken exclusively but an attempt is made to present fairly the facts concerning mental tests. Tests of other forms of ability than intelligence are included.

✓ FRYER, DOUGLAS

The measurement of interests in relation to human adjustment. With an introduction by Lewis M. Terman. New York: Henry Holt and Company, 1931. 488 p. illus. 22 cm. \$3.60. 3202

Contents: Subjective interests. Estimating subjective interests. The standardization of the general interest inventories. Group interests. The development of vocational interests in the individual. The relation of vocational interests to abilities. Educational interests. Objective interests. The measurement of interest. The individual's interests. The clinical examination of interests. Appendix: Historical sketch of interest in education and industry. Subjective interest (historical). Hubbard's scoring key. The Minnesota scoring key. Women's occupational groups. Author index. Subject index. List of figures. List of interest histories. List of tables. Interest measures described in the text.

Note: A summary of all that has been done in the measurement of human interest up to 1930, containing an analysis of the psychological nature of interest, the results of various subjective and objective measurements, and the practical uses of interest measurement in human adjustment.

✓ GREENE, EDWARD BARROWS

Measurements of human behavior. New

York: The Odyssey Press, 1941. 777 p. illus. 22 cm. \$3.75. 3203

Contents: Part I, Basic considerations: Introduction. Varieties of appraisals. The interpretation of scores. Measures of relationship. Measuring instruments. Construction and evaluation of test terms. Factorial analyses. Part II, Instruments and results: Tests of early childhood. Measures of achievement. Binet-type scales. Group intelligence tests. Performance, mechanical, and motor tests. Measurements in fine arts: Design, literature and music. Academic and vocational interests. Appraisal of attitudes. Modes of adjustment: Free association and inventories. Measures, observations, and laboratory methods. Evaluation of methods and results. Part III, Persistent problems: Effects of practice on test scores. Measurement of growth and senescence. Standard deviation of absolute scaling. The evaluation of judgments. Measurement of native differences. Bibliography. Index.

Note: A text for college students preparing for work in medicine, journalism, education, industrial relations, social work, or applied psychology. It presents a comprehensive treatment of behavioral measurement techniques and procedures based on the literature of the field. Typical measuring instruments and tests are described, illustrated, and related to practical applications. Emphasis is placed upon the correct interpretation of measurements and the differences between adequate and inadequate practices are constantly pointed out. Norms for various age or occupational groups are given but the reader is referred to primary sources for systematic discussion of the uses of tests in industry, schools, and clinics. A distinctive feature is the discussion given to the methods and results of factorial analyses, covering the logic without reference to the mathematics of factorial solutions. The bibliography lists approximately 800 references to world literature.

GUILFORD, JOY PAUL

Psychometric methods. New York: McGraw-Hill Book Company, Inc., 1936. 566 p. illus. 23 cm. (McGraw-Hill publications in psychology, J. F. Dashiell, consulting editor) \$4.50. 3204

Contents: General introduction to mental measurement. Part I, Psychophysical methods: The method of average error (method of reproduction). Properties of the normal distribution curve. The method of minimal changes (method of limits). Equal-appearing intervals. The constant methods. Part II, Psychological scaling methods: The method of paired comparisons. The method of rank order (order of merit method). Rating scale methods. Part III, Correlation and test methods: The elements of curve fitting. Simple correlation methods. Multiple and partial correlation. Mental-test methods. Factor analysis. Appendix—tables.

Note: Gives a unified statistical foundation to mental tests and psychophysics in an effort to teach the student of psychology how to deal effectively and intelligently with quantitative data. The book introduces statistical methods as applied to experimental psychology, the psychophysical methods, the psychological scaling devices, correlational analysis and the statistics of mental tests, including the elements of factor analysis.

HILDRETH, GERTRUDE HOWELL

A bibliography of mental tests and rating scales. Second edition. New York: The Psychological Corporation, 1939. 295 p. 23 cm. \$4.00. 3205

Contents: Mental tests and rating scales for infants, nursery school and kindergarten children: behavior and development inventories. Mental ability and scholastic aptitude tests for elementary school children (ages approximately 6-14). Mental ability and scholastic aptitude tests for high school students (ages approximately 14-18). Mental ability and scholastic aptitude tests, college and adult levels. Professional scholastic aptitude tests. Tests specifically designed for backward, subnormal, and abnormal subjects. Tests for children with sensory defects. Mental ability and aptitude tests, general and unclassified. Tests of teaching ability and ratings of teachers. Separate tests of specific mental abilities. Performance tests, form boards and mazes. Psycho-motor tests and apparatus. Achievement and educational tests. Fine arts. Character and personality tests. Vocational tests. Environment ratings. Unclassified materials. Indexes.

Note: This unannotated bibliography lists 4,279 books and publications arranged by author under each of the main headings indicated in the table of contents above, with further subclassification within some of the larger groups. Although the earliest tests mentioned in this work antedate the present century, the majority of the references included have appeared since 1920.

The aim has been to present a comprehensive list rather than a selective one based on comparative merit. Material which was almost wholly subjective in character has been omitted. European and Russian works are included. The second edition incorporates new tests and rating scales published between 1933 and 1938. A supplement listing material published from 1939 through 1944 is scheduled for publication in 1945.

✓ McNEMAR, QUINN

The revision of the Stanford-Binet scale; an analysis of the standardization data. With an introductory chapter by Lewis M. Terman. Boston: Houghton Mifflin Company, 1942. 189 p. illus. 21 cm. \$3.00. 3207

Contents: The revision procedures, by Lewis M. Terman. On the distribution of I.Q.'s. Analysis by age-grade. Urban-rural, occupational, and sibling relationships. Sex differences. Data on reliability. Spread of individual performances. Per cents passing items by age. Factor analyses. Special scales. Units of measurement. Summary. Appendixes. Index.

Note: Closely related to Terman and Merrill's *Measuring intelligence*, Boston, 1937 (see Index), this volume presents an analysis of the new revision of the Stanford-Binet 1916 scale as contained in that work. The present author gives a statistical summary of certain data pertaining to the scales as a whole and to detailed items and results obtained by the use of the two alternative scales. There are 54 tables of statistical data.

NELSON, JANET (FOWLER)

Personality and intelligence. A study of some responses other than intellectual, noted in a simple mental test situation. New York: Bureau of Publications, Teachers College, Columbia University, 1931. 62 p. illus. 23 cm. (Child development monographs, edited by Lois Hayden Meek. No. 4) \$1.60. 3208

Contents: Introduction. Development of method. Plan of main study. Resistance. Persistence. Spontaneous conversation. Spontaneous activity (gross). "Initiative" interest in test materials. Spontaneous use of test materials. Sex differences. Interrelationships existing among the various measures. Individual differences. Summary. Bibliography.

Note: A book for the specialist containing a study of the possibilities of measuring behavior responses of preschool children during simple mental tests. Its purpose is to devise a means of evaluating the spontaneous activity and conversation, incidental to the psychological test situation, of a group of three-year old children. The total psychological test situation is considered from the point of view of the children's responses other than those called for by the test itself and a technique is described for the objective measurement of these reactions.

✓ PINTNER, RUDOLF

Intelligence testing; methods and results. New edition. New York: Henry Holt and Company, 1931. 555 p. illus. 21 cm. \$2.50. 3209

Contents: Part I, Historical and theoretical: Early history of intelligence testing. The work of Binet. The development of intelligence testing after Binet. The concept of general intelligence. Criteria and construction of intelligence tests. Part II, The methods: The scales. Groups tests. Part III, The results: The application of intelligence tests. The pre-school child. The elementary school pupil. The high school pupil. The college student. The soldier. The feeble-minded. The superior. The delinquent. The dependent. The deaf. The blind. The Negro. The foreign-born. The employee. The sexes. The inheritance of intelligence. Miscellaneous. Index of subjects. Index of names. List of illustrations. List of tables.

Note: A comprehensive account of the development of intelligence testing and of the results achieved by it to the date of the book's preparation. Individual and group tests are discussed in detail.

132.1 ROE, ANNE, AND DAVID SHAKOW

Intelligence in mental disorder. New York: New York Academy of Sciences, 1942. 130 p. 162

illus. 23 cm. (New York Academy of Sciences. Annals. Vol. XLII, p. 361-490) Paper, \$1.25. 3209a

Contents (abridged): Data and methods of analysis. Representative and nonrepresentative groups. The diagnostic groups: General paresis. Feeble-mindedness with psychosis. Paranoid dementia praecox. Hebephrenic dementia praecox. Catatonic dementia praecox. Unclassified dementia praecox. Manic-depressive. Psychopathic personality with psychosis. Without psychosis. Summary and conclusions. Representative hospital groups and a normal group. The diagnostic groups. Summary. Vocabulary and general test performance. Variation. Correlations. Comparisons between diagnostic groups. Summary. Comparisons among organic groups, and between an organic and a functional group. Summary. Comparisons of types of dementia praecox. The relative effects of disorder and of non-representativeness on test performance. The effect of mental disorder on intelligence. Summary and conclusions: Representativeness. The nature of the relationship between intelligence and mental disorder. The effect of mental disorder on intelligence. Changes in the various disordered groups. Appendixes. Bibliography.

Note: The study reported in this publication consists of the results of Stanford-Binet (1916) examinations given to 827 patients at the Worcester State Hospital during the years 1929 to 1933, and is concerned with groups rather than with individuals. The attempt is made to determine the general test level of various diagnostic groups and the relative performance of different groups on different types of tests. Comparisons are made with normal groups and with each other.

STODDARD, GEORGE DINSMORE

The meaning of intelligence. New York: The Macmillan Company, 1943. 504 p. illus. 24 cm. \$4.00. 3210

Contents: The nature of intelligence: Attributes and concepts. The physiological basis. The measurement of intelligence: The background of mental testing. Translations and revisions of Binet tests. Point-scales. Factor theories. Growth in intelligence: Characteristics of mental growth. Organic correlates of mental growth. The course of mental growth. Sex differences. Concepts of feeble-mindedness. Concepts of genius. Heredity and environment: Nature-nurture and the IQ. Studies based on the IQ. Intelligence and society: Educational implications. Social implications. Appendix. Index.

Note: This book provides a critique of the modern theories of intelligence as well as the result of the author's own work in this field, and shows the practical implications of these theories to mental testing, guidance, curricular reform, and social progress. The style of writing is simple and direct and there are 40 easily read graphs.

TERMAN, LEWIS MADISON, AND MAUD A. MERRILL

Measuring intelligence; a guide to the administration of the new revised Stanford-Binet tests of intelligence. Boston: Houghton Mifflin Company, 1937. 461 p. illus. 21 cm. (Riverside textbooks in education, edited by E. P. Cubberley) \$2.60. 3211

Contents: Part I, The new revision: Essential features of the revision. Development and standardization of the scales. Statistical analysis of scores. General instructions. Part II, Instructions for administering form L. Part III, Instructions for administering form M. Part IV, Scoring standards for form L. Part V, Scoring standards for form M. Appendix: I.Q. tables. Indexes.

Note: This is the senior author's second revision of the original Binet-Simon scale for measuring intelligence, the first having appeared as the Stanford-Binet scale in Terman's *The measurement of intelligence*, Boston, 1916. The present work presents two new and equivalent scales, each more extensive than the original both in range and in number of tests, and each providing for greater objectivity in scoring, with closer adaptation to American conditions and needs. While the original Stanford revision of the Binet-Simon scale remains as valid as before, the new scales, with their wider range and with the advantages each offers for re-testing by the other and as a safeguard against coaching, present much larger possibilities for usefulness as the standard clinical method for the evaluation of intellectual status and as a tool in psychiatric research. Each form of the present revision contains 129 tests as against 90 for the Stanford-Binet scale of 1916 and 54 for the original Binet-Simon scale.

✓ THORNDIKE, EDWARD LEE, AND OTHERS

Prediction of vocational success, by Edward L. Thorndike, Elsie O. Bregman, Zaida F. Metcalfe [and others]. Institute of Educational Research, Teachers College, Columbia University. New York: The Commonwealth Fund, 1934. 284 p. illus. 24 cm. \$2.50. 3212

Contents: The problem. The facts known about each child at the time of the tests. The facts for eight years or more following the tests. The significance of the early school record and test scores for prediction and guidance. Educational prediction and guidance. Vocational prediction and guidance. Special groups. Some erroneous ideas and practices concerning employment. Summary of results important for the theory and practice of vocational guidance. Appendix. Illustrations. Tables.

Note: This book reports a comprehensive effort to learn what happens in later years to children whose vocational abilities have been estimated by tests in early adolescence. Professor Thorndike and his assistants obtained in 1922 the school records of 2225 children then about 14 years old, gave them psychological and vocational tests, and followed the educational and industrial careers of 1807 of them for ten years to determine the value for vocational prediction or guidance of each fact of school and test records.

THURSTONE, LOUIS LEON, AND THELMA GWINN THURSTONE

Factorial studies of intelligence. Chicago: The University of Chicago Press, 1941. 94 p. illus. 25 cm. (Psychometric monograph series, published for the Psychometric Society. No. 2) Paper, \$1.50. 3213

Contents: Introduction: Purpose of this study. Recent research on the primary mental abilities. Differential description of mental endowment. Construction of the tests. Administration of the tests. Factorial analysis of the sixty tests: The statistical procedures. Interpretation of the factors. A possible second-order general factor. Factorial analysis of the twenty-one tests: The selected battery. Interpretation of the factorial matrix. A second-order general factor. Simple structure in the selected test battery. The problem of invariance in the factor loadings. Description of the tests. Appendix. Index.

Note: A study of a factorial investigation designed to determine whether primary mental abilities could be identified among subjects younger than the college students tested in L. L. Thurstone's *Primary mental abilities*, Chicago, 1938, described below, in this case, eighth-grade children. The study was also arranged to determine the validity of the authors' hypothesis concerning the word-fluency factor. For this purpose, new tests were devised well saturated with this factor and the analysis shows the hypothesis to be well supported by the findings. The tests were administered in 15 Chicago elementary schools to a total of 1154 children. The factorial analyses and the descriptions of the tests are given, and the appendix contains certain of the findings in tabular form.

✓ THURSTONE, LOUIS LEON

Primary mental abilities. Chicago: The University of Chicago Press, 1938. 121 p. illus. 25 cm. (Psychometric monograph no. 1) Paper, \$2.00. 3214

Contents: Preface. The test experiment. Description of the tests. The factorial analysis. Rotation of the orthogonal reference frame. Interpretation of the factors. Individual mental profiles. Appendix. Index.

Note: The purpose of this volume is to present in a relatively non-technical form the nature of the factorial or multiple-factor methods which have been developed primarily for the solution of certain psychological problems and to present the assumptions involved. The fundamental ideas of factor analysis are described in terms of only the simplest mathematical ideas. For a detailed exposition of the factorial methods, involving mathematical treatment of the postulates and theorems, the reader is referred to the author's *The vectors of mind*, Chicago, 1935, described below. The present monograph, which is the first detailed application of the theory of multiple factor analysis presented in the earlier work, analyzes the factorial composition of a battery of 56 tests concerned with mental ability. These tests were given to

volunteer subjects among college students and revealed a number of primary mental abilities, some more clearly defined than others; among them, the verbal factor, the word-fluency factor, the space factor, the number factor, the memory factor, the inductive factor, the deductive factor, the perceptual factor, each of which is described. The 268-page supplement, which contained the tests themselves, is now out of print.

THURSTONE, LOUIS LEON

The vectors of mind; multiple-factor analysis for the isolation of primary traits. Chicago: The University of Chicago Press, 1935. 266 p. illus. 25 cm. (The University of Chicago science series) \$4.00. 3214a

Contents (abridged): Mathematical introduction. The factor problem. The fundamental factor theorem. The centroid method. The principal axes. The special case of rank one. Primary traits. Isolation of primary factors. The positive manifold. Orthogonal transformations. The appraisal of abilities. Appendixes.

Note: This volume is a mathematical exposition of Thurstone's original work, "Multiple factor analysis," in *Psychological review*, Vol. 38, p. 406-427, September, 1931, which extended Spearman's single common-factor methods to any number of dimensions. It describes Thurstone's theory of multiple-analysis by which may be determined: 1, whether primary factors exist in data; 2, the number of primary factors in the data; 3, what those primary factors are. Developed expressly for use by psychologists in isolating unitary mental abilities and traits, the method is also applicable to isolating primary factors in social and political-economic data. Of interest also to statisticians, applied mathematicians, and biologists.

WECHSLER, DAVID

The measurement of adult intelligence. Third edition. Baltimore: The Williams & Wilkins Company, 1944. 258 p. illus. 23 cm. \$3.50. 3215

Contents: Part I, The nature and classification of intelligence: Nature of intelligence. Need for an adult intelligence scale. Concepts of mental age and I.Q. Classification of intelligence. Concept of mental deficiency. The problem of mental determination. Part II, The Bellevue intelligence scales: Selection and description of tests. Population used in standardizing tests. Standardization and results. Limitations and special merits. Diagnostic and clinical features. Part III, Manual of Bellevue intelligence tests. Appendixes. I.Q. tables. Index. 1939

Note: A monograph summarizing the results of the author's tests for adult intelligence developed at Bellevue Psychiatric Hospital, New York, and covering the fundamental problems and concepts, the detailed description of the tests, the diagnoses and results and their interpretation. The third edition includes new material on the clinical applications of the results and new data on mental deterioration, as well as new tables and test data in the appendix.

WEISENBURG, THEODORE HERMAN, AND OTHERS

Adult intelligence; a psychological study of test performances, by Theodore Weisenburg, Anne Roe and Katharine E. McBride. New York: The Commonwealth Fund, 1936. 155 p. illus. 23 cm. \$1.40. 3216

Contents: A critical survey of studies relating to adult intelligence. The selection and composition of the group studied. The tests. Test results. Comparative findings for men and women. Differences in test levels in different age groups. The relationship between various performance levels in the individual case. Correlational findings. Survey of the findings and their significance. Conclusions. Appendix. Bibliography. Index.

Note: This book presents a critical survey of the studies of adult intelligence, and reports the results of extended examinations of a representative group of adults, undertaken for the purpose of securing norms of adult intelligence. The report includes data on the average performance level and the variability in performance for a large number of mental and educational achievement tests, together with facts as to the qualitative characteristics of normal responses.

WOLFLE, DAEL LEE

Factor analysis to 1940. Chicago: The University of Chicago Press, 1940. 69 p. illus. 25 cm.

(Psychometric monograph series, published for the Psychometric Society. No. 3) \$1.25. 3216a

Contents: Preface. Introduction. The basic assumptions and definitions of factor analysis. The chief factorial methods. Interpretation of the factors. The chief results of factor analysis. The limitations of factor analysis. The uses of factor analysis. Bibliography. Index.

Note: A summary of the field of factor analysis to the year 1940, including a bibliography of 530 items on the subject published between 1928 and 1940. The review is intended for a general psychological audience; consequently, mathematical derivations and much technical material have been omitted. The emphasis is on general factor-analysis problems, and the role of factor analysis as a tool for psychological research is presented.

Applied Psychology

BERRIEN, FREDERICK KENNETH

150
B4C9P
Practical psychology. New York: The Macmillan Company, 1944. 584 p. illus. 22 cm. \$4.00. 3217

Contents: Part I, Psychology applied to education: Study efficiency. Psychology and learning. Part II, Psychology applied to mental health: Principles of mental health. Mental hygiene and guidance. Adjustments in old age. Part III, Psychology applied to industry: Employment psychology. Training in industry. Efficiency in production. Morale and rewards for work. Industrial and highway accidents. Part IV, Psychology applied to consumers and advertising: Consumer and advertising research. Advertising. Part V, Psychology applied to crime: Factors contributing to crime. Testimony and the courtroom. Detecting deception. Treatment of offenders. Part VI, Psychology applied to personal problems: Vocational guidance. Effective speaking and writing. Appendix: Simple statistics. References. Index.

Note: A basic text for elementary college courses in applied psychology. Suitable also for business men and others without formal training in psychology.

BURTT, HAROLD ERNEST

245.1
1996L
Legal psychology. New York: Prentice-Hall, Inc., 1931. 467 p. illus. 23 cm. \$3.85. 3218

Contents: Introduction. Errors in sensation and perception. Attention. Memory. Suggestion and hypnotism. Methods of obtaining and evaluating testimony. Problems of the jury and the judge. Confessions. Association reaction and crime. Breathing and crime detection. Blood pressure and minor methods. The mentally disordered criminal. The mentally defective criminal. Predelinquency. Eugenics. Punishment. Drugs. Suggestion and imitation. Education and crime prevention. Trade-mark infringement. Conclusion. Index.

Note: A text and reference work for students of applied psychology as well as for practicing lawyers and law students, presenting a fairly comprehensive survey of the psychological principles which have a bearing on the law and its functioning in criminal cases. The work is based upon a survey of actual cases or the abstracts of law journals, and upon previously published psychological periodicals and law books. The legal form of citation is used and there are additional references to pertinent literature in footnotes. Intended for the student with some psychological background as well as for the lawyer with no formal psychological training.

659.1
BURTT, HAROLD ERNEST

Psychology of advertising. Boston: Houghton Mifflin Company, the Riverside Press, Cambridge, 1938. 473 p. illus. 22 cm. \$3.50. 3219

Contents: The development of psychology in advertising. Methods employed in advertising psychology. The prospect's wants. Suggestion. Instinct and desire. Long-circuit appeals. Which appeal to use. Adapting the appeal to the prospect. Attention and size. Intensity, motion, contrast, and isolation. Position of advertisements. The novel and the comic. Color. Pictures in advertising. Unity, line, and form. Imagery. Typography. Memory and association. Memory devices. Trade marks and trade names. Radio as an advertising medium. Other advertising media. Good will. Conclusions. Appendix. Index.

Note: This book is intended mainly as a text for courses in the psychology of advertising, and although some preliminary instruc-

tion in general psychology is assumed, the work is useful also to the advertising executive, copy-writer, or business man who may not possess a formal knowledge of psychology.

COOPER, ALFRED M.

How to supervise people. New York: McGraw-Hill Book Company, Inc., 1941. 150 p. 19 cm. \$1.75. 3220

Contents: How to become a supervisor. The responsibilities that come with authority. The physical condition of your subordinates. How to develop group morale. The qualities of leadership. This thing called cooperation. Hiring, reprimanding, and firing. When and how to delegate authority. The supervisor as a teacher. Questions for group discussion.

Note: This book was written primarily as a reference book for supervisors employed in factories, public-utility corporations, stores, offices, and public administration. It may be used as a textbook for beginners in the field of administration.

COOPER, ALFRED M.

Supervision of governmental employees. New York: McGraw-Hill Book Company, 1943. 202 p. 19 cm. \$1.75. 3221

Contents: Winning promotion under civil service. Analyzing the supervisor's job. Selecting personnel and maintaining discipline. Health and safety of governmental employees. Unique features of governmental supervision. Developing group morale. Qualities of personal leadership. Cooperation in the governmental organization. Supervisor's responsibility for public attitude. Delegating authority to subordinates. Training subordinates in governmental groups.

Note: This book is a reference book for government supervisors, but may be used as a textbook for beginners in the field of government supervision. Discussion questions at the end of the book may be used as a supplementary text for conference courses in supervision and executive training for government supervisors.

DRAKE, CHARLES ARTHUR

Personnel selection by standard job tests. New York: McGraw-Hill Book Company, Inc., 1942. 147 p. illus. 23 cm. \$2.00. 3222

Contents: Management as a practical art. Backgrounds of job testing. Human abilities and industry's problems. Hand-foot coordination. Inspection. Perception. Dual coordination. A machine-operator test. Some standard job tests. Motor skills and production. Tests and learning ability. Aptitude and skill. Measurement of accident-proneness. How to construct tests. Summary and forecast. Index.

Note: This book describes a new technique which the author has had under development since 1937. The essential principle is the use of performance tests that involve the elements of dexterity and perception, the essential elements being discovered by analyzing the job to be performed.

GRAY, JOHN STANLEY, EDITOR

Psychology in use; a textbook in applied psychology, by J. Stanley Gray, Willard L. Valentine, Edwin E. Ghiselli [and others]. New York: American Book Company, 1941. 663 p. illus. 23 cm. (American psychology series, Henry E. Garrett, general editor) \$3.25. 3223

Contents: Introduction, by J. Stanley Gray. Basic psychological principles, by Willard L. Valentine. How is psychology used in everyday life? by Walter C. Varnum. How is psychology used in clinical practice? by Carl R. Rogers. How is psychology used in student personnel work? by John G. Darley. How is psychology used in home life? by A. S. Jensen. How is psychology used in education? by J. B. Stroud. How is psychology used in industry? by Edwin E. Ghiselli. How is psychology used in business? by Harry W. Hepner. How is psychology used in law and criminology? I, Psychology in law, by Carroll A. Whitmer. II, Psychology in criminology, by G. I. Giardini. How is psychology used in medicine? by Thelma Hunt. How is psychology used in influencing other people? by Ross Stagner. How is psychology used in social reform? by George W. Hartmann. Indexes.

Note: A textbook in applied psychology, written by a group of specialists. Only those fields are treated in which there has been

a significant amount of research. Simplification to make the text understandable by the undergraduate has been attempted, but it is expected that the text will be supplemented by oral explanation. Study questions and selected readings follow each chapter.

GRIFFITH, COLEMAN ROBERTS

An introduction to applied psychology. New York: The Macmillan Company, 1934. 679 p. 22 cm. \$3.60. 3224

Contents (abridged): Psychology in student life. Psychology and social problems. Psychology and law. Psychology and medicine. Psychology and education. Psychology in industry and commerce. Psychology and art. The basic materials of applied psychology. Index of names. Index of subjects.

Note: This is a comprehensive and well organized text for the introductory course in applied psychology. With strict attention to the scientific findings of experimentation and the basic concepts of psychology, the domain of political and social affairs, the hospital, the schoolroom, the criminal court, industry and commerce, and buying and selling are all investigated. Scholarly bibliographies are given at the end of each chapter.

HEPNER, HARRY WALKER

150 Psychology applied to life and work. New York: Prentice-Hall, Inc., 1941. 771 p. illus. 23 cm. \$5.35. 3225

Contents: Part I, Introduction: Why we study psychology. A major objective in the study of psychology. Part II, Personality development and the adjustment concept: Peculiar people. Adjustment by substitute activities. Adjustment by evasion. Adjustment by ailments. Glands and nerves. Methods of treating the maladjusted. Developing your own personality. Part III, Predicting the behavior of the individual: The pseudo-scientific methods of analyzing people. Hiring the worker. Rating and promoting the worker. Choosing a vocation. Part IV, Influencing the behavior of the individual: Getting a job and gaining promotion. Personal efficiency in mental work. Efficiency of the worker. The executive and the individual employee. The salesman and the prospect. Part V, Predicting the behavior of the group: Predictions in marketing. Business cycles. Our social evolution. Part VI, Influencing the behavior of the group: Supervising employees. Supervising women employees. Appeals in advertising. Devices used in advertising. Part VII, Principles of research for the student of applied psychology: How to read reports of psychological researches. Appendix. Index.

Note: An approach to the problem of life and work from the viewpoint of the applied psychologist. The aim is to give the reader those psychological facts and methods which meet his needs as a citizen, professional worker, or business man, and which will enable him to gain a better realization of the methods of interpreting and influencing the behavior of his friends, business associates, and employees. The material is presented in considerable detail, illustrated by case histories and by charts and tables of data. Although intended for the layman the work is on a higher level than the usual "improve your personality" books, and is fully documented. The appendix includes a number of psychological and personality tests for self-evaluation.

HOLLINGWORTH, HARRY LEVI

✓ The psychology of the audience. New York: American Book Company, 1935. 232 p. 20 cm. (American psychology series) \$2.50. 3225a

Contents: Introduction. Preliminary analysis. Types of audiences. A typical situation. Securing an audience. Holding the audience. Impressing the audience. The psychology of persuasion. Directing action. The auditorium. The influence of the audience. Experimental studies of audience effects. The psychology of stage fright. Bibliography.

Note: A book written for teachers of public speaking, clergymen, college students, and lay readers who are interested in public speaking. Each chapter ends with "Practical conclusions" that serve to outline the author's purpose, to demonstrate what an audience expects from a speaker and how the speaker may understand and supply it.

HORST, PAUL, AND OTHERS

1378 8018 The prediction of personal adjustment; a survey of logical problems and research techniques, with illustrative application to problems of voca-

tional selection, school success, marriage, and crime. New York: Social Science Research Council, 1941. 455 p. 22 cm. (Social Science Research Council. Bulletin no. 48) Paper, \$2.00. 3225b

Contents: Part one: Introduction. The prediction problem. The analysis of the activity. The predictive factors. Contingency factors. Reduction of the number of variables. The prediction formula. Preliminary experimentation. Accuracy of prediction. Testing of prediction procedure and revision of hypotheses. Suggestions for research projects in the prediction of individual behavior. References. Memorandum on prediction and national defense. Part two: Supplementary study A: The prediction of individual behavior from case studies, by Paul Wallin. Supplementary study B: Mathematical and tabulation techniques, by Louis Guttman. Supplementary study C: An empirical study in the reduction of the number of variables used in prediction, by Robert B. Reed. Supplementary study D: The combination of measures, by Marion W. Richardson. Supplementary study E: Mathematical contributions, by Paul Horst. Index.

Note: This monograph studies the logic and techniques in the prediction of personal adjustment, with a critical consideration of basic research techniques. A four-page reference list is divided into sections on marriage, criminal recidivism, vocation, and education.

HUSBAND, RICHARD WELLINGTON

Applied psychology. New York: Harper & Brothers, 1934. 654 p. illus. 22 cm. \$3.25. 3226

Contents: Necessity of scientific vocational guidance. Intelligence and vocational guidance. Personality and vocational guidance. Interests and vocational guidance. Problems of personnel. Occupational description; letters of recommendation; application blank. Interview and rating scales. Tests in employment procedures: general abilities; trade aptitudes; validation. Personnel after employment. Personnel research. College personnel problems. Industrial fatigue. Scientific management. Labor relations in industry. Advertising: introduction. Appeals in advertising. Retail salesmanship. Selling outside the store; store management. Psychology, psychiatry, and medicine. Psychology in law. Psychology and athletics. Personal physical efficiency. Efficiency of study. Index.

Note: A discussion of the applications of psychology to the fields of vocational guidance, personnel problems in industry and in college, industrial efficiency and labor management, advertising, salesmanship, law, medicine, and athletics. Selected reading lists follow each chapter.

JENKINS, JOHN GAMEWELL

✓ Psychology in business and industry; an introduction to psychotechnology. New York: John Wiley & Sons, Inc., 1935. 388 p. illus. 20 cm. \$2.50. 3226a

Contents: Introduction to psychotechnology. Psychological problems in industrial selection. Psychological problems in industrial production. Psychological problems in personnel. Psychological problems in industrial distribution. Psychological problems in market research. Index.

Note: Offers an introduction to psychotechnology, giving those psychological techniques directly useful and applicable to business problems. Treatment is limited to a consideration of psychological facts and instruments for which some measurement of dependability is available. In each chapter the various instruments employed by psychologists are considered critically, and the experimental and statistical evidence at hand is sampled to show the general state of the field.

LAIRD, DONALD ANDERSON

✓ The psychology of selecting employees. Third edition. New York: McGraw-Hill Book Company, Inc., 1937. 316 p. illus. 23 cm. \$4.00. 3226b

Contents: Introduction. The field and functions of employment psychology. The extent and nature of individual differences. The origin of individual differences. The letter of application. The interview. Things to observe in the interview. Character reading. The applicant's industrial history. Measuring the success of employees. Measuring personality traits. The use of psycho-

logical tests in selection. The construction and evaluation of tests. The limitations of psychological tests. Watch how the applicant goes about it. Intelligence tests in guiding applicants. Emotional make-up and job adjustment. Interests, special abilities, and education.

Note: A technical account, simplified as much as possible, of the fundamental considerations in selecting employees. The first half of the book constitutes a critical survey of traditional methods; the last half, a description of the scientific methods of selection. Material is brought up to date in the third edition, and alterations were made to make the book more useful to the interviewer and employment manager; in so doing it has probably become less useful to the professional psychologist.

✓ LAIRD, DONALD ANDERSON

The psychology of supervising the working woman, by Donald A. Laird, with the assistance of Eleanor C. Laird. New York: McGraw-Hill Book Company, Inc., 1942. 202 p. illus. 20 cm. \$2.00. 3226c

Contents (abridged): The swinging pendulum. Man-power shortage in the Civil War opened the doors. Money, power, freedom, life, and love. Adjusting work to woman's brain power, strength, fatigue characteristics, muscular control, skeletal proportions, joints, menstrual phenomena. Organic factors underlying woman's emotional life. Striving for completeness the key to woman's emotional life. The problem of getting teamwork from women workers. The problems of crushes and jealousies. The problem of personal appearance. A schedule for checking masculine and feminine traits. Some broader practical implications of feminine characteristics. The supervision of women workers. Check list of practical applications. Index.

Note: This book was written because of the special problems produced by the employment of large numbers of women workers in war industries in the United States. Its aim is to provide a handbook for factory managers, foremen, and others in direct charge of women workers.

LINK, HENRY CHARLES

137
L647 The rediscovery of man. New York: The Macmillan Company, 1938. 257 p. 20 cm. \$2.00. 3226d

Contents: What is psychology? The rediscovery of man. The psychodynamics of personality. The habits of personality. On overcoming fears and worries. Machinists of the soul. Personal security or social security? The psychology of sportsmanship. Gold standards of personality. Slavery or personality? The philosophy of personality. The supreme personality. Appendix.

Note: This book on psychology is designed to instruct the layman on individual practical application of psychological principles. The appendix supplies a short bibliography for further study.

LUCKIESH, MATTHEW, AND FRANK K. MOSS

Reading as a visual task. New York: D. Van Nostrand Co., Inc., 1942. 428 p. illus. 22 cm. \$5.00. 3227

Contents: The task of reading. Aids to seeing. Visibility criteria of readability. Size of type. Type-face. Leading and line-length. Papers and inks. Various duplicated materials. Visual efficiencies and deficiencies. Reading performance. Psychophysiological effects associated with reading. Specifications for optimum readability. Index.

Note: This book presents the subject of seeing from the standpoint of human efficiency, safety, and welfare. It describes the methods developed by the authors in their work at the General Electric Company to determine proper lighting requirements for homes, schools, offices and factories. It includes information from physics, optics, and physiology that is necessary to understand the subject, and it describes the methods used to obtain accurate data for solving lighting and seeing problems.

✓ McMURRY, ROBERT N.

Handling personality adjustment in industry. New York: Harper and Brothers, 1944. 297 p. 20 cm. \$3.00. 3227a

Contents: Labor problems: Causes of employee dissatisfaction. The labor union. Dealing with labor trouble. Building good will and morale. The "problem employee." Vocational and

emotional maladjustment in industry. Kinds of maladjustment: Attacks on others and on the self. Handling "problem" employees. Selection problems: Factors in the introduction of scientific selection procedures. Techniques of employee selection. How to conduct the selection interview. Interpreting the findings. The home interview. The treatment, use and value of the interview findings. Training problems: Motivating acceptance of the training program. A program for training to alter attitudes and habits. Training the employment interviewer.

Note: A book for executives, written to show them the subjective and clinical approach to their personnel problems. Various problems are analyzed in the light of recent findings in psychology and psychiatry and practical techniques are worked out for their solution.

MOORE, BRUCE VICTOR, AND GEORGE W. HARTMANN, EDITORS

Readings in industrial psychology. With an introduction by Robert Irwin Rees. New York: D. Appleton and Company, 1931. 560 p. illus. 22 cm. \$5.00. 3229

Contents: Introduction. Basic principles. Popular versus scientific procedures in appraising men. Technique of personnel selection. Rating scales. Mental tests and individual placement. Analysis of occupational interests. Vocational guidance. Training the worker. Efficiency and scientific management. Fatigue and rest pauses. The working environment. Accidents. Monotony. Morale: Motivation and satisfaction in work. Labor unrest and strikes. Leadership and social adjustment. Distributing the product. Index.

Note: More than 200 of the most significant original contributions on the applications of psychology to industrial management are presented in this collection of selections from the literature on industrial psychology. The selections, which are representative of all points of view and touch all important phases of the subject, are accompanied by editorial comments.

MOORE, HERBERT

Psychology for business and industry. Second edition. New York: McGraw-Hill Book Company, Inc., 1942. 526 p. illus. 23 cm. (McGraw-Hill publications in psychology; J. F. Dashiell, consulting editor) \$4.00. 3230

Contents: Psychology's service to business and industry. Getting a job. The importance of proper selection. Hiring the worker. Testing the applicant. Special ability tests (mechanical and clerical). Personality tests. Appraising the employee. Training the worker. Motivating the employee. Promoting the employee. Employee accidents. Employee fatigue. The problem employee. Psychological factors in consumer contacts. Psychological factors in selling. Index.

Note: This text deals with the application of psychology to personnel problems, discussing factors in employee selection, training, motivation, etc., and outlining psychological techniques as implements. Emphasis is on methods which have been demonstrated in actual use by personnel experts and executives to have high practical value. The principal change in the second edition is the change in emphasis on the use of psychological tests. Other changes suggested by instructors who used the first edition and by staff members of personnel departments of corporations have been included.

POFFENBERGER, ALBERT THEODOR

Principles of applied psychology. New York: D. Appleton-Century Company, Incorporated, 1942. 655 p. illus. 24 cm. (The Century psychology series; R. M. Elliott, editor) \$4.00. 3231

Contents (abridged): The field of applied psychology. Learning and the acquisition of skill. Thinking and suggestion. Work and rest. Monotony—a problem in adjustment. The influence of drugs and stimulants. Principles of vocational adjustment. Rating human qualities. The role of intelligence in adjustment. Adjustment to uniformity and variety of work—specialization—standardization. Psychological problems in the distribution of goods. The adjustment of advertising and selling methods to the consumer. The causes of criminal behavior. The determination of guilt. Treatment of the offender. Psychology in the treatment of disease. Psychology in education. Bibliography. Index.

Note: A broad survey of the subject, designed for under-

graduate college students who have had an elementary course in the subject. The book is also of interest to vocational teachers, business men, and others who have some knowledge of psychology. This title is a successor to H. L. Hollingworth and A. T. Poffenberger, *Applied psychology*, new edition, New York, 1923. This edition contains nine new chapters, which include chapters on the psychology of the judge and jury, radio advertising, and on vocational subjects. The text is keyed to the bibliography which includes 732 numbered entries.

ROBINSON, EDWARD STEVENS

Law and the lawyers. New York: The Macmillan Company, 1935. 348 p. 22 cm. \$2.75.

3231a

Contents: Law—an unscientific science. The defense of conservatism. A philosophy for lawyers. Psychology and legal theory. What brand of psychology. Psychological analysis. Judicial deliberation. Judicial problems and their definition. Legal rules. Judicial formulas. Judges as philosophers. Social adjustment. A natural science of the law. Notes. Index.

Note: A readable examination of some of the fundamental concepts of American jurisprudence in the light of modern psychological knowledge. While written by a psychologist, it is addressed to members of the legal profession and is of interest to those concerned with the social psychology of judicial institutions. The "Notes" include 23 pages of references.

ROSENSTEIN, JUDA LOUIS

Psychology of human relations for executives. New York: McGraw-Hill Book Company, Inc., 1936. 284 p. 21 cm. \$2.50.

3232

Contents: Why do people do as they do? How do people go at their difficulties? What is this thing called personality? What does the job mean to the worker? What about cooperation and discipline? What is there in psychology? What are some things which executives have overlooked? What are some practical considerations and how can they be put into action? Excerpts. Index.

Note: The purpose of this book is to give a basis for study and analysis of human behavior, using analogies from the fields of industry, psychology, and personal clinical experience. It aims to show executives how they may use the teachings of psychology in the solution of human problems confronting them.

SCOTT, WALTER DILL, AND OTHERS

Personnel management; principles, practices, and point of view, by Walter Dill Scott, Robert C. Clothier, Stanley B. Mathewson, and William R. Spriegel. Third edition. New York: McGraw-Hill Book Company, Inc., 1941. 589 p. illus. 23 cm. \$4.00.

3232a

Contents (abridged): Part I, The development of personnel management: The background. The worker-in-his-work unit. The organization and function of a personnel department. Personnel policies. Part II, Instruments of personnel control: Construction and development of instruments and records. The qualification card. The occupational description. Transfer, promotion, and discharge. Traditional methods of judging men. Measuring aptitudes. Interest tests. Merit rating. Job analysis. Part III, Education and training: Introducing the worker to his job. Training workers. Part IV, Employee incentives: Influence other than the monetary wage. Wage and salary control. Wage-payment plans. Financial aid to employees. Safety, health, and recreation. Part V, Industrial democracy and social controls: Employee representation. Labor relations acts. Stabilizing employment. Pension plans. Part VI, Special problems in industrial relations: Workers demanding special consideration. Industrial unrest, working conditions, and labor turnover. Measuring employee morale and group opinion. Appendixes. Index.

Note: A textbook on the principles of personnel management. The book aims to crystallize thought on the subject of human adjustments as a summary of past achievements and as a basis of future development. The third edition covers the changes in labor legislation made in the ten years between 1931 and 1941, and management's adjustment of practices and policies to meet these changes.

STRONG, EDWARD KELLOGG, JR.

Change of interests with age; based on ex-

amination of more than two thousand men between the ages of twenty and sixty representing eight occupations. Stanford University, Calif.: Stanford University Press, 1931. 235 p. illus. 23 cm. \$4.00.

3233

Contents: Foreword, by Walter R. Miles. Introduction and summary. Changes with age in liking, disliking, and being indifferent. Changes in interests from decade to decade. Changes in interests in terms of various groupings. Interest changes with age characteristics of all eight occupational groups. Resemblance of interests of men in one occupation to those of men in other occupations as affected by age. Occupational preferences. Age scales. Effect of age upon scores from occupational interest scales. Appendix. Bibliography. Index.

Note: It is the author's thesis that a knowledge of the way personal interests develop and of the extent to which they are formed by one's occupation or profession can be of value in planning vocational training. On the basis of his study he reaches the hypothesis that interests are responsible for choice of occupation rather than a resultant of it. However, he points out that research should be extended to cover the adolescent age before the theory can be verified.

STRONG, EDWARD KELLOGG, JR.

Psychological aspects of business. New York: McGraw-Hill Book Company, Inc., 1938. 629 p. illus. 23 cm. \$4.00.

3234

Contents: Preface. Part I, General survey: Introduction. Analysis of a purchase. Analysis of a sale. Where to put the emphasis. Part II, How man satisfies his wants: Man's wants. Secondary and tertiary wants. Learning. Conflict. Feeling, attitude, sentiment, good will. Ethics of influencing others. Part III, Principles of influencing others: Consumer research. Determination of sales strategy. Appeals. Motivation. Establishing the adequacy of the solution. Propaganda. Part IV, Tactics of selling: Prospecting. Starting the sale. Presenting the proposition. Closing the sale. Part V, Research techniques: Role of memory in advertising. Measurement of advertisements. Questionnaire. Rating scales. Measurement of attitudes. Job analysis. Safety work. Part VI, Employer-employee relationships: What employees and employers want. The leader. Morale. Appendix: Five sales interviews. Index.

Note: The chief theme of this textbook is "influencing others." The emphasis is upon the principles of influencing, whether these involve the seller-buyer relationship in advertising or selling, the agitator-follower relationship in propaganda, or the employer-employee relationship in industrial relations. Aside from the principles of influencing others, the book also gives some attention to the different techniques of influencing, especially in the field of personal selling. Parts I to IV are a thorough revision of the author's *Psychology of selling and advertising*, New York, 1925; much of the earlier material has been condensed and a considerable amount of new material has been added—the two chapters on Consumer research and Propaganda being almost entirely new. Parts V and VI are also new.

TIFFIN, JOSEPH

Industrial psychology. New York: Prentice-Hall, Inc., 1942. 386 p. illus. 23 cm. \$4.65.

3235

Contents: The significance of individual differences in industry. General principles of employee testing. Mental ability and mechanical comprehension tests. Dexterity, manipulative, and achievement tests. Tests of personality and interest. Visual problems of industry. Training of industrial employees. Work, fatigue, and efficiency. Industrial mental rating. Industrial inspection. Accidents and safety. Attitudes and morale. Appendixes. Index.

Note: A survey of the procedures and techniques that have been responsible for the acceptance of psychology as a tool of industrial management, with an account of the applications of psychology to employee selection and placement, merit rating, reduction of accidents, solution of visual problems, increasing the accuracy of inspection, improvements in training methods, and the measurement and improvement of employee morale. Most of the material on individual differences, merit rating, and employee placement tests is presented here for the first time. There are a large number of references to the technical literature of the field in footnotes throughout the book. The appendixes contain a mathematical account of some elementary statistical procedures, the Taylor-Russell selection-ratio tables, and a list of psychological tests with their publishers.

VITELES, MORRIS SIMON

Industrial psychology. New York: W. W. Norton & Company, Inc., 1932. 652 p. illus. 24 cm. \$6.50. 3236

Contents: Preface. Introduction to a study of industrial psychology. The economic foundations of industrial psychology. Social foundations of industrial psychology. The psychological foundations of industrial psychology. The nature and distribution of individual differences. The origin of individual differences. Basic factors in vocational selection. Job analysis. The interview and allied techniques. Standardization and administration of psychological tests. Tests for skilled and semi-skilled workers. Tests in the transportation industry. Tests for office occupations, technical and supervisory employees. Safety at work. Psychological techniques in accident prevention. Accidents in the transportation industry. The acquisition of skill. Training methods. Industrial fatigue. The elimination of unnecessary fatigue. Machines and monotony. Specific influences in monotonous work. Motives in industry. The maladjusted worker. Problems of supervision and management. Acknowledgments. Index to names. Subject index.

Note: Devoted to a discussion of the methods employed, the principles involved, and the results accomplished by industrial psychology in promoting the better effectiveness of man in industry and increasing industrial efficiency. It is a comprehensive text, designed for advanced study and use in the field. A bibliography is included.

VITELES, MORRIS SIMON

The science of work. Illustrated by Kinsley R. Smith. New York: W. W. Norton & Company, 1934. 442 p. illus. 22 cm. \$4.50. 3236a

Contents: Preface. Work throughout the ages. Work with machines. Fitness for work. Devaluating the psychological goldbrick. Matching men and occupations. Worse than war. Acquiring skill at work. Making work easy. Machines and monotony. Making work worthwhile. Salvaging the misfits. Working together. References. Index.

Note: A simpler, less technical book than the author's comprehensive survey, *Industrial psychology*, described above. Material is here selected which will be of immediate interest and use to the practical man in industry.

WEINLAND, JAMES DAVIS

General psychology for students of business. New York: F. S. Crofts & Co., 1940. 564 p. illus. 23 cm. \$3.60. 3237

Contents: What is psychology and why study it? The method of science is observation. From method to technique. Individual differences and psychological laws. From differences to prediction of differences. Are individual differences inherited or acquired? Maturing and exercising. Working, aging, dying. The discovery of intelligence. Mental age norms and the analysis of intelligence. From numerology to nervous system. Physical elements in personality. Behavior in personality. Integration of the personality. Sensation and parts of the environment. Emotions and emergencies. The physical basis of motivation. Mental aspects of motivation. Motivation stimulates attention. Attention ripens into perception. Perception involves learning. The process of learning analyzed. Learning ends in memory. Imagination springs from memory. Thinking diverges from imagination. Toward the improvement of business thinking. To stop thinking and suggest action. The best conditions for action and work. Bibliography. Index.

Note: A text for college students and business men.

WOODWORTH, ROBERT SESSIONS, AND MARY R. SHEEHAN

First course in psychology. New York: Henry Holt and Company, 1944. 445 p. illus. 20 cm. \$1.80. 3238

Contents: Learning to understand people. Dealing with the environment. How we learn. Remembering and forgetting. Memorizing. How to study efficiently. More study hints. How to read. How we perceive. Thinking. Arguments, good and bad. Motivation. Purposes. Where our wishes come from. Motives in everyday activities. Managing emotions in everyday life. The individual's personality. Personality: description and measurement. Fitting yourself into your environment. Intelligence and varied

mental abilities. Heredity and environment. "When I finish school—" "Psychology" that is not psychology. Mysteries of the mind. Answers. Books on careers. Glossary. Index.

Note: A simplified text which is suitable in elementary college courses in practical psychology as well as in senior high school classes. No physiological or medical background is presented, the emphasis being upon the observable results of behavior, perception, intelligence, and other related factors in everyday life. Of interest to the general reader and to students of senior high school or early college level. A summary and list of exercises follow each chapter.

Educational Psychology

COMMINS, WILLIAM DOLLARD

Principles of educational psychology. New York: The Ronald Press Company, 1937. 596 p. 21 cm. (Psychology series; edited by A. T. Poffenberger) \$3.00. 3239

Contents: Psychology and education. Some principles of mental development. Ability. Measuring ability. The growth of ability. General intelligence. Practical significance of intelligence. The growth and development of intelligence. Some principles of heredity. Heredity and mentality. Learning. Habits and skills. Memory. The transfer of training. Motivation. Thinking. Learning to think. The development of personality. Personality and school adjustment. Author index. Subject index.

Note: This college textbook endeavors to present a consistent organization of educational psychology by applying to the psychology of education and development certain basic concepts which have evolved from many converging trends in biological and psychological thought.

DOUGLAS, OSCAR BERRY, AND B. F. HOLLAND

Fundamentals of educational psychology. New York: The Macmillan Company, 1938. 598 p. illus. 22 cm. \$2.75. 3240

Contents: Part I, The subject matter and scientific bases of educational psychology: Educational psychology and related fields of knowledge. The scientific standards of educational psychology. Part II, Environment and heredity: Nature and characteristics of environment and heredity. Bodily structures and their functions. Growth, development, and maturation. An inventory of inherited functions and capacities. Part III, Learning: Objectives, principles, and types of learning. Sensori-motor learning. Perceptual-motor learning: Physiological tendencies and social adjustments. Social tendencies. Acquired motor skills. Perceptual learning. Conceptual learning. Associative learning. Imaginative learning. Part IV, Measurement in educational psychology: Physical, sensory, and motor tests. The measurement of specific mental functions and abilities. Tests of general mental ability and aptitude. Educational measurement. The statistics of measurement. Index.

Note: An introductory college textbook which is written from the physiological and experimental point of view, emphasizing the concepts of growth, maturity, and heredity, along with other ideas growing out of physiology as a background against which the problems of any child may be viewed. Social problems are presented at many different points in the text and in many different ways, while perception, conception, and related topics are treated as elements of learning from the standpoint of schoolroom activities. The material has been selected from a large number of representative books and journals, to which references are made at the end of each chapter, and numerous classifications of traits and processes are intended to give the beginning student a broad outline of the subject.

GATES, ARTHUR IRVING, AND OTHERS

Educational psychology. By Arthur I. Gates, Arthur T. Jersild, T. R. McConnell and Robert C. Challman. A revision of Psychology for students of education. New York: The Macmillan Company, 1942. 805 p. illus. 22 cm. \$3.00. 3241

Contents: Introduction: The scope of educational psychology. The development of behavior. Physical and motor development. Emotional development. Development of social behavior. Mental development. The nature and measurement of intelligence. The practical uses of intelligence and other aptitude tests. The general nature of learning. Principles of guidance in learning. The

development of meanings. Reasoning and problem solving. Transfer of training. Tests and measurements. Other methods of appraisal. The adjustment of the individual. Mental health hazards of the school child. Guidance of the individual child. The mental health of the teacher. Indexes.

Note: As indicated in the title, this work is a revision of the authors' *Psychology for students of education*, New York, 1922. The present volume provides a survey of the facts and principles of educational psychology which are considered to be of most value to students preparing for the teaching profession. Emphasis is placed on the processes of acquiring meanings, of generalizing, thinking, and solving problems dealing with curriculum organization and other school fields. The material is based largely on a critical evaluation of the available literature on the subject. Each chapter contains a group of questions and exercises designed to foster critical thinking by the student. These are followed by general references on the subject and a list of literature cited.

✓ GRIFFITH, COLEMAN ROBERTS

An introduction to educational psychology. New York: Farrar and Rinehart, Inc., 1935. 754 p. 23 cm. \$3.00. 3242

Contents: Part I, Methods of promoting growth: The beginnings of the educative process. The development of actions and attitudes. Training the perceptual functions. The development of attention and interest. The problems of motivation. The development of emotionalized actions. The development of problem-solving. The development of personality and character. Part II, Original nature and learning: The problems of original nature. The original nature of man. Major varieties and theories of learning. Engineering the learning process. The transfer of training. The art of teaching. Part III, Conceptual and methodological tools of education: The nature of intelligence. Problems of teaching created by individual differences. The socialized person. Adjustment and mental hygiene. The concept of efficiency in the schoolroom. Points of view in psychology. Index.

Note: A textbook for beginning college courses. The author presents a systematic arrangement of facts together with instances drawn from the daily life of teachers in the schoolroom. There is a detailed treatment of the concept of original nature and of all the correlative terms which go with this concept, such as heredity, instinct, innate ideas, and other types of native components of human nature. A large number of references are given in footnotes and there are additional selected reading lists at the end of each chapter.

✓ GUTHRIE, EDWIN RAY

The psychology of learning. New York: Harper and Brothers, 1935. 258 p. illus. 19 cm. \$1.75. 3243

Contents: Introduction. Psychological explanations. The conditioned response. Time factors in conditioning. Inhibitory conditioning. Generalization. The effects of repetition. Emotional reinforcement. Forgetting. Habits. Breaking habits. Reward and punishment. Skill. Trial and error in learning. Learning with and without intention. Perception and thought. Conclusion. References. Index.

Note: This book, written in terms of behavior, is an outgrowth of the views expressed in S. Smith and E. R. Guthrie's *General psychology in terms of behavior*, New York, 1921. Here an attempt is made to discover the nature of the phenomenon of association and the limits of its use in the explanation of learning.

✓ HARTMANN, GEORGE W.

Educational psychology. New York: American Book Company, 1941. 552 p. illus. 23 cm. (American education series, George Drayton Strayer, general editor) \$2.75. 3244

Contents (abridged): The psychological approach to educational problems. The improvement of the organism and its functions. Adaptation of instruction to developmental levels. Supplementary bibliography. Glossary. Index.

Note: This elementary text for courses in educational psychology gives particular attention to pertinent psychological and sociological concepts. It treats thinking, originality, and creativity with an eye to their enhancement and it absorbs the contributions of the various recent movements known as field theory, semantics, and the unity of science. The volume contains illustrations, pre-views, summaries, and questions focused upon the general problem of application.

HILGARD, ERNEST ROPIEQUET, AND DONALD G. MARQUIS

Conditioning and learning. New York: D. Appleton-Century Co., 1940. 429 p. illus. 21 cm. (Century psychology series; Richard M. Elliott, editor) \$2.75. 3244a

Contents: The place of conditioning in psychology. Classical conditioning experiments. Instrumental conditioning experiments. The nature of reinforcement. The nature of extinction. Strength of conditioning. Gradients of reinforcement. Generalization and discrimination. Serial learning. Problem solving. Voluntary action. Personality. Neurophysiological mechanism of conditioning. Glossary. References and author index. Subject index.

Note: This book represents a critical exposition of the facts and theories of conditioning principles. Greatest emphasis has been laid upon the relation of conditioning to learning theory. Later chapters survey the possibilities of applying conditioning concepts within some of the other fields. There are 39 figures to supplement the text, and each chapter ends with a summary and notes divided by subject. A 12-page glossary is also added.

HOLLINGWORTH, HARRY LEVI

Educational psychology. New York: D. Appleton-Century Company, Inc., 1933. 540 p. illus. 20 cm. \$3.00. 3245

Contents: Part I, Psychological foundations: Introduction. The psychology of learning. Control and mental balance. Motivation—the dynamics of education. Human motives available in education. The quality of the organism; the learner. Part II, Techniques of instruction: The psychology of teaching. General factors on which learning depends. Details of management in instruction. The psychology of classroom methods. Measurement in education. The education of exceptional pupils. Part III, Psychology of school subjects: Education in a sensorimotor skill—typing. Learning on a symbolic level—reading. Knowledge and thought outcomes—science teaching. The arts of expression and appreciation. Education for mental health. Part IV, General educational problems: Transfer of training and formal discipline. Psychology and the curriculum. The behavior of school children. The psychology of the teacher. The psychology of educational change. The place of psychology in education. Indexes.

Note: This introductory text presents the general psychological principles specifically underlying the processes of teaching and learning, and is closely restricted to educational applications of psychological theory. There are exercises at the end of each chapter plus useful bibliographies on similar educational topics.

JORDAN, ARTHUR MELVILLE

Educational psychology. Third edition. New York: Henry Holt and Company, 1942. 597 p. illus. 22 cm. \$3.00. 3246

Contents (abridged): Part I, Problems of learning: An introduction. Heredity and environment. General principles of learning. Conditions of learning. How to study. Transfer of training. Transfer of training in the case of school experiences. Part II, Individual differences: Maturation or growth. Part III, Personality: Personality adjustment. Part IV, Measurement of traits: Statistical methods. Intelligence and intelligence testing. Achievement tests. Measurement of personality traits. Index. 1928

Note: A feature of this college textbook is the rather large amount of statistical material introduced into the text in order that the student may develop a methodology of statistical interpretation. Some attention to mental hygiene and to the problems of backwardness and their relation to matters of conduct is given in the light of the bearing of these two topics on school discipline. An attempt has been made in the third edition to reduce the number of tables by the substitution of narrative accounts in order to make the book more readable. Another feature of the third edition is the introduction of numerous applications of the psychological principles to actual school situations. There are lengthy reference lists at the end of each chapter.

JUDD, CHARLES HUBBARD

Educational psychology. Boston: Houghton Mifflin Company, 1939. 566 p. illus. 22 cm. (Basic professional courses in education, edited by C. H. Judd) \$2.50. 3247

Contents (abridged): Introduction. Part I, Physical heredity and behavior: The principle of adaptation. The nervous system. Behavior and adaptation. The acquisition of new forms of behavior. Emotions. Perception as an active process. Part II, Social heredity: Language as a social institution. Acquisition of the vernacular. Spelling and primary reading. Acquisition of foreign languages. Attention, analysis, abstraction, and generalization. The number system and systems of measurement as social institutions. Acquisition of rudimentary number ideas. Generalization, a major phase of mathematical reasoning. Extension and systematization of experience. Vocational education and general education. The fine arts. The natural sciences. The social sciences. Part III, Personality: Specific traits and personality. Periodicity in the development of personality. Deficiencies and abnormalities. Generalization. Part IV, Psychological solutions of educational problems: Methods of psychological and educational investigation. Discipline, individual differences, supervised study, and lesson-planning. Index.

Note: The purpose of this college textbook is to present a solution of educational problems based on principles derived from the intelligent union of individual psychology and social psychology and by treating the individual as part of the social group. Part I treats of the relation of human evolution and development to the evolution of the whole animal kingdom. Part II deals with the social environment, showing how its most important factors come into existence and how individuals acquire social modes of thought and behavior. The relation of personality traits to teaching and school administration is outlined in Part III, and the final portion of the book is devoted to an account of the applications of investigation techniques to the solving of practical school problems. There are references at the end of each chapter.

LA RUE, DANIEL WOLFORD

Educational psychology; personality and what shapes it. New York: Ronald Press, 1939. 397 p. illus. 22 cm. \$2.50. 3248

Contents: What is our aim? Who or what is X? Diagnosing X by approximate measurement. Inheritance and education. Studying and guiding the young. Education, teaching, and learning. Motivation. Guidance in the learning of lessons. Learning—and the lesson for skill. The lesson for information. The lesson for thought. The lesson for sentiment. The lesson for creating. How to condition the propensities to secure mental health and character? The training of talent. Educating intelligence. Conditioning the body. The personality of the teacher. Measuring and educating. Guide to the rating of propensities. Appendixes. Index.

Note: A text and reference book on personality and what shapes it for the student and practitioner in child study. Its aim is to diagnose each unique personality and to plan for its development. In understanding the child, use of measurement is stressed. Motivation in learning is emphasized in developing the personality. The style is simple and there are selected references after each chapter.

MCGEOCH, JOHN ALEXANDER

The psychology of human learning: an introduction. New York: Longmans, Green and Co., 1942. 633 p. illus. 21 cm. \$4.00. 3249

Contents: Concepts and methods. Curves of learning. Intra-serial phenomena. Distribution of practice. Learning as a function of the material learned and of certain modes of practice and presentation. Learning as a function of chronological age, sex, and test intelligence. Learning as a function of motive-incentive conditions. Retention. Conditions of retention. Transfer of training. Fundamental processes and conditions of learning. Fixation and elimination: Frequency and related variables; the empirical law of effect. Indexes.

Note: A treatment suited to advanced students and to persons chiefly interested in theory. The work attempts to organize the diverse material, empirical data, generalization, special theories, points of view, and interpretative systems which are to be found in the literature of the subject. The author presents the pros and cons for the various theories and points of view, makes such generalizations as are deemed justified for the present, notes the unreliable, inadequate, and apparently conflicting data, and points out the type of research needed to resolve these conflicts and make possible valid generalizations. There are numerous tables and graphs of experimental data, and extensive bibliographies are given at the end of each chapter.

MILLER, NEAL EDGAR, AND JOHN DOLLARD

Social learning and imitation. New Haven:

Published for the Institute of Human Relations by Yale University Press, 1941. 341 p. illus. 23 cm. \$3.50. 3249a

Contents: Foreword. Figures. Preface. Learning: its conditions and principles. Four fundamentals of learning. Significant details of the learning process. A basis for acquired drives and acquired rewards. Higher mental processes. A pattern case of imitation. The learning and the generalization of imitation—experiments on animals. The learning of imitation—experiments on children. Varying cases of matched-dependent behavior. Copying—the role of sameness and difference. The prestige of models—experiments on children. The social conditions producing imitation. Imitation and independent learning—experiment on children. Crowd behavior. Analysis of a lynching. Copying in the diffusion of culture. Appendixes: Revision of Holt's *Theory of Imitation*. Theories bearing on the nature of imitative behavior; experimental work on imitative behavior. References. Index.

Note: An attempt to use both psychology and social science in a study of imitative behavior. Data are presented concerning concrete examples of this behavior in the lives of small children, and experiments are reported which were made, in most cases, with children. These experiments were conducted to test various implications of the hypothesis that imitative behavior is learned, and that it can therefore be unlearned. It is not the intent of the authors that this hypothesis shall be a terminus to effort in this field, but rather a beginning for further study and investigation.

MURPHY, LOIS (BARCLAY), AND HENRY LADD

Emotional factors in learning. New York: Columbia University Press, 1944. 404 p. 22 cm. (Sarah Lawrence College publications. No. 4) \$3.50. 3249b

Contents: Part I, The development of an educational point of view: Preface. Individual education and social change. The role of diagnosis in educational guidance. Interests and motivation. Varieties of learning attitudes. Stages in orientation and growth. The ways in which development comes. The role of "problems" in learning. Difficulties with specific types of work. Patterns of personality. Insecurity at the college level. Authority problems in relation to learning. Summary of dynamic factors in learning. Part II, Individual studies: Introduction. Ambition, narrow talent, and a rigid personality. Ambivalence resulting from early shock. A practical limited student. Insight without persistent goals. A shy student. Success without growth. Therapeutic uses of the curriculum. A correction to deterministic thinking. Index.

Note: This monograph is one of a series of reports of work done at Sarah Lawrence College under a full-year grant from the General Education Board. The study centers upon the educational development, through four years, of the students in two entering classes, using records, case reports, personality-test data, and stenographically recorded interviews with students graduating from the two classes. Part II of the book is concerned with individual studies of specific girls, and, together with the first part, attempts to describe a method of approach to concepts of guidance developed out of the authors' experience.

MURSELL, JAMES LOCKHART

Educational psychology. New York: W. W. Norton & Company, Inc., 1939. 324 p. illus. 21 cm. \$2.75. 3250

Contents: The field of educational psychology. Heredity and environment. Intelligence and its measurement. Individual differences—the adjustment of the child to the school. Mental growth and development. The nature of learning. The conditions of effective learning. Types of learning. The transfer of training. The social setting of mental development. The dynamics of learning and growth—motivation. Index.

Note: An elementary statement of the subject which emphasizes the concept of mental growth. The book is intended primarily for the use of teachers.

PRESSEY, SIDNEY LEAVITT, AND J. ELLIOTT JANNEY, EDITORS

Casebook of research in educational psychology. New York: Harper & Brothers, 1937. 432 p. illus. 21 cm. \$2.25. 3251

Contents: Interest—practicality—practicability. Health—a neglected factor in psychology. Interests and incentives. Problems of social adjustment and of emotional stress. Intelligence. Adjustment to individual differences. Some problems of educational measurement. Types of learning. Efficiency in learning. Attitudes and character traits. Transfer of training. Fatigue. The results of schooling. Journals—research methods—educational engineering. Index.

Note: A collection of research studies in the various aspects of educational psychology, designed for textbook use in college courses. Under each of the general heads shown above the editors present five to eight original papers, each edited so as to retain only the material bearing directly upon the problem under study. A general introduction and a conclusion are provided for each chapter.

PRESSEY, SIDNEY LEAVITT

Psychology and the new education. Revised edition. New York: Harper & Brothers, 1944. 654 p. illus. 21 cm. \$3.00. 3251a

Contents: The new psychology and educational reconstruction. Physical growth and change. Health and psychology. The nature and nurture of abilities. Interests: their nature and nurture. The development of the emotional life. The social psychology of childhood. Distinctive problems of adolescent social development. The growth of attitudes and of moral and aesthetic standards. The individual child. Learning: its course and its general nature. The control of learning: the learner. The control of learning: the learning situation and the teacher. Methods for the appraisal and direction of learning. The hygiene of work. The permanence of schooling. Outcomes of schooling: transfer in school. Outcomes of schooling: applicational transfer. A foreword to the education of the future. Index.

Note: A complete revision of a text that is widely used in the United States. The new edition incorporates the integrative concept of child development which has emerged during the past decade, as well as the larger concept of learning which has evolved. The effects of the war upon education are considered at great length. The most distinguishing feature of this text is the concern of the author with actual children in actual classroom and out-of-school situations. Emphasis is also placed upon the fact that the influence of home, community, and school upon a child's development and learning are inextricably intermingled. The personality of the teacher is given special attention, since it is a major factor in the classroom.

RAUSHENBUSH, ESTHER, EDITOR

Psychology for individual education, by Lois Barclay Murphy, Eugene Lerner, Jane Judge, and Madeline Grant. Edited by Esther Raushenbush. New York: Columbia University Press, 1942. 306 p. illus. 22 cm. (Sarah Lawrence College publications. No. 2) \$2.75. 3252

Contents: Backgrounds of the exploratory courses in psychology, by Lois Barclay Murphy. An exploratory course in the psychology of personality, by Eugene Lerner. An exploratory course in studies in personality, by Jane Judge. Use of biology for psychology students, by Madeline Grant. A reading list. Index.

Note: A description of some of the exploratory courses for freshmen which are given at Sarah Lawrence College, Columbia University, New York, based on the theory of planned education adapted to the student's particular interests and needs. The courses deal with those questions about behavior and personality which can be observed by the students. The first of the four studies contained in this book considers how the materials of psychology are used and how psychological problems are discussed in the exploratory setting, pointing out the relation of this method of dealing with problems of human behavior to more academic methods. The next two studies are case histories of two exploratory courses. The fourth study shows how questions raised in the psychology classroom can be dealt with in the biology laboratory. The book is intended for teachers and illustrates how first-hand experience with the problems of human behavior can be used in the college classroom.

SANDIFORD, PETER

Foundations of educational psychology; nature's gifts to man. New York: Longmans, Green and Company, 1938. 464 p. illus. 22 cm. \$3.25. 3252a

Contents (abridged): Introduction: the nature of educational psychology. Heredity and environment. Individual differences found in human nature. The foundations of behavior. Non-variable or unlearned behavior: reflexes, instincts and emotions. Intelligence: its nature and measurement. Personality: its nature and measurement. Index.

Note: This is the first of a series designed to give a general survey of the foundations of educational psychology. The work is confined to a discussion of fundamental principles and to problems raised by modern research. All chapters are subdivided into minor topics. A list of references accompanies each chapter. Footnotes, tables, and diagrams are also added.

STARCH, DANIEL, AND OTHERS

Psychology in education, by Daniel Starch, Hazel M. Stanton, and Wilhelmine Koerth. New York: D. Appleton-Century Company, Incorporated, 1941. 722 p. illus. 22 cm. \$3.00. 3253

Contents: Part I, Directing pupils in school environment: The civilizer of man. What education is worth while? The teacher as guide. Understanding and directing young people. Getting pupils to work and learn. Measuring progress and achievement. What education can do. Personal counseling. Part II, Guiding pupils in learning specific subjects: Reading and development. The English language. Foreign languages. Literature. The social sciences. Physical and biological sciences. Mathematics. Vocational explorations. Health and physical education. Fine arts. Developing pupils as persons. Index.

Note: A textbook on educational psychology intended to aid the teacher in relations with pupils, colleagues, and citizens of the community. Emphasis is placed coordinately upon teaching and learning. Questions and references follow each chapter.

STROUD, JAMES BART

Educational psychology. New York: The Macmillan Company, 1935. 490 p. illus. 20 cm. \$3.00. 3254

Contents: Introduction. The instinct hypothesis. Emotion. The physiological basis of mental life. Elementary statistical concepts. Work and fatigue. Learning. Factors influencing speed of learning. Retention and recall. Intelligence—its nature and origin. Mental growth. Intelligence testing. Educational measurement. Development of personality. Studies in personality. Some educational problems. Index of authors. Index of subjects.

Note: This textbook, covering the conventional subjects of learning, retention and recall, work, fatigue and efficiency, intelligence and intelligence testing, heredity and environment, and mental development, gives a clear exposition of those psychological facts and principles which have particular reference to educational problems. The subjects of instinct, emotion, and physiological psychology are also discussed. Lists of questions and exercises and selected references are given at the end of each chapter.

THORNDIKE, EDWARD LEE

Human learning. New York: The Century Co., 1931. 206 p. illus. 20 cm. (The Century psychology series, R. M. Elliott, editor) \$2.25. 3254a

Contents: Introduction: The influence of the frequency of occurrence of a situation. The influence of the frequency of occurrence of a connection: the principle of belonging. The influence of the after-effects of a connection. Explanation of the influence of the after-effects of a connection. New experimental data on the after-effects of a connection. Identifiability, availability, trial, and system. Other facts concerning mental connections. Conditioned reflexes and learning. Purposiveness and learning: Gestalt theory and learning. Ideational learning, thinking and reasoning. The evolution of learning in general. The evolution of learning in recent times: Future possibilities. Bibliography of references in the text. Index.

Note: This book is a compilation and printing of the lectures given by the author in the fifth series of the Cornell University Messenger lectures, 1928-29. The bibliography consists of 14 references.

THORNDIKE, EDWARD LEE

The psychology of wants, interests and attitudes, by Edward L. Thorndike and the staff of the Division of Psychology of the Institute of

Educational Research, Teachers College, Columbia University. New York: D. Appleton-Century Company, Incorporated, 1935. 301 p. illus. 23 cm. (The Century psychology series, R. M. Elliott, editor) \$3.50. 3255

Contents (abridged): Introduction. The influence of wants, interests, and attitudes in determining what response a situation shall evoke. The attachment of rewards to tendencies. Unconscious learning. The influence of punishments. The dynamics of ideas of situations, of responses, and of after-effects. Intrinsic and extrinsic interests. Learning and doing what seems uninteresting or valueless, or both uninteresting and valueless. Evidence on the influence of rewards and punishments from the history of education and industry. Changing wants, interests and attitudes: the influence of occurrence plus emphatic reward. The influence of associate shifting; conditioned reflexes. Changes in the unpleasantness of a stimulus due to its repetition. Difficulties in the education of wants, interests, and attitudes. Appendices. References. Index.

Note: This volume, which introduces much original material from recent research, discusses the dynamics of wants, interests, attitudes, and emotions. The first part considers the ways in which wants, interests, and attitudes stimulate and guide thought and action; and the second part discusses the ways in which they are strengthened, weakened, and shifted in their attachments.

✓ TROW, WILLIAM CLARK

Educational psychology. Boston: Houghton Mifflin Company, 1931. 504 p. illus. 21 cm. \$2.25. 3255a

Contents (abridged): Motivation. Emotion. Adjustment. Intelligence. Instruments of measurement. Sensori-motor learning and manual skill. Associative learning and transfer. Rational learning and scientific method. Social learning and character education. Growth. In conclusion. Questions and problems. Bibliography. Index.

Note: This college textbook presupposes at least an elementary knowledge of psychology. Material has been organized so that the connection between logically separate systems may become apparent. No effort has been made to indoctrinate the reader with any of the current psychological orthodoxies. Chapters end with brief references and a full bibliography appears at the end of the book. The section of study questions is divided by chapters. There is an 18-page index. A shorter book by the same author, widely used in colleges in the United States, is his *Introduction to educational psychology*, Boston: Houghton Mifflin Company, 1937, 417 p., \$2.25.

WHEELER, RAYMOND HOLDER, AND FRANCIS THEODORE PERKINS ✓

Principles of mental development; a textbook in educational psychology. New York: Thomas Y. Crowell Company, 1932. 529 p. illus. 22 cm. \$3.75. 3256

Contents (abridged): The point of view. The laws of human nature. The embryonic nervous system in relation to behavior. Functions of the adult nervous system. Evolution of the learning process. Principles of mental development derived from animal studies. Beginnings of learning in the child. Perception and thinking in the child. The source of intelligent behavior. The measurement of intelligence. The development of emotion and will. The development of personality. Analysis of the learning process: maturation, goal, insight. Analysis of the learning process: coordination and motivation. Control of the learning process. Theoretical problems of learning. A summary and interpretation of learning. The problems of memory. Motivation. Discipline. The learning of special subjects. New procedures in education. Name index. Subject index.

Note: In this text the authors treat the problems of educational psychology from the standpoint of the Gestalt theory. The recent developments in biology, neurology, and psychology in so far as they relate to the nature of the learning process, the mental development of the child, and methods of instruction are all taken into account.

ENGINEERING

General

BICHOWSKY, FRANCIS RUSSELL

Industrial research. Brooklyn, N.Y.: Chemical Publishing Company, Inc., 1942. 126 p. illus. 22 cm. U.S., \$2.50; other countries, \$2.90.

3256a

Contents (abridged): Research the destroyer of business. Research the creator of wealth. What is research? The prenatal factors of invention. The postnatal factors of invention. Research for the small company. Place of research in company organization. The equipment of the laboratory. Technical control of the laboratory.

Note: Outlines the general principles of management and organization which have proven successful in the laboratories of leading manufacturers. It is based not only on considerable personal experience in laboratory management, but also on the accumulated experience of laboratory executives all over the country.

BOYD, THOMAS ALVIN

Research: the pathfinder of science and industry. New York: D. Appleton-Century Company, Incorporated, 1935. 319 p. 20 cm. \$2.50.

3256b

Contents: Part I, Orientation: Definition. Pure research and applied. Part II, Method: Evolution. Organization. Laboratories. Senses supplemented. Paper exploration. Observation. Accident. Re-search. Financing. Selling. Part III, Men: Men of many talents. Training. Recruiting. Part IV, Qualifications: Youth. Curiosity. Imagination. Experimentalism. Enthusiasm. Patience. Persistence. Faith. Courage. Common sense. Honesty. Modesty. Part V, Achievement: Products improved. Industries originated. Industries destroyed. Dividends: economic, educational, humanitarian. Part VI, Miscellaneous: Truth. By-products. "Why didn't I think of that?" Pythagoreanism. Remuneration. Penalties of pioneering. Bibliography. Index.

Note: A popular account of the aims and methods of modern industrial and scientific research, written in non-technical terms. The bibliography lists 139 books and articles on the art of pure and applied research published in the United States between 1921 and 1935 but omits works dealing with the results of particular researches.

BROWN, VICTOR JACOB, AND DELMAR G. RUNNER

Engineering terminology. Definitions of technical words and phrases. Second edition. Chicago: Gillette Publishing Company, 1939. 439 p. illus. 23 cm. \$4.00.

3257

Note: This dictionary gives the meaning of about 5,500 words and phrases commonly used in the various fields of engineering and related industries. Electrical, chemical, geologic, mechanical, architectural, and civil engineering terms are covered and defined in simple language, with occasional line drawings and photographs. An attempt is made to avoid ambiguity where the same word in one field may have a widely different meaning in another. The appendix contains a summary of English, Spanish, and German engineering words and phrases with their English equivalents plus a special list of surveying terms, abbreviations, symbols, tables, and conversion scales. The second edition contains about 500 new words and phrases, some of which together with new appendix material have been added from the National Advisory Committee for Aeronautics, as well as new symbols for plans, maps, and charts from the National Resources Committee.

CRISPIN, FREDERIC SWING

Dictionary of technical terms, containing definitions of commonly used expressions in aeronautics, architecture, woodworking and building trades, electrical and metalworking trades, printing, chemistry, etc. (Revised edition). Milwaukee: The Bruce Publishing Company, 1942. 376 p. illus. 20 cm. \$2.50.

3259

Note: A dictionary for the use of students, draftsmen, mechanics, builders, electricians, and workmen generally. The author does not attempt to include all the technical terms in any field, but rather a selection of terms that will be useful to the workman in his daily work. In the fourth edition, the scope has been expanded by the addition of many terms relating to chemistry, printing, electricity, metals, woodwork, plastics, steam heating, steam fitting, concrete, and riveting.

ESHBACH, OVID WALLACE, EDITOR

Handbook of engineering fundamentals. New York: John Wiley & Sons, Inc., 1936. 1081 p. illus. 22 cm. (Wiley engineering handbook series. Vol. 1) \$5.00.

3260

Contents (abridged): Section I, Mathematical and physical tables. Section II, Mathematics. Section III, Physical units and standards. Section IV, Theoretical mechanics. Section V, Mechanics of materials. Section VI, Mechanics of fluids. Section VII, Engineering thermodynamics. Section VIII, Electricity and magnetism. Section IX, Light—acoustics—meteorology. Section X, Chemistry. Section XI, Metallic materials. Section XII, Non-metallic materials. Section XIII, Contracts. Index.

Note: A comprehensive handbook of fundamental theories and data essential in engineering practice. It gives tables on engineering constants, properties of numbers, logarithms, trigonometric and hyperbolic functions, a series of tables of conversion factors for weights and measures arranged in order of dimensional sequence, tables of integrals, standard structural shapes, and physical properties of metallic and non-metallic materials. Special features include mathematics of finance, precision of measurements, hyperbolic trigonometry, differential equations, operational calculus and the theory of alignment charts; dimension systems, systems of units, standards, and introduction to the theory of dimensional analysis; the fundamentals of theoretical mechanics and mechanics of materials with applications to beams, columns, shafts, and reinforced concrete; the modern theory of fluid mechanics as applied to the fields of hydraulics and aerodynamics; recent physical concepts of the fundamentals of heat engineering; the theory of the electric, magnetic and dielectric circuits and their application to generalized networks and transient theory; the fundamental principles of general chemistry, chemical tables and industrial chemistry; the principles of light, acoustics and meteorological phenomena; the properties of metallic and non-metallic materials with reference to features of manufacture and use; and the elementary legal aspects of contractual relations.

GERR, STANLEY

Scientific and technical Japanese; a study of its efficiency as a means of communication, with an analysis of the Japanese technical vocabulary and practical suggestions for translators. New York: The author, 1944. 57 p. illus. 21 cm. Paper, \$1.50.

3260a

Contents: Preface. Introduction: Nature of scientific language. Part I: Problem of Japanese syntax, ideographic script. Problem of "ideographic" script. Part II: The Japanese technical vocabulary.

Problems of translation: complexity of the script; Kana; synonyms. Conclusion.

Note: This appraisal of scientific and technical Japanese is an attempt to bring to the attention of specialists in the field some of the problems that confront those attempting to master the Japanese language for an understanding of its scientific and technological literature.

HOOVER, THEODORE JESSE, AND JOHN CHARLES LOUNSBURY FISH

The engineering profession. Stanford University, Calif.: Stanford University Press, 1941. 441 p. illus. 23 cm. \$5.00. 3261

Contents: Who is an engineer? What is engineering? Fields and functions of engineering. Civil engineering. Mining engineering. Mechanical engineering. Electrical engineering. Chemical engineering and other fields. The method of engineering. Application of the engineering method. Uncertainties in engineering. Vocational guidance in engineering. Education of the engineer. The new call to the engineering profession. Appendix: Some definitions of engineering: requirements for admission to membership in engineering societies: engineering titles. Index.

Note: The book describes the qualifications and duties of the professional engineer and his habit of mind, and the rewards that an engineering career has to offer. It presents an extended analysis of the sphere and status of the profession and points out its capacities for future development. For the student and teacher of engineering, as well as for the engineer and the young man contemplating a career in engineering. The scope of the book is limited to the professional aspects of engineering life, and points of technology are introduced only by way of illustration.

HUDSON, RALPH GORTON

The engineers' manual. Second edition. New York: John Wiley & Sons, Inc., 1939. 340 p. illus. 20 cm. \$2.75. 3262

Contents: Mathematics. Mechanics. Hydraulics. Heat. Electricity. Mathematical tables. Index.

Note: The second edition of this pocket volume contains an entirely new chapter on heat, and a largely rewritten chapter on electricity. The book is a consolidation of the formulae and constants in which an engineer is interested, and brief treatment is made of the application of each. At the beginning of each group of formulae there is a statement giving its application, the symbolism of the involved physical quantities and the definite units of measurement. This edition also contains revisions and extensions of all tables of physical constants, new steam tables, recomputations of all conversion factors affected by the latest definition of B.t.u. and enlarged tables of conversion factors; many additions are made throughout the book.

JONES, FRANKLIN DAY, EDITOR

Engineering encyclopedia; a condensed encyclopedia and mechanical dictionary for engineers, mechanics, technical schools, industrial plants, and public libraries, giving the most essential facts about 4,500 important engineering subjects. Second edition. New York: The Industrial Press, 1943. 2 v. illus. 23 cm. \$8.00. 3262a

Note: An alphabetically arranged compilation of terms used in engineering. In addition to short definitions, there are numerous brief articles, running to a page or more in length. Important laws and useful formulas are given in the appropriate places. The work is intended for reference use in libraries and also by such persons as mechanical engineers, draftsmen, machinery salesmen, and patent attorneys. There are approximately 200 drawings. The second edition is only slightly revised.

NATIONAL RESEARCH COUNCIL

Industrial research laboratories of the United States, including consulting research laboratories. Seventh edition, 1940. Compiled under the supervision of Callie Hull for the National Research Council. Washington, D.C.: The National Research Council of the National Acad-

emy of Sciences, 1940. 372 p. 25 cm. (Bulletin of the National Research Council. No. 104) \$3.50. 3263

Contents: List of laboratories. Serial publications issued by industrial research laboratories. Geographical distribution of laboratories. Personnel index. Subject index to research activities.

Note: This directory, the first edition of which appeared in 1920, presents an alphabetical list of manufacturing and commercial companies which maintain laboratories, together with a considerable number of consulting laboratories. Four indexes are included as indicated in the table of contents. In compiling this directory a liberal interpretation of the term *research* has been adopted to cover the development of industrial processes, methods, equipment, and production in the broad sense. The seventh edition contains the names of 2,264 companies as against 1,769 for the sixth edition. Laboratories connected with Federal, state, or municipal governments have not been included, except the National Bureau of Standards, and laboratories in educational institutions are included only when directly supported by industry rather than by the institution. Name of company, address of laboratory, president, executive officer in charge of research, research staff, and research activities are given for each company listed.

NEWMARK, MAXIM

Dictionary of science and technology in English-French-German-Spanish, containing 10,000 current terms in the English language most frequently used in the physical sciences and their applied fields, together with separate indices in French, German, and Spanish, conversion tables, and technical abbreviations. New York: Philosophical Library, 1943. 386 p. 23 cm. \$6.00. 3264

Contents: English terms and foreign equivalents. United States and British technical abbreviations. Conversion tables. Formulas for conversion of temperature scales.

Note: A dictionary giving the French, German, and Spanish equivalents for English words and phrases used in science and technology. English terms are arranged in alphabetical order and their foreign language equivalents given. Indexes to the main list are provided in the other three languages. The work is designed to facilitate foreign-language reading and quick reference work in science and technology. It is not an exhaustive polyglot dictionary in these fields.

O'ROURKE, CHARLES EDWARD, EDITOR

General engineering handbook; editor-in-chief, Charles Edward O'Rourke. Associate editors, Thomas R. Agg, Harry Bouchard, Walter B. Carver [and others]. Second edition. New York: McGraw-Hill Book Company, Inc., 1940. 1120 p. illus. 21 cm. \$4.00. 3265

Contents: Mathematics, by Michel G. Malti. Mathematical tables, by Walter B. Carver. Physical tables, by Charles E. O'Rourke. Engineering materials, by Herbert H. Schofield and Glenn Murphy. Theoretical mechanics, by Alfred P. Poorman. Hydraulics, by Francis M. Dawson. Structural theory and design, by Edward S. Sheiry. Plain and reinforced concrete, by Charles E. O'Rourke. Foundations, by Roland P. Davis. Topographical and geodetic surveying, by Harry Bouchard. Route surveying and earthwork, by Thomas F. Hickerson. Highways, by Thomas R. Agg and Ralph A. Moyer. Municipal sanitation, by James J. Doland and Ernest W. Steel. Machine elements, by Robert C. H. Heck. Pumps, compressors and hydraulic turbines, by Robert L. Daugherty and Frederick G. Switzer. Engineering thermodynamics, by John E. Emswiler and others. Heating and air conditioning, by Charles O. Mackey. Fundamentals of electrical engineering, by Michel G. Malti. Electrical measurements, by Carlton E. Tucker. Index.

Note: A reference work for practicing engineers and students covering the elements of all branches of engineering. The purpose is not to supplant the detailed handbooks devoted to each of the special fields of engineering, but to supply a compact summary of important fundamentals so that the specialist may gain some familiarity with those divisions outside his particular field. A knowledge of general engineering theory and practice as well

as a fundamental knowledge of college mathematics is assumed. The second edition omits some of the more specialized sections of the first edition and expands the fundamental sections of mathematics, materials, mechanics, and hydraulics. There is new material on plain concrete, structural theory, engineering thermodynamics, and electrical engineering.

PARSONS, WILLIAM BARCLAY

Engineers and engineering in the Renaissance. Baltimore: The Williams & Wilkins Company, 1939. 661 p. illus. 26 cm. \$8.00. 3266

Contents (abridged): Spirit of the Renaissance. Invention and application of machines in the Renaissance. Mining engineering in the Renaissance. Municipal and governmental engineering in the Renaissance. Hydraulic engineering in the Renaissance. Structural engineering in the Renaissance. Appendices. Index.

Note: A history of the science of engineering and its practitioners during the fifteenth and sixteenth centuries with emphasis on the professional, the scientific, and the historical aspects of the subject, based on original research among documents in the Vatican Library, the Bibliothèque Nationale, and the British Museum. The development of machines and engines such as pumps, windmills, derricks, sawmills, pile drivers, and excavators is fully described, as well as the various phases of municipal engineering such as water supply, street lighting, and sewerage. Structural engineering in the Renaissance is fully dealt with, with descriptions of the erection of various bridges, churches, and public buildings. Reproductions of original design drawings and plans are an important feature.

ROBB, LOUIS ADAMS

Engineers' dictionary, Spanish-English and English-Spanish. New York: John Wiley & Sons, Inc., 1944. 423 p. 20 cm. \$6.00. 3267

Note: Although this book was planned chiefly for civil and construction engineers, it is a useful reference for chemical and other engineers as well as for architects and contractors. The dictionary features over 44,000 current technical Central, South and North American engineering terms, with their local variations as used in the 18 American republics. Plans and specifications, engineering reports, contracts, catalogs, technical magazines, and Latin-American textbooks were used in the compilation of this engineering vocabulary.

ROSEN, S. MCKEE, AND LAURA ROSEN

Technology and society; the influence of machines in the United States, with an introductory chapter by William F. Ogburn. New York: The Macmillan Company, 1941. 474 p. illus. 22 cm. \$3.00. 3268

Contents: Introduction: National policy and technology. Part I, The technologic base: Manufacture. Transportation and communication. Agriculture. Construction. Science in the professions. Part II, Economic effects: The industrialist. Labor. The farmer. Economic motives for resistance. Machines and the worker; a case study of the cigar industry. Part III, Social effects: The development of urban communities and social disorganization. The family. The comforts of life. Public resistance. Technology and human welfare; a case study of the doctor and the hospital. Part IV, Political effects: The growing services of municipal government. The changing Federal system; the states; the national government. Resistance through government. News, knowledge, and social control; a case study of government, education and radio. Conclusion: Technology and the new society. Index.

Note: A survey which brings together the relevant facts from the world of science and technology and relates these to the facts of human living. Suitable as a textbook in a survey course or orientation course in the social sciences. It is also designed for students in schools of engineering and technology as well as for the intelligent layman. The book draws a picture of the present stage of our technological development, pointing to the fact that in recent decades the machine has revolutionized our social and economic life, and illustrates the actual changes which have taken place in the community, in the family, and in our government. The widespread effects of inventions on human welfare are studied at length. Numerous bibliographic references appear at the end of each chapter.

STOKLEY, JAMES

Science remakes our world. New York: Ives

Washburn, 1942. 298 p. illus. (part col.) 23 cm. \$3.50. 3269

Contents: New frontiers. Explosives in peace and war. Fuel for tomorrow. The realm of plastics. Chemical clothes. Rubber from tree and test tube. Chemistry and the farmer. Chemicals for cures. Vitamins. New metals. Mining the ocean. The magic of glass. Higher, faster, farther. The age of electrons. Radio today and tomorrow. Light and light sources. Pictures of the future. New sounds in the theater. Into the atom. New sources of power. Appendix: Rubber and its relatives. Index.

Note: A well-written account of modern science and technology intended for the layman.

UNITED STATES. NATIONAL RESOURCES COMMITTEE

Research—a national resource. Washington, D.C.: Government Printing Office, 1938-41. 3 v. illus. 29 cm. (Report of the Science Committee of the National Resources Committee) Paper, Vol. I, \$0.50; Vol. II, \$1.00; Vol. III, \$0.20. 3270

Contents (abridged): Volume I, Relation of the Federal government to research: Report of the Science Committee. Supporting studies. Volume II, Industrial research: A report on industrial research as a national resource. Research in the national economy. Examples of research in industry. Location and extent of industrial research activity in the United States. Research abroad. Men in research. Appendix. Volume III, Business research: Growing use of research in business. Use of business studies. Position of research in company organization. Business research staff. Research methods. Presentation of studies. Research facilities. Cooperative research and employment of outside services. Appendixes. Index.

Note: These three volumes present an over-all, though admittedly incomplete, view of the extent and variety of research in the United States, measured in financial terms by an annual expenditure of several hundred of millions for research, and in terms of national productivity and general welfare. The role of the Federal government is outlined in Volume I, which describes the expenditures, amounting in 1938 to 2 percent of the total budget, for the governmental research activities. Volume II covers the continuous and increasing application of science by industry and describes various phases of research in the national economy as well as in the chemical, petroleum, communications, rubber, metals, aeronautics, and miscellaneous industries and individual companies. Bibliographies are given at the end of each chapter in this volume. The final volume presents a descriptive analysis, in a limited number of concerns, of business research work, methods, facilities and organization, applications of results, dissemination of information, and opportunities for research personnel.

Mathematics for Engineers

ANDRES, PAUL GERHARD, AND OTHERS

Basic mathematics for engineers, by Paul G. Andres, Hugh J. Miser, and Haim Reingold. New York: John Wiley and Sons, Inc., 1944. 726 p. illus. 22 cm. \$4.00. 3272

Contents: Numerical computations. Simple algebraic operations. Functions and their graphs. Trigonometric functions. The graphs of the trigonometric functions. Simple properties of vectors. Algebraic operations. Exponents and radicals. Logarithms. The fundamental relations of trigonometry. The oblique triangle. The J operator. Linear equations and determinants. Quadratic equations and equations of higher degree. The straight line. The circle, equations, and loci. Equations of the second degree: the conics. Elements of solid analytic geometry. The elements of differential calculus. The elements of integral calculus. Appendix. Index.

Note: Mainly for use in courses for beginning students of engineering. After explaining the fundamental principles of numbers and how to operate with them, including calculations with the slide rule, the text deals fully with selected topics from algebra, trigonometry, and analytic geometry. Emphasis is placed on

graphical methods, trigonometric functions, and the use of vector algebra, and the general aim is to relate mathematics as far as possible to its engineering applications.

BURINGTON, RICHARD STEVENS, AND CHARLES CHAPMAN TORRANCE

Higher mathematics, with applications to science and engineering. New York: McGraw-Hill Book Company, Inc., 1939. 844 p. illus. 23 cm. \$5.00. 3273

Contents (abridged): Differential calculus: Elementary review. Partial differentiation. Integral calculus: Indefinite integrals. Definite integrals. Riemann theory of integration. Improper integrals. Integrals containing a parameter. Special functions defined by means of definite integrals. Numerical integration. Ordinary differential equations: Elementary types. Linear equations. Singular solutions. Electrical networks. Numerical solution. Legendre's and Bessel's equations. Infinite sequences and series: Power series. Other topics. Sequences of functions. Fourier series. Orthogonal functions. Functions of a complex variable: Complex numbers. Complex integral calculus. Singularities of single-valued analytic functions. Conformal mapping. Applications. Elliptic functions. Algebra and vector analysis: Some differential geometry. Tensor analysis. Partial differential equations. Calculus of variations. Dynamics. Introduction to real variable theory. Bibliography. Index.

Note: Designed primarily to meet the growing needs of readers interested in the applications of mathematics to physics and engineering, this book emphasizes physical meanings of the various notations and relationships encountered in higher mathematics. In order that the treatment may be suited to the student of pure mathematics, emphasis has been placed upon the conditions which must be met for a given theorem or formula to be valid.

CHURCHILL, RUEL VANCE

Modern operational mathematics in engineering. New York: McGraw-Hill Book Company, Inc., 1944. 306 p. illus. 21 cm. \$3.50. 3274

Contents: The Laplace transformation. Further properties of the transformation. Elementary applications. Problems in partial differential equations. Functions of a complex variable. The inversion integral. Problems in heat conduction. Problems in mechanical vibrations. Sturm-Liouville systems. Fourier transforms. Appendixes. Index.

Note: A college text dealing with the use of the Laplace transformation in the solution of engineering and physics problems involving partial differential equations. A bibliography and tables are given in the appendixes. No previous preparation in the subject of partial differential equations is required of the student, and a year of college physics is considered sufficient background for the physical and engineering problems encountered in the text. The work is a companion volume to the author's *Fourier series and boundary value problems*, New York, 1941 (see Index).

DOHERTY, ROBERT ERNEST, AND ERNEST G. KELLER

Mathematics of modern engineering. New York: John Wiley and Sons, Inc., 1936. 2 v. illus. 23 cm. Vol. I, \$3.50; Vol. II (Ernest G. Keller), \$4.00. 3275

Contents (abridged): Volume I, Mathematics of modern engineering, by Robert E. Doherty and Ernest G. Keller: Mathematical formulation of engineering problems. Basic engineering mathematics. Vector analysis. Heaviside's operational calculus. References. Answers. Index. Volume II, Mathematical engineering, by Ernest G. Keller: Engineering dynamics and mechanical vibrations. Introduction to tensor analysis of stationary networks and rotating electrical machinery. Non-linearity in engineering.

Note: This work covers the mathematics needed to solve problems which arise in engineering practice. The material is based on theoretical engineering work and the advanced course in engineering offered to its staff members by the General Electric Company.

DULL, RAYMOND WILLIAM

Mathematics for engineers. Second edition.

New York: McGraw-Hill Book Company, Inc., 1941. 780 p. illus. 21 cm. \$5.00. 3276

Contents (abridged): Numerical computations with algebraic aids. Approximations. Algebraic notation. Linear equations. Analytical and graphical solutions. Quadratic equations. Explicit functions. Implicit quadratic functions with graphs. Simultaneous equations. Fractions. Irrational equations. Cubic functions. Polynomial functions. Power functions. Inequalities and variation. Progression. Variables, limits, and indeterminate forms. Logarithms. Exponential functions. The slide rule. Infinite series. Determinants. Permutations and combinations. Undetermined coefficients. Geometry and mensuration. Trigonometric functions. Polar coordinates. Vectors, imaginary and complex numbers. Hyperbolic functions. Solutions of trigonometric equations. The straight line. Conics. The parabola. The circle and the ellipse. The hyperbola. Parametric and polar equations. Empirical equations. Application of coordinates to geometry of three dimensions. Linear equation in three variables. Second-degree equations in three dimensions. Differential calculus. Fundamental differentiation. Differentials. Curve analysis. Expansion of functions. Partial and total differentiation. Integral calculus. Graphical integration. The definite integral. Reduction methods for integration. Summation method. Index.

Note: A convenient reference and textbook for engineers who wish to review or extend their information on those phases of mathematics specially important in engineering work.

JOHNSON, WALTER C.

Mathematical and physical principles of engineering analysis. New York: McGraw-Hill Book Company, Inc., 1944. 346 p. illus. 21 cm. \$3.00. 3277

Contents: The analysis of engineering problems. Some basic physical principles. Transient and steady-state conditions. Setting up equations. Graphical and numerical solution of differential equations. Ordinary and differential equations. Vector representation of sinusoids. The checking of equations. Dimensional analysis. Fourier series. Systems with distributed constants. Index.

Note: Presents the essential physical and mathematical principles and methods of attack that underlie the analysis of many practical engineering problems. Emphasis is placed upon physical concepts, the use of assumptions, procedures in setting up equations, the use of mathematics as a tool in accurate and quantitative reasoning, and the physical interpretation of mathematical results.

KÁRMÁN, THEODOR VON, AND MAURICE A. BIOT

Mathematical methods in engineering; an introduction to the mathematical treatment of engineering problems. New York: McGraw-Hill Book Company, Inc., 1940. 505 p. illus. 23 cm. \$4.00. 3278

Contents: Introduction to ordinary differential equations. Some information on Bessel functions. Fundamental concepts of dynamics. Elementary problems in dynamics. Small oscillations of conservative systems. Small oscillations of nonconservative systems. The differential equations of the theory of structures. Fourier series applied to structural problems. Complex representation of periodic phenomena. Transient phenomena. Operational calculus. Equations with finite differences applied to engineering. Words and phrases. Answers. Index.

Note: The object of this book is to familiarize engineering students with the special techniques used in the mathematical treatment of engineering problems. Necessary tools beyond elementary calculus are taught in direct connection with practical problems from the fields of mechanical, civil, and electrical engineering.

KEASEY, MILES ABDEL, AND OTHERS

Engineering mathematics with tables, by Miles A. Keasey, G. Alfred Kline, and D. Allison McIlhatten. Second edition. With 260 illustrations. Philadelphia: The Blakiston Co., 1937. 376 p. illus. 24 cm. \$3.50. 3279

Contents: Graphic representation. Transition from arithmetic to algebra. Simple equations. Relation between geometric figures. Products and factors. Fractions. Fractional and literal equations. Ratio, variation and proportion. Simultaneous equations of the

first degree. Powers, exponents, roots and radicals. Quadratic equations. Mensuration. Relations of the functions of angles. Solution of right triangles. Functions of angles in general. Oblique triangles. Supplementary topics, problems. Summary of formulas. Tables. Logarithms. Index.

Note: This book is designed for students who need a sound training in mathematics and who must get it in the shortest time consistent with thoroughness. The earlier chapters form a natural transition from arithmetic to secondary mathematics, and the succeeding chapters correlate algebraic, geometric, and trigonometric procedures. More than 2800 problems are included. The principal change in the second edition is the addition of 1,200 supplementary problems with answers.

REDDICK, HARRY WILFRED, AND F. H. MILLER

Advanced mathematics for engineers. New York: John Wiley & Sons, Inc., 1938. 473 p. illus. 23 cm. \$4.00. 3280

Contents: Ordinary differential equations. Hyperbolic functions. Elliptic integrals. Infinite series. Fourier series. Gamma and Bessel functions. Partial derivatives and partial differential equations. Vector analysis. Probability. Functions of a complex variable. Operational calculus. Answers to problems. Index.

Note: This textbook for third and fourth year students in civil, electrical, mechanical, and chemical engineering presupposes a thorough training in engineering mathematics through the calculus. The book is designed so that the first chapter may be used to give the background needed in ordinary differential equations, or the book may be used with the omission of this chapter in succession to a separate course in differential equations. Emphasis is placed upon physical applications by presenting, with each principal topic, problems relating to the four main fields of engineering.

SHUSTER, CARL N., AND FRED L. BEDFORD

Field work in mathematics. New York: American Book Company, 1935. 168 p. illus. 22 cm. \$1.50. 3281

Contents: The use of instruments in mathematics. Early instruments. Scale drawing. Approximate data and standard numbers. The slide rule. Linear measurement. The angle mirror. The hypsometer and the clinometer. Scouting. The plane table. The vernier. The sextant. Determination of a meridian. The transit. Methods of finding areas. Appendix. Review tests. Tables. Index.

Note: A textbook designed for teacher-training institutions, for college engineering courses or supplementary material for high school courses in science and mathematics, for teachers of geography who wish to learn how maps are made, and as a source book for practical "amateur" engineers. It deals with the practical use of a few measuring instruments which provide mathematical short-cuts in field work, and is based upon a course given at Teachers College, Columbia University.

SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION. MATHEMATICS DIVISION

Engineering problems illustrating mathematics; a project of the Mathematics Division of the Society for the Promotion of Engineering Education. John W. Cell, chairman of committee. New York: McGraw-Hill Book Company, Inc., 1943. 172 p. illus. 23 cm. \$1.75. 3282

Contents (abridged): Introduction by Robert E. Doherty. College algebra. Trigonometry. Analytic geometry. Differential calculus. Integral calculus. Index. Answers.

Note: A collection of problems selected to demonstrate the applications of mathematics to engineering. They are intended to increase the interest in mathematics of freshman and sophomore engineering students, and are supplementary to standard mathematics texts.

SOHON, HARRY

Engineering mathematics. New York: D. Van Nostrand Company, Inc., 1944. 278 p. illus. 23 cm. \$3.50. 3283

Contents: Interpolation formulas. Determinants. Dimension analysis. Complex numbers and hyperbolic functions. Algebraic equations. Approximate solutions of algebraic equations. Fourier

series. Differential equations. Gamma functions and Bessel's functions. Vector algebra. Vector calculus. Stretched string and round diaphragm. Skin effect problems. Answers to problems. Index.

Note: This book is intended for engineering students who have completed the study of the elementary calculus and for graduate engineers seeking to bolster their present knowledge of mathematics. It is intended to strengthen the student in algebra and to provide him with certain mathematical tools which depend on the calculus. The theory of determinants is taken up early in the work and together with matrix theory is used throughout the book. The method of identifying multiple roots of algebraic equations has been systematized and emphasis is placed on methods of approximating all the roots whether rational or irrational. The analysis of the result of an approximate Fourier analysis is an original work by the author.

SOKOLNIKOFF, IVAN STEPHEN, AND ELIZABETH S. SOKOLNIKOFF

Higher mathematics for engineers and physicists. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 587 p. illus. 23 cm. \$4.50. 3284

Contents: Infinite series. Fourier series. Solution of equations. Partial differentiation. Multiple integrals. Line integral. Ordinary differential equations. Partial differential equations. Vector analysis. Complex variable. Probability. Empirical formulas and curve fitting. Answers. Index.

Note: A textbook for college students who have a working knowledge of the elementary calculus and intend to specialize in physics or engineering. The emphasis is upon the practical utility of mathematics as a tool in both of these fields, and those topics are selected which are of most frequent and immediate use in applied sciences. The illustrative material is intended to point out the underlying principles rather than to afford a solution of specific problems confronting the engineer. The second edition contains additional problems, new data on infinite series and differential equations, and a new chapter on complex variables, while the discussion of improper integrals contained in the first edition has been omitted.

Applied Mechanics

AMERICAN SOCIETY FOR TESTING MATERIALS

Symposium on new methods for particle size determination in the sub-sieve range. Philadelphia: American Society for Testing Materials, 1941. 111 p. illus. 23 cm. \$1.50. 3285

Contents: Methods for determining particle size distribution, by Herbert E. Schwyer and Lincoln T. Work. Shape and surface of fine powders by the permeability method, by P. C. Carman. Surface area of Portland cement, by Paul S. Roller and P. V. Roundy, Jr. An improved hydrometer method for use in fineness determinations, by Alexander Klein. The determination of subsieve particle size distributions by sedimentations method, by S. W. Martin. The electron microscope in the determination of particle size characteristics, by James Hillier. A new method for measuring the surface areas of finely divided materials and for determining the size of particles, by P. H. Emmett. Specific surface of pigments by adsorption from solution, by Warren W. Ewing. Appendix.

Note: A collection of technical papers on various methods of measuring particle size distribution and specific surface, including discussion of theory and results of experimental research. Extensive bibliographies are also presented.

BIEHLER, RAYMOND M.

Applied mechanics. New York: Harper & Brothers, 1943. 291 p. illus. 24 cm. (Rochester technical series) \$3.25. 3286

Contents: Fundamental ideas. Force, vector quantities. Composition and resolution of vectors. Equilibrium of concurrent coplanar forces. Moments. Parallel forces. Equilibrium of parallel forces. Center of gravity. Couples. Equilibrium of coplanar systems of forces in any position or direction. Non-coplanar forces. Friction. Rectilinear motion. Composition and resolution of velocities and accelerations. Curvilinear motion and rotation. Newton's laws of motion; centrifugal force. Moment of inertia.

Work, power, and energy. Momentum, impulse, and impact. Index.

Note: A textbook for brief and concentrated courses in mechanics, designed for students who have had inadequate or limited mathematical backgrounds. It presupposes nothing beyond trigonometry. Emphasis is on the applications of the subject rather than on the theory.

BROWN, FRANK LOGAN

Engineering mechanics. Second edition. New York: John Wiley & Sons, Inc., 1942. 503 p. illus. \$4.00. 3287

Contents: Part I, Statics: General principles. Resultants of coplanar force systems. Resultants of non-coplanar force systems. Equilibrium of coplanar force systems. Plane trusses. Equilibrium of non-coplanar systems. Friction. Suspended cables. Center of gravity. Part II, Kinematics and kinetics: Rectilinear motion of a point. Curvilinear motion of a point. Kinetics of a particle. Kinetics of a body in general. Kinematics of translation. Kinetics of translation. Moment of inertia. Kinematics of rotation. Kinetics of rotation. Kinematics of plane motion. Kinetics of plane motion. Relative motion. Work. Power. Energy. Work and energy. Linear impulse and linear momentum. Angular impulse and angular momentum. Index.

Note: This volume offers an introductory treatment of the subject, characterized by emphasis on methods of solution in which reference is made to relationships set forth verbally, as principles, rather than symbolically as formulas. Explanations and discussions are thorough. An article on superelevation of curves has been added in the second edition. Almost all the problems have been changed, and there are about 200 more than there were in the first edition. The problems now total 1264. Answers to approximately half of them are supplied.

CHAMBERS, SHERMAN DANIEL, AND VIRGIL MORING FAIRES

Analytic mechanics. A revision of Mechanics of engineering. New York: The Macmillan Company, 1943. 375 p. illus. 23 cm. (Engineering science series, edited by E. R. Hedrick) \$3.75. 3288

Contents: Resultants and components. Coplanar concurrent forces. Moments and parallel coplanar forces. Non-concurrent, non-parallel, coplanar forces. Flexible cords. Friction. Graphical methods. Non-coplanar forces. Maximum and minimum forces. Centroids. Moments of inertia of areas. Moments of inertia of masses. Plane motion. Relative motion. Force systems that produce rectilinear motion. Curvilinear motion. Rotation and plane motion of rigid bodies. Balancing rotating elements. Work, kinetic energy, power. Impulse and momentum. Appendix: Review problems. Some useful equations of analytic mechanics. Index.

Note: This college textbook follows in general the organization of Chambers, *Mechanics of engineering*, but is a completely rewritten edition. More problems have been included, and explanations and discussions have been made more complete. The calculus has not been avoided, but the mathematics used is generally simple.

CONTRIBUTIONS TO THE MECHANICS OF SOLIDS; dedicated to Stephen Timoshenko by his friends on the occasion of his sixtieth birthday anniversary. New York: The Macmillan Company, 1938. 277 p. illus. 24 cm. \$5.00. 3288a

Contents: S. Timoshenko, by John M. Lessells. On a particular buckling problem, by C. B. Biezeno and J. J. Koch. Tuned pendulums as torsional vibration eliminators, by J. P. Den Hartog. On the application of Southwell's method for the analysis of buckling tests, by L. H. Donnell. Recrystallization and its effect on the forgeability of copper in the single-blow drop test, by O. W. Ellis. Kritische Drehzahlgebiete der fliegend angeordneten Scheibe, by Ludwig Föppl. On frictional effects in shrink fits, by J. N. Goodier. A method of calculating grillage beams, by M. Hetényi. Fatigue failure of railroad axles and stresses in hollow cylinders, by O. J. Horger. Analysis of strain measurements and polar diagrams for plane stress, by William Hovgaard. Zur Elastizitätstheorie der anorthotropen Platten, by M. T. Huber. Effect of a flexible first story in a building located on vibrating ground, by Lydik S. Jacobsen. On the mechanism of dry friction, by G. B. Kárelitz. Use of orthogonal functions in

structural problems, by Th. von Kármán. Dynamic stability of railway trucks, by B. F. Langer. Differential area relations in the plastic state for uniaxial stress, by C. W. MacGregor. Ueber den singulären Punkt zweiter Ordnung im ebenen Spannungsfeld, by R. von Mises. The influence of time upon creep. The hyperbolic sine creep law, by A. Nadai. Natural frequencies of torsional vibration in branched systems, by J. Ormondroyd. Methods of correlating data from fatigue tests of stress concentration specimens, by R. E. Peterson. Studien ueber die unelastische Formänderung, by L. Prandtl. Plasticity and creep in machine design, by C. Richard Soderberg. Castigliano's principle of minimum strain-energy, and the conditions of compatibility for strain, by R. V. Southwell. Analysis of plastic strain in a cubic crystal, by G. I. Taylor. Transient torques in induction motor drives, by A. M. Wahl. Hamilton's principle and the principle of least action in the solution of creep problems involving relaxation, by E. O. Waters. A laterally loaded clamped square plate with large deflection, by Stewart Way. Developments in photoelasticity, by E. E. Weibel. A problem of elasticity suggested by a problem in soil mechanics; soft material reinforced by numerous strong horizontal sheets, by H. M. Westergaard.

Note: A collection of 29 articles by men outstanding in the field of applied mechanics. Some of the papers are accompanied by brief bibliographies.

COX, GLEN NELSON

Engineering mechanics. New York: D. Van Nostrand Company, Inc., 1943. 301 p. illus. 23 cm. \$3.00. 3289

Contents: Fundamental conceptions, definitions and principles. Coplanar concurrent force systems. Coplanar non-concurrent force systems. Determination of stresses in simple structures. Non-coplanar concurrent force systems. Non-coplanar non-concurrent force systems. Friction. Centroids. Moment of inertia of plane areas. Kinematics of particles and rigid bodies. Moments of inertia of masses. Kinetics of rigid bodies. Work, energy and power. Impulse and momentum. Flexible cables. Index.

Note: This is a general-purpose college textbook, planned for use with many types of students. The calculus is used sparingly in the early chapters and much more extensively in the later ones, so that this text can be studied concurrently with a course in calculus, as well as by those students who have already completed that subject. This book states principles tersely, using illustrative problems rather than expressions to elucidate the application of the theory in particular cases.

CREW, HENRY, AND KEITH KUENZI SMITH

Mechanics for students of physics and engineering. New York: The Macmillan Company, 1930. 371 p. illus. 22 cm. \$4.00. 3289a

Contents: The statics of a particle. The statics of a rigid body. The principle of virtual work. General case of equilibrium of a rigid body. Some applications of the principles of statics. Kinematics. Work, power and energy. The units of mechanics. Some applications of the principles of kinetics. Friction. Properties of elastic bodies. Hydromechanics. Vibrations and waves. Index.

Note: A college textbook intended for a beginning one- or two-semester course, which presents the subject in more or less simplified terms and avoids the use of the calculus until about the middle of the book. The authors' aim has been to present mechanics as an experimental science, presenting some of the history of its development as well. Such topics as planetary motion, Lagrange's equations, relativity, wave mechanics, and quantum mechanics are purposely omitted as beyond the scope of a short course.

DALLA VALLE, JOSEPH MARIUS

Micromeritics; the technology of fine particles. New York: Pitman Publishing Corporation, 1943. 428 p. illus. 23 cm. \$8.50. 3290

Contents: Introduction. Dynamics of small particles. Shape and size-distribution of particles. Methods of particle-size measurement. Theory of sieving and grading of materials. Characteristics of packings. Electrical, optical, and sonic properties. Thermodynamics of particles. Chemical properties of small particles. Flow of fluids through packings. Infiltration and particle-moisture relationships. Capillarity. Determination of particle surface. Muds and slurries. Transport of particles. Theory of fine grinding. Collection and separation of particulate matter from air. Atmospheric and industrial dust. Selected bibliography. Appendix. Author index. Subject index.

Note: A guide to the behavior and characteristics of small particles, larger than colloids and subject to other laws. The author has assembled a great deal of widely scattered information on methods of particle measurement, size distribution, and characteristics of packing. Knowledge of particle-behavior has wide applications in soil and mineral physics, powder metallurgy, chemical engineering, pigment technology, and the manufacture of ceramics, clay, cement, and abrasives. An extensive bibliography is given.

FAIRMAN, SEIBERT, AND CHESTER S. CUTSHALL
Engineering mechanics. New York: John Wiley & Sons, Inc., 1938. 267 p. illus. 23 cm. \$2.75. 3291

Contents: Introduction: General principles. Equilibrium of coplanar forces. Stresses and reactions in simple structures. Equilibrium of forces in space. Friction. Centroids and center of gravity. Moment of inertia. Rectilinear motion. Curvilinear motion and rotation. Work, energy and power. Dynamics of rotating bodies. Plane motion. Impulse, momentum and impact. Index.

Note: An elementary treatment of the subject. Theory is briefly stated, and 97 solved examples are given to supplement the text. In addition there are 540 problems to be solved. Answers to all problems are given. Special note should be made of the explanation of the graphic method with the use of Bow's notation, the practical applications of the gyroscopic principle to ships, airplanes, etc., and the extended treatment of certain phases of plane motion.

GIRVIN, HARVEY FRANK

Applied mechanics. Scranton, Pa.: International Textbook Company, 1938. 336 p. illus. 23 cm. (International texts in civil engineering, C. E. O'Rourke, consulting editor) \$3.00. 3291a

Contents: Fundamental conceptions. Coplanar, concurrent force systems. Coplanar, parallel force systems. Coplanar, non-concurrent force systems—graphically. Coplanar, non-concurrent force systems—mathematical solutions. Noncoplanar force systems—graphical solutions. Noncoplanar force systems—mathematical solutions. Flexible cables. Friction. Centroids, centers of gravity. Second moments of area—moments of inertia. Second moments of mass—moments of inertia of solids. Kinematics of particle. Kinematics of rigid body. Rectilinear translation of rigid body. Curvilinear motion. Rotation. Work, energy, power. Plane motion of rigid body. Impulse, momentum. Index.

Note: A textbook for use in those engineering colleges which teach applied mechanics in the sophomore rather than in the junior year. The work attempts to simplify the subject accordingly, due consideration being made for the fact that the student has not completed the required work in physics and calculus. More space has been devoted to graphical methods of solution than is ordinarily found in books of this type, but the graphical solutions have been collected into separate chapters, which may be omitted entirely without affecting the continuity of the mathematical solutions. Other special features are the introduction of separate chapters on kinematics of a particle and kinematics of a rigid body. There are a large number of graded problems.

KARELITZ, GEORGE BORIS, AND OTHERS

Problems in mechanics, based on the original collection of I. V. Mestchersky, by G. B. Karelitz, J. Ormondroyd, and J. M. Garrelts. New York: The Macmillan Company, 1939. 271 p. illus. 23 cm. (Engineering science series, edited by E. R. Hedrick) \$2.75. 3291b

Contents (abridged): Resume of mechanics: Statics. Kinematics. Dynamics (kinetics). Problems—statics: Plane statics. Statics in space. Kinematics: Motion of a point. Motion of a rigid body. Relative motion. Rotation of rigid bodies. Dynamics: Rectilinear motion. Curvilinear motion. Motion of rigid bodies. Work and energy. Impulse and momentum. Review problems in dynamics. Appendix: Table of units. System of units. Trigonometric functions.

Note: This collection of problems for advanced students of engineering is based on the original collection published by the late I. V. Mestchersky, of the Polytechnic Institute of St. Petersburg. The original problems were reworded to suit American practice and units of measurement, and were supplemented by over 300 additional problems making a total of 782 in all.

Answers are given for a majority of them. A number of typical problems in each section are completely worked out to provide some guidance for the student in methods of approach and solution. A table of units and trigonometric functions is provided at the end of the book.

LEIGH, CHARLES WILBUR, AND JOHN FREDERIC MANGOLD

Practical mechanics and strength of material. Third edition. New York: McGraw-Hill Book Company, Inc., 1940. 498 p. illus. 19 cm. \$3.00. 3292

Contents: The three simple stresses. Welded and riveted joints. Mechanical properties of materials. Resultant and equilibrant of forces. Parallel forces and moments. Static and kinetic friction. Concurrent, noncoplanar forces. Noncurrent coplanar forces. Framed structures, roof and bridge trusses. Stability and center of gravity. Moment of inertia. Beams and beam design. Horizontal and vertical shear. Deflection, typical cases. Combined stresses, short columns. Indeterminate beams, concrete beams. Metal, timber, and concrete columns. Torsion, shafts and couplings. Appendixes—tables. Index. Answers.

Note: A presentation of the principles of mechanics and strength of materials, designed for short courses in the subject in night schools, vocational schools, and colleges, and for the use of men in construction work. Emphasis is placed upon practical relations and equations. In this third edition, the text has been rewritten and expanded, new tables have been introduced dealing with trigonometry formulas and definitions, wide-flange beams, and unequal leg angles, and new problems have been provided.

POORMAN, ALFRED PETER

Applied mechanics. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1940. 354 p. illus. 23 cm. \$2.75. 3293

Contents: Part I, Statics: Definitions and general principles. Coplanar, concurrent forces. Coplanar, parallel forces. Coplanar, nonconcurrent forces. Concurrent forces in space. Parallel forces in space. Nonconcurrent, nonparallel forces in space. Friction. Centroids and centers of gravity. Moment of inertia of areas. Part II, Dynamics: Kinematics of a particle. Kinetics of rigid bodies in rectilinear translation. Moment of inertia of masses. Rotation of rigid bodies. Any plane motion of rigid bodies. Work, energy, and power. Impulse, momentum, and impact. Index.

Note: A college textbook intended for undergraduate courses in engineering schools. Basic principles of mechanics are explained by the graphic method of solution, followed by illustrative examples which are solved in detail to show the relation between the principle of mechanics involved and the application of such principle in a specific engineering problem. A knowledge of general physics and of integral calculus is assumed. The fourth edition contains new material on moment of inertia together with new problems and a rearrangement of chapters.

SEELY, FRED B., AND NEWTON E. ENSIGN

Analytical mechanics for engineers. Third edition, rewritten. New York: John Wiley & Sons, Inc., 1941. 450 p. illus. 23 cm. \$3.75. 3294

Contents: Part I, Statics: Fundamental conceptions and definitions. Resultants of force systems. Equilibrium of force systems. Friction. First moments and centroids. Part II, Kinematics: Motion of a particle. Motion of rigid bodies. Part III, Kinetics: Force, mass, and acceleration. Work and energy. Impulse and momentum. Part IV, Special topics: Mechanical vibrations. Balancing. The gyroscope. Further study of the acceleration of a point. Governors. Appendix: Second moment. Moment of inertia. Index.

Note: The purpose of this book for engineering college students is to make clear the principles of mechanics; to build them up as much as possible from everyday experience; to apply them to concrete problems of practical value; and to emphasize the physical rather than the mathematical interpretation of the principles. The chief changes in the third edition consist of the addition of many new problems and figures; some reduction in the text discussion in the sections on statics, kinematics, and kinetics, although the number of problems in these parts has been increased; more emphasis on variable forces in Part III (Kinetics); and the addition of a chapter on mechanical vibrations in Part IV.

SINGER, FERDINAND LEON

Engineering mechanics. New York: Harper & Brothers, 1943. 482 p. illus. 24 cm. \$4.00. 3295

Contents: Principles of statics. Resultants of force systems. Equilibrium of force systems. Analysis of structures. Force systems in space. Friction. Centroids and centers of gravity. Moments of inertia. Principles of dynamics. Rectilinear translation. Curvilinear translation. Rotation. Plane motion. Work and energy. Impulse and momentum. Mechanical vibrations. Graphic methods. Summary. Index.

Note: This text for college students offers a clear presentation of the fundamental principles of statics and dynamics, with the emphasis on the physical understanding of these principles rather than on routine rules. The physical interpretation of equations is stressed, and wherever possible they are interpreted in terms of their geometrical equivalents. Numerous illustrative problems are provided, and there are some 750 problems for assignment. Nearly 700 figures are included.

THEODORE VON KÁRMÁN ANNIVERSARY VOLUME; contributions to applied mechanics and related subjects, by the friends of Theodore von Kármán on his sixtieth birthday. Pasadena, Calif.: California Institute of Technology, 1941. 337 p. illus. 28 cm. \$3.75. 3295a

Contents: Some definite integrals occurring in aerodynamics, by H. Bateman. On the geometry of streamlining, by Max M. Monk. Dimensional analysis and similitude in mechanics, by J. C. Hunsaker. Impulse and momentum in an infinite fluid, by Theodore Theodorsen. Coriolis and the energy principle in hydraulics, by Boris A. Bakhmeteff. The influence of bottom topography on ocean currents, by H. U. Sverdrup. Ionization as a factor in fluid mechanics, by W. F. Durand. Isotropic turbulence in theory and experiment, by Hugh L. Dryden. The intrinsic theory of elastic shells and plates, by J. L. Synge and W. Z. Chien. The compressibility of solids under extreme pressures, by Francis D. Murnaghan. Hydrodynamics and the structure of stellar systems, by F. Zwicky. On the elastic distortion of a cylindrical hole by a localized hydrostatic pressure, by H. M. Westergaard. On the absorption of sound waves in suspensions and emulsions, by Paul S. Epstein. On a method for the solution of boundary-value problems, by R. Courant. The engineering treatment of ring or wheel problems, by Karl Arnstein. On the five-dimensional representation of gravitation and electricity, by A. Einstein, V. Bargmann, and P. G. Bergmann. The forced vibrations of tie-rods, by S. Timoshenko. A note on the effect of the wind-tunnel size on pitching moments, by Th. Troller. The creep of metals under various stress conditions. On the minimum buckling load for spherical shells, by K. O. Friedrichs. The theory of flow through centrifugal pumps, by William Bollay. The ideal performance of curved-lattice fans, by Frank L. Wattendorf. Stress concentrations due to elliptical discontinuities in plates under edge forces, by L. H. Donnell. On lubrication flow with periodic distribution between prescribed boundaries, by Hans Reissner. Some remarks on the laws of turbulent motion in tubes, by R. V. Mises. Stress pattern crazing, by Wolfgang B. Klemperer.

Note: The scientific papers presented in this volume are the contributions of a number of von Kármán's close friends who are outstanding workers in the field of applied mechanics. References are given at the end of each paper, and there is a bibliography of the published works of Theodore von Kármán.

TIMOSHENKO, STEPHEN, AND D. H. YOUNG

Engineering mechanics. Second edition. New York: McGraw-Hill Book Company, Inc., 1940. 523 p. illus. 23 cm. \$4.00. 3296

Contents: Principles of statics. Concurrent forces in a plane. Parallel forces in a plane. General case of forces in a plane. Concurrent forces in space. Couples and parallel forces in space. General case of forces in space. Principle of virtual displacements. Principles of dynamics. Rectilinear translation. Curvilinear translation. Rotation of a rigid body about a fixed axis. Plane motion of a rigid body. Relative motion. Appendix. Index.

Note: A textbook in elementary mechanics for engineering students, emphasizing the fundamental principles, the various methods of solving theoretical problems, and their applications to practical engineering problems encountered in specialized fields. A knowledge of calculus is assumed, particularly for dynamics, where equations of motion are handled as differential

equations. The second edition represents a reduction to one volume of the original two-volume work, plus several changes in arrangement of material.

Vibration

BERNHARD, RUDOLF KARL

Mechanical vibrations, theory and applications; an introduction to practical dynamic engineering problems in the structural field. New York: Pitman Publishing Corporation, 1943. 139 p. illus. 23 cm. \$3.00. 3296a

Contents: Introduction. General definitions. Observation of harmonic vibrations in simple phenomena. Girder and measuring instrument considered as simple pendulum. Damping. Forced vibrations. Diagram of an instrument considered as result of forced vibrations. Usefulness of mechanical instruments. Discussion of vibration phenomena due to forced vibrations. Coupled vibrations. Superposition of harmonic vibrations. Harmonic analysis. Resonance effect of girders. Magnitudes and limits of quantities to be measured. Requirements for measuring instruments. Sources of errors. Calibration of measuring instruments. Typical dynamic recording instruments. Other methods. Summary of practical applications. Bibliography. Index.

Note: An introduction for students and practicing engineers who have not studied dynamics. The book summarizes important facts and emphasizes experiments with simple models for easy visualization. Part I treats physical phenomena and their significance; Part II treats measuring technique, typical dynamic measuring instruments, and dynamic testing methods.

CAIN, BASIL S.

Vibration of rail and road vehicles. New York: Pitman Publishing Corporation, 1940. 258 p. illus. 22 cm. \$5.00. 3296b

Contents: Vibration theory. Principles of mechanics. Vibrations of systems with one degree of freedom. Simple harmonic motion. Systems with two degrees of freedom. Systems with spring constants which vary with time. Helical springs. Rubber springs. Riding comfort. Solution of differential equations. Automobiles. Static measurements. Dynamic measurements. Spring suspension and weight distribution. Shimmy. Engine mounting. Street cars. Street car vibrations. Railroad vehicles. Relation between wheels and track. Motion of trucks on straight track. Motion of trucks on curves. Frequency of vibration of locomotives. Railway passenger cars. Vibration of car bodies. Rail vibration. References. Index.

Note: Fundamental principles established as clearly and simply as possible in the first part of the book are put to practical use in many important applications. Includes results of investigation by automobile companies, the Electric Railway Presidents' Conference Committee, the Transit Research Corporation, railroads, laboratories, and many expert engineers. Of use to designing, operating, and research engineers in every branch of transit or transportation and to vibration specialists in all fields.

DEN HARTOG, JACOB PIETER

Mechanical vibration. Second edition. New York: McGraw-Hill Book Company, Inc., 1940. 448 p. illus. 23 cm. \$5.00. 3296c

Contents: I, Kinematics of vibration. II, The single degree of freedom system. III, Two degrees of freedom. IV, Many degrees of freedom. V, Multicylinder engines. VI, Rotating machinery. VII, Self-excited vibrations. VIII, Systems with variable or non-linear characteristics.

Note: While dealing with vibration phenomena in a thoroughly technical manner, this text emphasizes the many applications of principles and calculations to the practical vibration problems encountered by the practicing engineer. Complete explanations and proofs are given, but without employing mathematics higher than simple differentiations and integrations. Answers to the problems are furnished, and there is a bibliography.

FREBERG, CARL ROGER, AND E. N. KEMLER

Elements of mechanical vibration. New York: John Wiley & Sons, Inc., 1943. 193 p. illus. 22 cm. \$3.00. 3296d

Contents: Introduction. Vibrations without damping: Free vibrations of spring and weight without damping; examples of free vibration without damping; forced vibrations without damping. Damped vibrations: Free vibrations with viscous damping; forced vibration with damping; steady-state forced vibrations with small damping. Vibration of systems with several degrees of freedom. Vibration isolation and absorption. Equivalent systems. The mobility method. Mechanical and electrical models of vibration systems. Bibliography. Answers. Index.

Note: The more elementary phases of vibration are discussed in detail and reduced to a form in which they can be applied to everyday problems. There is a wide selection of the type of practical problems solvable through the use of simple forms of differential equations and other methods. These problems cover isolation of equipment and determination of natural frequencies of many different types of systems. Methods of solution are explicitly explained and illustrated so that they may be quickly grasped by engineers without training in advanced mathematics. The appendix includes data and types of physical properties and strength of materials.

KIMBALL, ARTHUR LIVINGSTONE

Vibration prevention in engineering. One of a series written in the interest of the advanced course in engineering of the General Electric Company. New York: John Wiley & Sons, Inc., 1932. 145 p. illus. 24 cm. \$2.50. 3296e

Contents (abridged): Vibratory motion in general. Simple linear vibration. Vibration of loaded cantilever. Simple torsional vibration, moment of inertia. Solution of vibration problems by the use of complex quantities with applications. Longitudinal and flexural vibrations of rods. Theorems on the rotation and translation of rigid bodies and applications. Critical speeds of rotors. Turbine wheel vibrations. Balance of rigid rotors. General theory of vibration damping. Shaft whirling due to internal friction and to oil action in journal bearings. Measurement of damping constants of solid materials. Vibration damping in turbine buckets. Index.

Note: This work is intended for the use of graduate and practicing engineers. The treatment is concise and is intended to enable the book's readers to visualize the fundamental laws and theories as well as to solve practical engineering problems.

MYKLESTAD, NILS O.

Vibration analysis. New York: McGraw-Hill Book Company, Inc., 1944. 303 p. illus. 21 cm. (McGraw-Hill publications in aeronautical science) \$3.50. 3296f

Contents: Preface. List of symbols. Introduction. Fundamentals. Undamped vibrations of systems of one degree of freedom. Damped vibrations of systems of one degree of freedom. Vibrations of systems with more than one degree of freedom. Applications to important practical problems. Appendix. Index.

Note: A text for courses in vibration analysis. The first half of the book discusses the theory of the subject and the various phases of vibration phenomena. The remaining sections outline methods for the solution of vibration problems, particularly those relating to airplane structures. Each chapter contains several worked examples, practice problems, and review questions.

TIMOSHENKO, STEPHEN

Vibration problems in engineering. Second edition. New York: D. Van Nostrand Company, Inc., 1937. 470 p. illus. 23 cm. \$5.50. 3296g

Contents: Harmonic vibrations of systems having one degree of freedom. Vibration of systems with non-linear characteristics. Systems with variable spring characteristics. Systems having several degrees of freedom. Torsional and lateral vibration of shafts. Vibration of elastic bodies. Vibration measuring instruments. Index.

Note: This book develops from fundamental mechanical principles the methods of solving many practical engineering problems involving vibration. It deals with the balancing of machines, the torsional vibration of shafts and of geared systems, the vibrations of turbine blades and turbine discs, the whirling of rotating shafts, the vibrations of railway track and bridges under the action of rolling loads, the vibration of foundations, and many related topics. Each problem is illustrated, and each step

in its solution is explained. The second edition contains new problems and solutions, and new material on forced vibration, self-excited vibration, the method of successive approximations in dealing with free and forced vibrations in non-linear systems, and on viscous damping and damping vibration absorbers.

Hydraulics

AMERICAN SOCIETY OF MECHANICAL ENGINEERS

Fluid meters. Report of A. S. M. E. Special Research Committee on Fluid Meters. New York: The American Society of Mechanical Engineers, 1931-37. 3 v. illus. 26 cm. Part I, paper, \$3.00; Part II, paper, \$1.75; Part III, paper, \$1.50. 3297

Contents (abridged): Part I, Theory and application. Section A, Classification and nomenclature. Section B, The theory and fundamentals of fluid measurements. Section C, Physical constants and meter coefficients for use in metering fluids with head meters. References. Index. Index to illustrations. Part II, Description of meters. Head meters. Area meters. Head-area meters. Thermal meters. Part III, Selection and installation. Section I, Selection of type of meter. Types of meters commercially available. Section II, Installation of fluid meters.

Note: Part I is available in a fourth edition, published 1937; Part II in the first edition, 1931; and Part III, first edition, 1933. The fourth edition of Part I has been changed considerably from the preceding editions. The arrangement was changed and certain parts of the text were revised. The work is designed as a reference book on fluid meters of all kinds, covering practical information such as formulas, constants, physical principles of design and operation, and other data of interest to students, designing engineers, and inventors. The work is illustrated with reproductions of graphs and tables.

BAKHMETEY, BORIS ALEKSANDROVICH

Hydraulics of open channels. New York: McGraw-Hill Book Company, Inc., 1932. 329 p. illus. 23 cm. (Engineering Societies monographs) \$4.00. 3298

Contents: Part I, Theory of gradually varied flow. Part II, Practical applications. Part III, The hydraulic jump.

Note: A comprehensive treatment of the more advanced features relating to flow of water in open channels, such as backwater and other surface curves, the hydraulic jump and other topics of varied flow.

BAKHMETEY, BORIS ALEKSANDROVICH

The mechanics of turbulent flow. Second edition. Princeton: Princeton University Press, 1941. 116 p. illus. 23 cm. \$2.50. 3299

Contents: Foreword, by Professor Lewis F. Moody. Fundamental notions. Mechanics of turbulent flow. Kármán's theory of the turbulent flow pattern. Final formulae for flow in pipes. Outlook for the future.

Note: A second printing of the lectures Professor Bakhmetev delivered under the William Pierson Field Foundation at Princeton University in February 1935, first published in 1936. They deal with recent advances in our knowledge of turbulent flow; in particular the work of Prandtl and von Kármán is made available to English-speaking mechanical engineers. Higher mathematics is avoided in the presentation.

CHURCH, AUSTIN H.

Centrifugal pumps and blowers. New York: John Wiley & Sons, Inc., 1944. 308 p. illus. 22 cm. \$4.50. 3299a

Contents: Introduction. Principles of fluid flow. Basic theory of pumps and blowers. Specific speed and efficiency of pumps. Performance curves and cavitation of pumps. Design of radial-type pump stage. Other pump impeller types. Pump details and materials. Pump applications and selection. Pump installation, operation, and test. Thermodynamic principles. Classification and

performance curves of blowers. Design of radial-type blower stage. Construction details of blowers. Blower applications. Regulation of blowers. Blower installation, operation, and test. Disk stresses. Critical speeds. Index.

Note: This book presents basic principles of design, construction, and application along conventional lines of present-day practice. The treatment follows through the complete design of both a blower and a pump, including the design of the installation. The book incorporates many of the most important recent experimental results and data. For greater range in application, the data are applied to the average rather than to specialized types of installation. Valuable charts, diagrams, and tables are supplied.

DAUGHERTY, ROBERT LONG

Hydraulics; a text on practical fluid mechanics. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1937. 460 p. illus. 23 cm. \$3.50. 3300

Contents: Properties of fluids. Intensity of pressure. Hydrostatic pressure on areas. Dams. Kinematics of fluid flow. Dynamics of fluid flow. Applications of hydrokinetics. Friction losses in pipes. Flow through pipes. Uniform flow in open channels. Nonuniform flow in open channels. Unsteady flow. Dynamic forces. Description of the impulse wheel. Theory of the impulse wheel. Description of the reaction turbine. Theory of the reaction turbine. Turbine laws and factors. Water power plants. The centrifugal pump. Appendix.

Note: A standard engineering textbook which offers a concise treatment of fundamental principles and a clear presentation of a true physical conception of the subject. In the present edition the treatment has been generalized to apply to all fluids, whether gases or liquids, or whether compressible or incompressible.

DAVIS, CALVIN VICTOR, EDITOR

Handbook of applied hydraulics. New York: McGraw-Hill Book Company, Inc., 1942. 1084 p. illus. 23 cm. \$7.50. 3301

Contents: Preface. List of contributors. Hydraulic formulas, by W. L. Voorduin. Hydrology, by Clarence S. Jarvis. River regulation by reservoirs, by Theodore T. Knappen and Calvin V. Davis. Gravity dams, by Calvin V. Davis. Arch dams, by Ivan E. Houk. Buttress dams, by Edgar H. Burroughs. Earth dams, by Theodore T. Knappen. Rock-fill dams, by I. C. Steele. Spillways and stream-bed protection works, by Emory W. Lane. Spillway crest gates, by James S. Bowman. High-pressure outlet works, by Phillip A. Kinzie. Canals, flumes, covered conduits, tunnels, and pipe lines, by Julian C. Hinds. Hydroelectric plants, by John C. Stevens. Hydraulic machinery, by Lewis F. Moody. Water supplies, by Thomas R. Camp. Water distribution, by Thomas R. Camp. Water treatment, by Thomas R. Camp. Sewerage, by Samuel A. Greeley and William E. Stanley. Sewage-treatment hydraulics, by Samuel A. Greeley and William E. Stanley. Irrigation, by Ivan E. Houk. Irrigation structures, by Ivan E. Houk. Drainage, by George W. Pickels. Hydraulic models, by George H. Hickox. Index.

Note: General reference volume intended for both engineers and engineering students, presenting the fundamental principles and practical applications of those principles by examples based on recently constructed projects.

FOLSE, JULIUS AUDREY

A new method of estimating stream-flow, based upon a new evaporation formula. Washington, D.C.: Carnegie Institution of Washington, 1930. 237 p. illus. 20 cm. (Carnegie Institution of Washington. Publication no. 400) Paper, \$5.00; cloth, \$6.00. 3302

Contents (abridged): Part I, A new evaporation formula: Final form of observation equation used for determining evaporation. Examples of computation of known quantities. Principal facts from the two final evaporation solutions. Summary of general conclusions. Appendix. Tables. Part II, A new method of estimating stream-flow: Forms of observation equations. Method of converting constants of stream-flow formulas to percentages. Examples of computation. Tests of over-all accuracy of computed stream-flow. General resume of theory. Applications. Tables. Index.

Note: A summary of the research made by the author and J. F. Hayford into the laws governing the amount of stream-flow, and a formulation for the engineering profession of new data for use in controlling river waters for power, flood control, etc.

FREEMAN, JOHN RIPLEY

Experiments upon the flow of water in pipes and pipe fittings made at Nashua, New Hampshire, June 28 to October 22, 1892. New York: The American Society of Mechanical Engineers, 1941. 349 p. illus. 30 cm. \$8.00. 3302a

Contents (abridged): Part I, Description of experiments: Reasons for undertaking experiments. Locality. Source of water. Apparatus. Part II, Computation of results: Original. Re-computation. The Reynolds' number. Pressure drop in a reach tested. Length of reach tested. Part III, Experiments on a straight pipe. Part IV, Experiments on pipe fittings. Part V, Experiments on smooth nozzles. Part VI, Sketches and schedules of straight pipe, also notes on the interior surface. Part VII, Sketches and schedules of pipe for reaches containing pipe fittings, also cross-sectional drawings of the fittings.

Note: This work presents in detail the findings of extensive experiments into the flow of water in commercial pipes and fittings. It is particularly noteworthy for its studies of the effects of the spacing of fittings. Although 49 years elapsed between the performance of the experiments and publication of the book, most of the results are still applicable because manufactured pipe has not changed materially. Before publication, Dr. Clifford P. Kittredge rechecked notes from the original data and worked out conclusions from the experiments.

GROVER, NATHAN CLIFFORD, AND ARTHUR WILLIAM HARRINGTON

Stream flow; measurements, records and their uses. New York: John Wiley & Sons, Inc., 1943. 363 p. illus. 23 cm. \$4.00. 3303

Contents: Precipitation and runoff. Ground water. Quality of water. Physical control of rivers. Governmental and legal control of rivers. Utilization of rivers. Records of river discharge and their utility. Methods and instruments for measuring and recording stream flow. Functions and characteristics of gaging stations. Establishment of gaging stations. Control sections. Installation of gages. Structures from which discharge measurements are made. Operation of gaging stations. Computing and preparing records for publication. Analysis and presentation of stream-flow records for specific use. Governmental publication of river records. Special reports. Organization in field and office. Coordination in administration and financing. Index.

Note: This book treats primarily of the instruments, equipment, and processes employed in the field work related to the collection of systematic records of river discharge, and of the office procedures utilized in computing, checking, and preparing such records for publication and use. Numerous references are given to reports and discussions in current engineering literature.

HYDRAULIC INSTITUTE

Code for the measurement of water using standard ISA orifices with free discharge (for use in field testing). Prepared by Standards Committee, Deep Well Turbine Section, Hydraulic Institute, assisted by Engineering Department, University of California. New York: Hydraulic Institute, 1941. 26 p. illus. 28 cm. Paper, \$1.00. 3303a

Contents (abridged): Application of the meter: The free-discharge ISA orifice meter. Manometer. Test procedure. Computations. Accuracy. Construction specifications. Special instructions for orifice plate. Calibration. Materials. Charts and tables.

Note: Presents the Hydraulic Institute code for the measurements of the volumetric rate of flow of water at normal atmospheric or groundwater temperatures by means of standard ISA (International Standards Association) orifices discharging freely into the atmosphere at the end of a pipeline. The code proposes, for the sake of uniformity, a single preferred construction. There are six flow-rating charts and four tables of tolerances and dimensions.

KING, HORACE WILLIAMS

Handbook of hydraulics for the solution of hydraulic problems. Third edition. New York: McGraw-Hill Book Company, Inc., 1939. 617 p. illus. 17 cm. \$4.00. 3304

Contents: Hydraulic units. Hydrostatics. Orifices, gates, and tubes. Sharp-crested weirs. Weirs not sharp-crested. Pipes. Open channels with uniform flow. Open channels with non-uniform flow. Measurement of flowing water. Natural streams. Tables. Index.

Note: A manual for college students and practicing engineers covering the solution of hydraulic problems and giving in compact form the tables and reference data commonly required in hydraulic engineering. The third edition contains revised and enlarged text and tables on uniform and non-uniform flow in open channels.

KING, HORACE WILLIAMS, AND OTHERS

Hydraulics, by Horace W. King, Chester O. Wisler, and James G. Woodburn. Fourth edition. New York: John Wiley & Sons, Inc., 1941. 303 p. illus. 23 cm. \$2.75. 3305

Contents: Fundamental properties of fluids. Principles of hydrostatic pressure. Hydrostatic pressure on surfaces. Relative equilibrium of liquids. Fundamentals of fluid flow. Orifices, tubes, and weirs. Pipes. Open channels. Hydrodynamics. Index.

Note: Fundamental principles of hydraulics are stressed in this book, and their application in engineering is shown. Only elementary mathematics is used. The theory is amply illustrated by practical problems inserted in the text; answers to these problems are given at the back of the book. At the ends of chapters are lists of general problems, without answers. The fourth edition features a study of the flow of water and other incompressible fluids, including a discussion of non-uniform flow in open channels.

KING, HORACE WILLIAMS

Manning formula table, for the solution of pipe problems; giving diameters in inches corresponding to different rates of loss of head and different degrees of roughness of pipe surfaces. New York: McGraw-Hill Book Company, Inc., 1937-39. 2 v. 23 cm. Vol. I, \$5.00; Vol. II, \$5.00. 3306

Note: Volume II has a variant title as follows: *Manning formula tables for solving hydraulic problems: flow in open channels*. The work is designed as a reference book for hydraulic engineers; each volume, a complete unit in itself. The first volume presents a tabular solution of the Manning formula throughout the range of conditions ordinarily encountered in pipe problems, the values given being applicable to sewers and drain tile as well as pressure pipes. The second volume contains a second table providing the solution of open channel flow problems based on the same formula.

KRISTAL, FRANK ALBERT, AND F. A. ANNETT

Pumps; types, selection, installation, operation, and maintenance. New York: McGraw-Hill Book Company, Inc., 1940. 339 p. illus. 23 cm. \$3.50. 3306a

Contents: Reciprocating pumps. Volute-type centrifugal pumps. Diffuser-type centrifugal pumps. Turbine pumps. Propeller pumps. Rotary pumps. Deep-well pumps. Boiler-feed pumps. Sewage and sludge pumps. Variable-displacement and proportioning pumps. Methods of priming pumps. What is head on a pump? Economical pipe size for pumps. Pump operation. Drives for pumps. Pump selection, installation and operation. Centrifugal-pump troubles and remedies. New pumps for old.

Note: A practical treatment of pumping problems for the designer, manufacturer, sales representative, operator, and student. Types and designs of pumps are described; and such important applications as boiler feed, deep wells, pumps, and sewage are given an extended treatment. The book tells what may be expected by way of performance of the various types, as well as their service limitations. Extensive treatment has also been given to pump installations, operation and supervision, and troubles and their remedies.

MEAD, DANIEL WEBSTER

Hydraulic machinery. New York: McGraw-Hill Book Company, Inc., 1933. 396 p. illus. 23 cm. \$4.00. 3306b

Contents: Introduction. Energy. Energy of motion. Efficiency. Duty. Detailed analysis of energy losses. Losses in various machines and appurtenances. Power and transmission systems. Pumping machinery—general conditions. Direct lift or bucket pump. Reciprocating pumps. Work in the cylinders of reciprocating pumps. The use of steam for pumping. Centrifugal pumps. The air lift pump. Siphon. The hydraulic ram.

Note: This book is planned for the use of engineers interested in the selection, installation, operation, or maintenance of hydraulic machinery, rather than its design.

O'BRIEN, MORROUGH PARKER, AND GEORGE H. HICKOX

Applied fluid mechanics. New York: McGraw-Hill Book Company, Inc., 1937. 360 p. illus. 23 cm. \$3.50. 3306c

Contents: Equilibrium in fluids; hydrostatics. Flow phenomena. Frictionless flow. Viscosity, turbulence, and friction. Weirs, orifices, and gates. Forces exerted by fluids. Steady flow in hydraulic pipelines. Unsteady flow in pipelines. Flow in open channels. Models of open-channel flow. Physical properties of fluids. Hydraulic tables. Index.

Note: An introductory college textbook for engineering students covering the usual problems of hydraulics. The authors generalize the treatment wherever possible in such a way as to make the resulting equations applicable to the flow of all true fluids. Throughout, the text stresses engineering problems from the standpoint of modern concepts of fluid mechanics, including internal as well as external forces.

PENNSYLVANIA UNIVERSITY. BICENTENNIAL CONFERENCE

Fluid mechanics and statistical methods in engineering. Philadelphia, Pa.: University of Pennsylvania Press, 1941. 146 p. illus. 23 cm. \$1.75. 3306d

Contents: Fluid mechanics: The role of transition from laminar to turbulent flow in fluid mechanics, by Hugh L. Dryden. Problems of flow in compressible fluids, by Theodore von Kármán. Investigations of liquid turbulence and suspended material transportation, by Anton A. Kalinske. Mass transfer and friction in turbulent flow, by Thomas K. Sherwood. Statistical methods in engineering: Contribution of mathematical statistics to scientific methodology, by Samuel S. Wilks. Contribution of statistics to the science of engineering, by Walter A. Shewhart. Contribution of statistics to the development and use of purchasing specifications and standards of quality, by Leslie E. Simon. The relation of statistical quality standards to law and legislation, by Roscoe Pound.

Note: Eight technical papers by leading American specialists on various aspects of engineering statistics and fluid mechanics, prepared for the Bicentennial Conference of the University of Pennsylvania. There are short bibliographies following three of the papers.

POWELL, RALPH WATERBURY

Mechanics of liquids; an elementary text in hydraulics and fluid mechanics. New York: The Macmillan Company, 1940. 271 p. illus. 23 cm. \$3.50. 3307

Contents: Hydrostatics. Fundamentals of fluid flow. Orifices, tubes, nozzles and weirs. Pipe flow. Flow in open channels. Effect of viscosity. Models. Appendixes: Properties of liquids, with tables. Dimensional analysis. Rational basis for Nikuradse's formulas. Stream gaging. Index.

Note: Emphasis has been placed on the mastery of principles rather than on detailed facts and rules of practice necessary in actual engineering work. The treatment is historical in order, starting with the pioneering work of Archimedes, Stevin, Torricelli, and the Bernoullis, and finishing with the work of such men as Reynolds, Prandtl, von Kármán, and Nikuradse. The book is intended for students in engineering colleges.

RUSSELL, GEORGE EDMOND

Hydraulics. Fifth edition. New York: Henry Holt and Company, 1942. 468 p. illus. 24 cm. \$4.25. 3308

Contents: Properties of fluids. Hydrostatics. Effects of translation and rotation. Fluid motion, general theorems and criteria. Flow through orifices. Short tubes and nozzles. Flow over weirs. Flow through pipes. Flow in open channels. Dynamics of fluids in motion. Hydraulic turbines—description of power plants and turbines. The tangential turbine. Reaction turbines. Centrifugal pumps. Appendixes: The free vortex. A brief explanation of the English and metric systems, both absolute and gravitational. Natural trigonometric functions. Index.

Note: In the present revision of this text, new material has been introduced and the order of presentation has been changed to make the development of the subject more logical. After the derivation of the Bernoulli theorem for compressible and incompressible fluids, the problems of fluid flow are approached by a clear discussion of viscosity, laminar and turbulent flow, laws of similarity, and the Reynolds and Froude numbers as important criteria. Thus a background is furnished for the later correlation of phenomena and experimental data. Earlier editions were entitled *Textbook on hydraulics*.

SCHODER, ERNEST WILLIAM, AND FRANCIS M. DAWSON

Hydraulics. Second edition. New York: McGraw-Hill Book Company, Inc., 1934. 429 p. illus. 23 cm. \$3.50. 3309

Contents (abridged): Part I, Hydrostatics: Pressure heads, pressures, and balancing columns. Total liquid pressure against submerged surfaces. Stability of gravity dams. Air and gases, static conditions. Buoyancy and flotation. Part II, The flow of fluids: The flow of liquids through orifices. Converging and diverging flows. Bernoulli's theorem. The flow of water over weirs. Exponential laws of variation, and percentage effects due to small changes in the variables. Steady uniform flow of fluids in pipes and open channels. Exponential formulas and diagrams for flow of water in pipes. Equivalent, compound, looping, and branching pipes. Uniform flow of water in open channels. Deviated flow. Nozzle-type water turbines. Water turbines. Centrifugal pumps. Index. Appendixes.

Note: A standard text for basic courses in engineering colleges. The viewpoint is that of the engineer. This edition has been extensively revised and somewhat expanded. New problems, illustrations, and references to literature have been added.

SHAW, G. V., AND A. W. LOOMIS, EDITORS

Cameron hydraulic data. A handy reference on the subjects of hydraulics, steam, and water vapor. Eleventh edition. New York: Ingersoll-Rand Company, Cameron Pump Division, 1942. 240 p. illus. 19 cm. \$3.00. 3310

Contents: Hydraulics. Water data. Miscellaneous liquids. Steam data. Electric data. Miscellaneous data. Index.

Note: This brief handbook presents an accumulation of data useful in work involving the handling of liquids, steam, and water vapor, for engineers and designers of pipe systems. Viscosity, pumping, static head and lift, dynamic head and lift, hydraulic horsepower, efficiency, friction losses in pipes, thermal properties of water, flow through orifices and weirs, Saybolt Universal and absolute viscosity data, steam tables, condensers, turbine efficiencies, motor speed, efficiencies, and power-factor are among the subjects dealt with in chart and tabular form. The eleventh edition contains new material on flow of liquids in pipes.

UNITED STATES. BUREAU OF RECLAMATION

Hydraulic and excavation tables. Eighth edition. Washington, D.C.: Government Printing Office, 1940. 173 p. illus. 18 cm. \$1.50. 3310a

Contents: Preface. Explanation of tables. Tables 1-49. Index.

Note: This is the eighth edition of a manual originally issued in 1905. It is published primarily for the official use of engineers of the Bureau of Reclamation. As it contains tables available nowhere else in print, it has also been made available to other engineers engaged in similar lines of work. In the new edition all reported errors have been checked and corrections made.

UNITED STATES. WORK PROJECTS ADMINISTRATION. MATHEMATICAL TABLES PROJECT

Hydraulic tables. Second edition. Prepared under direction of the Chief of Engineers, U.S. Army, by the Mathematical Tables Project, Federal Works Agency, Work Projects Administration for the City of New York, O.P. 265-2-97-11. National Bureau of Standards, sponsoring agency. Washington, D.C.: Government Printing Office, 1944. 565 p. 17 cm. \$1.00. 3311

Note: This book contains 46 hydraulic tables especially applicable to the solution of problems of open channel flow. The first three tables are extensions of tables 106, 121, and 133 of Horace Williams King's *Handbook of hydraulics*, New York: McGraw-Hill Book Co., Inc., 1939 (see Index). The next twelve tables are extensions of tables 14 to 18 inclusive, and table 47 of United States Department of the Interior, Bureau of Reclamation's *Hydraulic and excavation tables*, Washington, D.C.: Government Printing Office, 1940 (see Index). The remaining tables in the present work are original. All have been prepared and published primarily for the use of the various offices of the Corps of Engineers, U.S. Army, in connection with the design of flood protection works. The range of many existing tables had been found inadequate for the large rivers, great depths, and steep slopes encountered in flood control work. The new tables will be especially useful in solving the Manning formula in its various forms.

WOODWARD, SHERMAN MELVILLE, AND CHESLEY J. POSEY

Hydraulics of steady flow in open channels. New York: John Wiley and Sons, Inc., 1941. 151 p. illus. 23 cm. \$2.75. 3312

Contents: Introduction. Bernoulli's theorem applied to a frictionless rectangular open channel. The stationary hydraulic jump in channels of rectangular cross section. Criteria of flow and the hydraulic jump in channels of non-rectangular cross section. The moving hydraulic jump. Backwater curves—introductory. Backwater curves in uniform channel. Analysis of flow problems. Step methods for backwater curves. Bends, transitions, and obstructions. Slowly varied flow. Index.

Note: The language in this book is succinct and the treatment is simple. Terms are clearly stated and defined. Basic hydraulics of open channel flow are clearly developed and illustrated. The results of much research, never before published, are included. New and convenient tables for solving uniform flow problems by Manning's formula are given. The important methods for computing backwater curves are described and classified with respect to their relative merits for different types of problems. A treatment of flow around bends and through obstructions such as bridge piers is included. The textual material is amplified by many practical illustrative problems, and there are additional problems with which the reader can test his grasp of the material.

Engineering Materials

AMERICAN SOCIETY FOR TESTING MATERIALS

1942 book of A.S.T.M. standards, including tentative standards; a triennial publication. Philadelphia: American Society for Testing Materials, 1943. 3 v. 23 cm. \$9.00. 3313

Contents (abridged): Part I: Metals. Ferrous metals: Wrought iron. Cast and malleable iron. Ferro-alloys. Magnetic properties. Ferrous metals, general methods of testing. Non-ferrous metals: Electrical-heating and electrical-resistant alloys. Non-ferrous metals, general methods of testing. Metallography, general testing methods. Emergency standards. Tentative standards. Tentative revisions of standards. Part II: Nonmetallic materials—constructional: Cementitious materials. Masonry building units, stone, and slate. Mortar for unit masonry. Fire tests. Thermal insulating materials. Refractories, fire brick. Glass and glass products. Pipe and drain tile. Road and paving materials. Timber and timber preservatives. Paint, varnish, lacquer, and related products. Thermometers. General testing methods. Emergency standards. Tentative standards. Tentative revisions

of standards. Part III: Nonmetallic materials—general: Coal and coke. Petroleum products and lubricants. Paper and paper products. Electrical insulating materials. Plastics. Rubber products. Textile materials. Soaps and other detergents. Naval stores. Water. Thermometers. General testing methods. Emergency standards. Tentative revisions of standards.

Note: A.S.T.M. standards, A.S.T.M. tentative standards, as well as emergency standards occasioned by the war, are included. Standards appear in the front of each part, and comprise those specifications and methods of test that have been formally adopted by the society. Tentative standards, appearing in the back of each part, are published as tentative by the Society on recommendation by the committee concerned, as representing the latest thoughts and practices, prior to adoption as standard. Each part is arranged in numeric sequence with a subject index at the end. A 1945 edition is scheduled for publication.

AMERICAN SOCIETY FOR TESTING MATERIALS

Symposium on impact testing. Under the joint auspices of the American Society for Testing Materials and Welding Research Committee of the Engineering Foundation, sponsored by the American Welding Society and the American Institute of Electrical Engineers. Philadelphia: The American Society for Testing Materials, 1938. 177 p. illus. 22 cm. (Reprint from the American Society for Testing Materials. *Proceedings*, Vol. 38, part II, 1938) Paper, \$1.25.

3314

Contents (abridged): Introduction. Utility and non-standard impact testing, by Sam Tour. The impact testing of plastics, by Robert Burns and Walter W. Werring. Practical application of the notched-bar impact test, by G. C. Riegel and F. F. Vaughn. The use of the Charpy test as a method of evaluating toughness adjacent to welds, by Walter H. Bruckner. Stress-strain relations under tension impact loading, by D. S. Clark and G. Dätwyler. The theory of impact testing, by D. J. McAdam and others. Impact tests of welded joints, by W. Spraragen and G. E. Claussen. Notched bar testing and impact testing, by S. L. Hogt.

Note: Each of the technical papers in this symposium is followed by a discussion. Three of the papers have bibliographies.

BOWLES, OLIVER

The stone industries; dimension stone, crushed stone, geology, technology, distribution, utilization. New York: McGraw-Hill Book Company, Inc., 1934. 519 p. illus. 23 cm. \$5.00.

3316

Contents: Part I, General features of the stone industries: Extent and subdivision. Minerals and rocks. Factors governing rock utilization. Prospecting and development. Part II, Dimension stone: General features of dimension stone industries. Limestone. Sandstone. Granite. Marble. Slate. Soapstone. Boulders as building materials. Foreign building and ornamental stones. Miscellaneous rocks and minerals used for building and ornamental purposes. Deterioration, preservation and cleaning of stonework. Part III, Crushed and broken stone: General features of the crushed-stone industries history. Crushed and broken limestone. Crushed and broken stone other than limestone.

Note: This book covers the building-, decorative-, and crushed-stone industries in the U.S.A. It describes rocks and covers the geology and distribution of developed deposits in every state. It covers the quality of stones, their uses, methods of quarrying, manufacture, and marketing, and includes numerous data on foreign building stones, description of natural building materials, and a survey of stone deterioration, preservation, and cleaning.

BRADY, GEORGE STUART

Materials handbook; an encyclopedia for purchasing agents, engineers, executives, and foremen. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1944. 765 p. illus. 23 cm. \$5.00.

3317

Note: General information relating to the production, sources, properties and uses of 6650 materials—metals, organic materials, industrial chemicals, paints and finishing materials, molding materials, minerals, woods, and the chief raw materials of world commerce. In this edition over 170 pages listing more than 150 additional materials have been added. The appendix contains new tables, lists of terms, and a series of maps showing world production areas. The materials are arranged alphabetically, but there is also an index with many cross references.

COWDREY, IRVING HENRY, AND RALPH G. ADAMS

Materials testing; theory and practice. Second edition, revised printing. New York: John Wiley & Sons, Inc., 1944. 156 p. illus. 23 cm. \$1.75.

3318

Contents: Province of the testing engineer. The report. Testing machines. Tensile tests. Graphs. Compressive tests. Torsional tests. Transverse tests. Dynamic tests. Test specimens and holders. Fractures and their significance. Hardness determination. Cement testing. Testing of sand. Testing of concrete. Timber testing. Measuring devices. Verification of testing machines. Photoelastic analysis. Appendix. Index.

Note: The aim of this book is to indicate basic methods of attack and interpretation in the testing of materials. The revised printing incorporates material on photoelastic analysis (an entirely new chapter), and includes changes to bring the book in line with American Society for Testing Materials specifications, and to modernize the sections on absorbing recoil, study of elastic range, stress distribution, Charpy test, endurance limit, fineness test, soundness, standard sand, fineness modulus, and concrete beams.

DAVIS, HARMER ELMER, AND OTHERS

The testing and inspection of engineering materials, by Harmer E. Davis, George Earl Troxell, and Clement T. Wiskocil. Preliminary edition for engineering defense training courses. New York: McGraw-Hill Book Company, Inc., 1941. 372 p. illus. 26 cm. \$3.50.

3319

Contents: Part I, Principles of testing and inspection: The nature of the problem. General features of mechanical testing. Measurement of load, length, and deformation—common testing apparatus. Static tension and compression tests. Static shear and bending tests. Hardness tests. Impact tests. Fatigue and creep tests of metals. Nondestructive tests. Analysis and presentation of data. Principles of inspection. Part II, Instruction for laboratory work. Appendixes: Summary of properties of common engineering materials. Selected references and sources of information.

Note: The purpose of this book is to cover the general principles and methods of testing, with specific reference to the mechanical testing of engineering materials; to emphasize the nature of physical measurements and tests and to indicate the limitations of data derived therefrom; and to bring together in convenient usable form the important and pertinent information on testing contained in the periodical literature and elsewhere. Over 1,000 citations are contained in the bibliography. There is no index, but the table of contents is detailed.

ELBERFELD, JOHN

Strength and properties of materials. New York: Harper & Brothers, 1942. 150 p. illus. 24 cm. (Rochester technical series) \$1.75.

3320

Contents: Units of measurement. Riveted and welded joints. Properties of material. Manufacturing processes of metals. The heat treatment of steel. Classification and properties of ferrous metals and alloys. Non-ferrous metals and alloys. Beam design. Columns. Shafts. Concrete and reinforced concrete. Plastics. Appendix. Index.

Note: A simple presentation of the information needed by machine operators and inspectors to understand product design and the materials of which the products are made. The material is easily accessible, properties of materials being assembled in table form for convenient reference after they are described. Mathematical aspects of the subject are included only where they are essential, and a mathematical summary is provided in an appendix.

FURNAS, CLIFFORD COOK

The storehouse of civilization. New York: Teachers College, Columbia University, 1939. 562 p. illus. 22 cm. (The Science in modern living series; basic science material for use in modern education, S. R. Powers, editor) \$3.25.

3320a

Contents: The raw materials. The formation of mineral deposits. Discovering, recovering, and concentrating the minerals. Winning the metals. Properties of metals. Use and misuse of metals. The nonmetallic minerals. The energy supply. The chemical age. Social impacts and implications as viewed by an engineer.

Note: This book is a broad survey of raw materials, including an outline of the methods of mining and refining the various minerals found in the earth, the production of alloys, the uses of power sources, and the various phases of the chemical industry, all of which is related to the sociological effects of scientific and technological developments. Suggestions are offered for the improvement of some of the processes outlined. The style is informal and the main purpose is to help teachers and the interested layman understand how a more effective production and distribution of goods and services can be brought about.

GARRATT, GEORGE ALFRED

The mechanical properties of wood, including a discussion of the factors affecting the mechanical properties, working stresses for structural timber, and methods of timber testing. New York: John Wiley & Sons, Inc., 1931. 276 p. illus. 23 cm. \$3.50.

3321

Contents: Part I, The mechanical properties of wood: Introduction. Fundamental considerations and definitions. Tensile strength. Compressive or crushing strength. Shearing strength. Cross-breaking strength; strength as a beam. Stiffness. Toughness; shock-resisting ability. Hardness. Cleavability. References. Part II, Factors affecting the mechanical properties of wood: Major defects. Minor defects. Factors other than defects. Part III, Working stresses for structural timber: Introduction. Factors concerned in derivation of working stresses. Derivation of working stresses. Strength of round timbers and posts. Safe loads for wooden columns. References. Part IV, Timber testing: Working plan. Forms of material tested. Size of specimens in relation to purposes of tests. Moisture determinations. Machine for static tests. Speed of testing machines. Description of tests. References. Appendix. Index.

Note: Here is presented technical information on American hardwoods and softwoods. Standard methods of testing the mechanical properties of timber in specimens of both large and small sizes are given in detail. In the appendix is given information on structural grading rules, as well as a copy of a sample working plan for testing small clear wood specimens. Included also is a discussion of the factors involved in the development of structural grading rules and a copy of the basic provisions for grading rules for structural timbers adopted by the American lumber industry in cooperation with organized groups. Many tables are included showing the strengths of the more important American hardwoods; lists of references are appended to the chapters. This book is based on Samuel J. Record, *The mechanical properties of wood*, New York, 1914. However, additional material was added by Professor Garratt, particularly in those portions dealing with the strength of structural timber, safe working stresses, and the grading of timber.

GILKEY, HERBERT JAMES, AND OTHERS

Materials testing; theory, practice and significance of physical tests on engineering materials, by Herbert J. Gilkey, Glenn Murphy, and Elmer O. Bergman. New York: McGraw-Hill Book Company, Inc., 1941. 185 p. illus. 28 cm. \$2.75.

3322

Contents: Testing, testing equipment, and testing observations. Properties of materials. Evaluation of properties from load-displacement data. Tensile tests. Compressive tests. Shearing and torsional tests. Flexural tests. Column tests. Hardness tests. Fatigue and impact tests. Design, control, and curing of concrete mixtures. Experimental aids in stress analysis. Appendixes. Subject, author and general source indexes.

Note: A laboratory manual for the engineering student covering the operation of testing equipment, the taking of data, the preparation of reports, and the interpretation of the data secured. The student is given an insight into the function and background of purchase specifications and into the need for and methods of inspection and acceptance tests. A chapter is devoted to experimental aids in stress analysis, including the use of models for the prediction of structural behavior. Typical problems are illustrated and numerous bibliographic notes are given in the text.

HAWLEY, LEE FORD

Wood-liquid relations. Washington, D.C.: Government Printing Office, 1931. 35 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 248) \$0.10.

3323

Contents: Introduction. The structure of wood: Softwoods. Hardwoods. Dimensions of wood elements. Statics: Absorption in general. Absorption of water. Absorption of liquids other than water. Dynamics: Impregnation by pressure. Diffusion caused by differences in moisture content. Movement of liquid above the fiber-saturation point. Conclusions. Summary. Literature cited.

Note: This pamphlet summarizes the facts known about the relations between wood and liquids. The investigations and analyses were carried on at the Forest Products Laboratory, Madison, Wisconsin.

HUNT, GEORGE McMONIES, AND GEORGE A. GARRATT

Wood preservation. New York: McGraw-Hill Book Company, Inc., 1938. 457 p. illus. 23 cm. \$5.00.

3324

Contents: The field of wood preservation. Agencies of wood deterioration. Wood preservatives. Preparation of material for treatment. Wood-preserving processes. Factors affecting penetration and absorption. Economic aspects of preservative treatment. Properties of treated wood. Treating plants and equipment. Methods of protecting wood other than by standard preservative treatment. Fire-retarding treatments.

Note: A comprehensive treatment of the protection of wood against destruction by decay, insects, and other agencies of deterioration. Surveys the literature and brings together all the most pertinent principles and facts needed by architects, executives, foresters, lumbermen, treating-plant operators, home owners, and others interested in the use of treated wood and the nature and efficiency of various treating methods and preservatives. Bibliographical references accompany the chapters.

JOHNSON, JOHN BUTLER, AND OTHERS

Johnson's Materials of construction, rewritten and revised by M. O. Withey and James Aston. Eighth edition. New York: John Wiley & Sons, Inc., 1939. 867 p. illus. 23 cm. \$6.00.

3325

Contents: Synopsis of the principles of mechanics of materials. Machines and appliances for mechanical tests. The mechanical testing of structural materials. Characteristics, physical properties, and uses of wood. The deterioration and preservation of timber. The mechanical properties of timber. Building stone. Structural clay products. Portland cement. Natural and other hydraulic cements. Limes and plasters. Methods of testing hydraulic cements. Making mortar and concrete. The physical properties of mortar and concrete. Portland cement products. Metals and their ores. Reduction of iron from its ores. Manufacture of wrought iron and steel. The manufacture of iron and steel shapes. Formation and structure of alloys. Constitution of iron and steel. Properties of wrought iron. Properties of steel. Alloy steels. Cast iron and malleable cast iron. Non-ferrous metals and alloys. The effect of temperature on the mechanical properties of metals. Fatigue of metals. The corrosion of metals. Paints and varnishes. Constitution of some of the more important non-ferrous alloys. Metals for light-weight construction. Appendixes. Index.

Note: Essential information is presented concerning the sources, manufacture and fabrication of the principal materials; important mechanical and physical properties; influence of various factors upon these properties; causes of defects and variations; techniques of testing materials; general uses of different materials. New material has been added, many chapters rewritten and revised, and a new chapter included on metals for light-weight construction, in this eighth edition.

LAURSON, PHILIP GUSTAVE, AND WILLIAM JUNKIN COX

Mechanics of materials. New York: John Wiley & Sons, Inc., 1938. 408 p. illus. 23 cm. \$3.75. 3326

Contents: Stresses and deformation. Mechanical properties of materials. Allowable stresses. Stresses due to axial loads. Riveted and welded joints. Torsional stress, shafts and helical springs. Beams; bending moment and shear. Stresses in beams. Design of beams. The deflection of statically determinate beams. Restrained beams. Direct stress combined with bending. Column theory. The design of columns. Combined stresses—elementary applications. Elastic energy—stresses produced by moving bodies. Continuous beams. Beams of two materials. Thick-walled cylinders subject to internal and external pressure. Eccentrically loaded connections. Comprehensive problems. Centroid and statical moment of a plane area. Moment of inertia of a plane area. Tables.

Note: The first fifteen chapters are a well-integrated study of the essentials of mechanics of materials; the remaining eight chapters contain slightly more advanced or more specialized material. It is assumed that the reader understands statics, and for the chapter dealing with elastic energy a grounding in kinetics is also necessary. In addition to developing as clearly as possible the simplified expressions on which most engineering design rests, the limitations of these expressions have been carefully noted and discussed throughout. A feature of the book is the large number of carefully selected problems, of which there are approximately five hundred.

LUXFORD, R. F., AND GEORGE W. TRAYER

Wood handbook. Basic information on wood as a material of construction with data for its use in design and specifications. Prepared by Forest Products Laboratory, Forest Research, Forest Service, United States Department of Agriculture. Slightly revised June, 1940. Washington, D.C.: Government Printing Office, 1940. 326 p. illus. 22 cm. Paper, \$0.35. 3326a

Contents: Glossary. Structure of wood. Characteristics of some important commercial woods. Physical properties of wood. Strength values of clear wood and related factors. Grades and sizes of lumber. Structural timbers. Timber fastenings. Wood beams, columns, and arches. Glued wood construction. Bent wood members. Control of moisture content and shrinkage of wood. Fire resistance of wood construction. Painting and finishing wood. Protection against wood-destroying organisms. Wood preservation. Poles, piling, and ties. Thermal insulation. Index.

Note: This handbook, intended for all who use wood as a material of construction, is based chiefly upon the accumulation of information that has resulted from engineering investigations and allied studies conducted by the Laboratory over a period of 20 years. The 1940 edition is a reprint with minor revisions of the 1935 edition. References appear at the ends of the chapters.

MACLEAN, J. D.

Manual on preservative treatment of wood by pressure. Washington, D.C.: Government Printing Office, 1935. 124 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 224) Paper, \$0.15. 3327

Contents: Introduction. Pressure processes. Wood preservatives. Effect of wood structure on treatment. Moisture content, specific gravity, and air space in wood. Preparation of timber for treatment. Injecting preservatives. Absorption and penetration. Effect of treatment on the physical condition of the wood. Bleeding of treated wood. Treating conditions used in commercial practice. Specifications for treatment. Formulas. Literature cited. Index.

Note: The Forest Products Laboratory, maintained at Madison, Wisconsin, by the United States Department of Agriculture in cooperation with the University of Wisconsin has made studies of the technical problems involved in the pressure treatment of wood with preservatives, including experiments and observations at commercial treating plants. The purpose of this publication is to discuss the application of the results of these experiments and observations to the improvement of the pressure treatment of wood and to present general information relating to the subject.

The information is intended to be of use to engineers, treating-plant operators, inspectors, and others interested in the preparation of specifications and in the application of pressure-treating processes.

MARIN, JOSEPH

Mechanical properties of materials and design. New York: McGraw-Hill Book Company, Inc., 1942. 273 p. illus. 23 cm. \$3.50. 3328

Contents: Simple static stresses. Combined static stresses. Simple fatigue stresses. Combined fatigue stresses. Impact stresses. Simple creep stresses—stresses at high temperatures. Combined creep stresses.

Note: The primary purpose of this book is to furnish a survey of the mechanical properties of engineering materials and to show how a consideration of these properties modifies usual design procedure. The book bridges the gap between books on engineering materials dealing with the manufacture, testing, and properties of materials, and those dealing with the stress analysis of machine and structural members.

MILLS, ADELBERT PHILO, AND OTHERS

Materials of construction; their manufacture and properties by Adelbert P. Mills and Harrison W. Hayward. Fifth edition, revised by L. F. Rader. New York: John Wiley & Sons, Inc., 1939. 564 p. illus. 23 cm. \$4.00. 3329

Contents: Section I, Definitions of terms. Section II, Metals: Tests of metals. Structure and constitution of metals. Introduction to ferrous metals. Iron ore and pig iron. Steel. Wrought iron. Cast iron. Malleable cast iron. Non-ferrous metals and alloys. Special alloy steels. Service requirements of metals. Section III, Cementing materials: Introduction. Gypsum plaster. Lime. Cements. Section IV, Concrete and stone: Concrete. Building stones, stone masonry, and road metal. Section V, Brick and clay products; refractory and heat insulating materials. Section VI, Timber. Section VII, Bituminous materials. Section VIII, Organic materials, by William H. Gardner: Organic protective coatings. Organic plastics. Index.

Note: This book has been almost entirely rewritten. Whole new chapters have been inserted dealing with properties of materials and the treatment of certain materials not covered in previous editions. Specific revisions include new material on: fundamental properties of materials; methods of testing and requirements of metals in service; metallography and the "constitution" of metals, including a short history of the development of metallurgical processes for ferrous metals; further data on the Aston process for manufacture of wrought iron, the malleablizing process for manufacturing malleable cast iron, manufacture and properties of ingot iron, welding, extraction of copper from its ores, and the properties and uses of non-ferrous metals and alloys (including die-casting metals and light-weight alloys), and of alloy steels; the manufacture of Portland cement, its chemistry and physical properties; concrete, presenting recognized theories of proportioning, modern methods of construction, and values of physical properties; quarry and mill practice for building stone; the manufacture of structural clay products; glass building blocks; timber; bituminous materials; and organic materials—protective coatings and organic plastics.

MOORE, HERBERT FISHER

Textbook of the materials of engineering. With a chapter on concrete by Harrison F. Gonnerman, and a chapter on the crystalline structure of metals by Jasper O. Draffin. Sixth edition. New York: McGraw-Hill Book Company, Inc., 1941. 454 p. illus. 23 cm. \$4.00. 3330

Contents: Introductory. Cohesion stress and strain. The elastic strength of materials. The failure of materials by flow or creep. The failure of materials by fracture. The failure of metallic materials by corrosion and by wear. Working stress, factor of safety, selection of materials. Crystalline structure of metals. The manufacture of iron and steel. Iron and steel castings, rolling and forging, welding. Chemical composition of iron and steel, tables of strength values. The nonferrous metals and alloys. Wood. Stone, brick, and terra cotta. Cementing materials: gypsum, lime, Portland cement, special cements. Concrete. Plastics. Rubber, rubberlike materials, leather, rope. Testing and inspection; testing machines. Specifications for materials.

Note: In this standard text, the author gives an elementary, concise account of the physical properties of the common materials used in structures and machines, together with brief descriptions of their manufacture and fabrication. Changes have been made in all chapters in this edition to bring the material abreast of current developments and data.

MUHLENBRUCH, CARL WILLIAM

Testing of engineering materials. New York: D. Van Nostrand Company, Inc., 1944. 200 p. illus. 24 cm. \$2.75. 3330a

Contents: Testing of engineering materials. Conducting laboratory experiments and instructions for writing reports. Experiments: Testing machines—their use and calibration. The stress-strain diagram for mild steel. The effect of carbon content upon the properties of steel. Shear, tension, compression, and cold-bend tests of metals. Flexural test of a wood beam. Torsion tests of ductile and brittle materials. Impact tests of ductile and brittle materials. The properties of gray, white, and malleable iron. Tension test of non-ferrous metals. The physical properties of laminated plastics. Hardness testing. The physical properties of concrete. Column tests. Strain gages and their use. Tension, compression, and shear tests of wood. Effect of moisture upon the flexural properties of wood. Tests of a helical spring. Flexural tests of ductile and brittle materials. Appendix. Index.

Note: A laboratory manual presenting a series of experiments to acquaint engineering students with the use of testing machines and the method of analyzing results and writing reports.

MURPHY, GLENN

Properties of engineering materials. Scranton, Pa.: International Textbook Company, 1939. 387 p. illus. 21 cm. (International texts in civil engineering, C. E. O'Rourke, consulting editor) \$3.50. 3331

Contents: Materials and the engineer. Behavior of materials under load. Failure of materials. Use of properties in design. Qualities other than strength. Cooling characteristics of materials. The iron-carbon system. Manufacture and properties of the ferrous metals, non-ferrous metals. Timber. Stone. Clay products. Cementing materials. Concrete. Miscellaneous materials. Properties index. Review questions. Answers to problems. General index.

Note: Dealing with properties of engineering materials with special emphasis upon specific properties which are of major importance to engineering students, this study covers the principles rather than definite details of manufacturing processes. The presentation includes a study of what constitutes failure of a material or structural method.

NORRIS, CHARLES BRAZER

Technique of plywood. Seattle, Wash.: I. F. Laucks, Inc., 1942. 249 p. illus. 19 cm. \$2.50. 3331a

Contents: Preface. Strength, deformation and elastic stability of plywood sheets. Elastic theory of wood and plywood. Manufacture of plywood. Warpage of plywood. Bending, moulding and embossing of plywood. Addenda: Strength and deflection of Douglas fir plywood under loads applied at right angles to face, by Chas. B. Norris. General scientific principles of gluing, by I. F. Laucks.

Note: This manual contains technical information, including drawings, tables, and formulae, for the use of the plywood industry. The chapters originally appeared as a series of articles in the *Hardwood record* from March, 1937 to July, 1939.

PERRY, THOMAS DOANE

Modern plywood. New York: Pitman Publishing Corporation, 1942. 366 p. illus. 23 cm. \$4.50. 3332

Contents: Glossary of trade terms. Brief history of plywood. Advantages of plywood. Adhesives for plywood. Characteristics of modern plywood. Veneer manufacturing. Plywood manufacturing. High-density plywood. Plywood in industry. Tabular data on plywood. Grading rules. Testing for adhesive strength. Bibliography. Index.

Note: A primer on the manufacture, properties, and uses of plywood for the engineer, architect, and manufacturer. The author, a recognized authority on plywood, traces the rise of plywood as an industrial product, the methods of cutting and drying,

veneer, making lumber cores, the use of resin adhesives, cold and hot pressing, and plywood finishing. In addition to a complete description of these operations, several collateral subjects are included, such as reinforced faces, resin bonding without hot presses, electrostatic heat for resin bonding, and flexible bag pressures. The technique antedating modern resin bonding is also described, since it still has a place in the industry.

PERRY, THOMAS DOANE

Modern wood adhesives. New York: Pitman Publishing Corporation, 1944. 208 p. illus. 23 cm. \$3.00. 3333

Contents: Origin of glues and their uses. Animal glues. Vegetable glues. Casein glues. Soybean glues. Synthetic resin adhesives. Silicate of soda glues. Albumin glues. Prepared glues. Methods of comparing glues. Glue mixing and spreading equipment. Pressure in gluing. Adhesion secured by heat. Redriers for glue solvents. Impregnation. Glue testing. Index.

Note: A discussion of the manufacturing processes, properties, and applications of the different types of glues used in the development of plywood and veneers. The glues are listed and described in separate chapters according to their origin. Following these accounts of special characteristics, are general chapters covering methods of comparing glues, equipment for preparing and applying them, the effect of pressure and heat in securing good glue joints, the problem of wood impregnation, and the procedure in various methods of glue-testing. There are brief chapter bibliographies and a glossary.

TIEMANN, HARRY DONALD

Wood technology; constitution, properties and uses. New York: Pitman Publishing Corporation, 1944. 328 p. illus. 23 cm. \$4.00. 3334

Contents: Introduction. What wood is. The life of a tree and its relation to the human race. The structure of wood. How to identify species of wood by visible structure. The structure of the cell wall. Chemistry of wood and cellulose. Chemical conversion of cellulose and synthetic resins and fibers. Paper and pulp from wood. Moisture relations of wood and the fiber-saturation point. Shrinkage and swelling—wood compared with other materials. Collapse, its cause and its significance. Reduction of shrinkage. Stresses in drying lumber, moisture gradients and procedure in kiln-drying operations. High frequency electrical methods for drying and gluing wood. Mechanical properties of wood and the history of wood research in the United States. Physical properties, density of wood substance, absorption of liquids. The effect of various periods of different temperatures and humidities upon the strength of wood. Biological destructive agencies and preservative measures. Distinguishing features of American woods. Appendix. Index.

Note: A simply written book intended to be comprehensive for the whole field of wood technology. References are cited to amplify the brief treatment given to specific subjects. The key to distinguishing features of American woods given in chapter 18 is original, having been evolved out of the teaching experience of the author. Included in the appendixes is a discussion of the fuel value of wood. Three new chapters on the chemistry of wood and cellulose, and moisture relations of wood, have been added to the second edition.

WHITE, ALFRED HOLMES

Engineering materials. New York: McGraw-Hill Book Company, Inc., 1939. 547 p. illus. 23 cm. \$4.50. 3335

Contents (abridged): Theoretical introduction. Iron and its alloys with carbon. The manufacture of iron and iron-carbon alloys from the ore. The manufacture of steel by the Bessemer, open-hearth and electric-furnace processes. Influence of chemical composition and mill-finishing operations on the properties of plain carbon steel. Gray cast irons and malleable castings. Steels with one alloying element. Steels with two or more alloying constituents and steels for special purposes. Copper, nickel, zinc, tin, and their alloys. Aluminum, magnesium, and the light alloys. Lead and its alloys. Corrosion of metals and protection by metallic coatings. Rocks and their decomposition products. Clay products. Fused silicates. Glass, slags, and refractories. Lime, gypsum, and magnesium oxychloride products. The silicate cements: pozzuolanic cements, hydraulic limes, natural cements, Portland cement. Fuels and combustion. Water and its industrial utilization. Soaps. Organic preservative materials and protective coatings. Plastics and related products.

Note: A textbook for engineering college courses. Approaching the subject from the modern theoretical viewpoint, it discusses plastics, protective coatings, corrosion, fuels, combustion, water softening, and the newer alloys, as well as the older types of ferrous and nonferrous metals, clay products, cement, and concrete.

Strength of Materials

BOYD, JAMES ELLSWORTH

Strength of materials. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1935. 548 p. illus. 23 cm. \$3.75. 3336

Contents: Stresses. Shear. Stress beyond the elastic limit. Riveted joints. Torsion. Beams. Stresses in beams. Deflection of beams. Integration between limits. Deflection by area moments. Indeterminate beams. Shear in beams. Special beams. Bending combined with tension or compression. Columns. Working formulas for columns. Combined stress. Elastic energy of bending and shear. Curved beams and hooks. Properties of areas.

Note: A textbook designed to give the student the basic theory of the subject, and to prepare him for subsequent technical subjects. Problems accompany the text.

GENSAMER, MAXWELL

Strength of metals under combined stresses. A series of educational lectures on the strength of metals under combined stresses, presented to members of the A.S.M. during the twenty-second National Metal Congress and Exposition. Cleveland: American Society for Metals, 1941. 106 p. illus. \$2.00. 3337

Contents: State of stress and the ductility of metals. Resistance to deformation. Resistance to fracture. Applications of principles. Bibliography.

Note: Principles that may be used as guides in predicting the resistance to deformation and relative ductility of metals under complex conditions are explained. The book is indexed.

GEORGE, SIDNEY GONZALES, AND E. W. RETTGER

Mechanics of materials. Revised by E. V. Howell. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 491 p. illus. 23 cm. \$3.75. 3338

Contents: Stress and strain. Testing materials. Tension and compression. Riveted joints. Torsion. Simple beams, shear and moment. Stress in beams. Elastic curve. Slope and deflection, moment area method, theorem of three moments. Stress intensities on different planes. Columns. Nonprismatic and special beams.

Note: A simple treatment of essentials in the field of mechanics of materials. The present edition stresses modern methods in the design of members; there is a chapter devoted to the slope-deflection method, the moment area method, and the theorem of three moments. A feature of the revision is the article on the graphical solution of combined stresses.

GIRVIN, HARVEY FRANK

Strength of materials. Scranton, Pa.: International Textbook Company, 1944. 357 p. illus. 22 cm. (International texts in civil engineering; C. E. O'Rourke, consulting editor) \$3.00. 3339

Contents: Stress. Stress and strain. Thin cylinders (riveted joints, welded joints). Torsion. Shear and bending moments. Stresses in beams. Deflection of beams. Statically indeterminate beams. Beams of constant strength. Non-homogeneous beams. Stresses resulting from certain combinations of simple stresses. Columns. Stresses and deformations caused by moving loads. Special topics. Appendix (28 important tables). Index.

Note: This engineering college textbook features basic principles rather than structural details. Emphasis is placed on the area moment method of determining deflections. It includes a selection of 490 problems exclusive of solved examples; also complete tables containing the data needed for solution of problems.

LEIGHOU, ROBERT BENJAMIN

Chemistry of engineering materials. Rewritten by the following members of the chemistry faculty of the Carnegie Institute of Technology: J. C. Warner (editor), Thomas R. Alexander, Paul Fugassi, D. S. McKinney [and others]. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1942. 645 p. illus. 23 cm. (International chemical series: L. P. Hammett, consulting editor) \$4.50. 3340

Contents: Water for steam generation. Fuels, combustion, and lubricants. Refractories. The nonferrous metals. Nonferrous alloys. Production of iron and steel. Alloys of iron: constitution, treatment, and uses. Technology of shaping metals and alloys. Corrosion of metals and alloys. Protective metallic and inorganic coatings. Building stones. Lime and gypsum products. Portland cement and concrete. Clay and clay products. Abrasives. Glass. Organic plastics. Rubber: natural and synthetic. Organic protective coatings: paints, varnishes, enamels, lacquers. Glues and adhesives. Insulating materials.

Note: A textbook for sophomore and junior engineering students and a reference book for practicing engineers who have not had advanced courses in chemistry and metallurgy. The book is designed to provide information on the chemical properties of engineering materials so that they may be more intelligently selected and used. This fourth edition represents a revision of much of the text, especially in the sections dealing with water for steam generation, fuels, abrasives, glass, organic plastics, and rubber.

MAURER, EDWARD ROSE, AND MORTON O. WITHEY

Strength of materials. Second edition, revised and enlarged. New York: John Wiley & Sons, Inc., 1940. 408 p. illus. 23 cm. \$3.50. 3340a

Contents: Stress and strain. Mechanical properties of materials under simple stress. Typical problems involving simple stress calculations. Beams, common cases: Shearing force and bending moment. Stresses in beams (common cases). Ultimate strength of beams. Stiffness of beams: Elastic curves and deflections. Statically indeterminate beams. Special beams and loadings. Torsion. Columns. Miscellaneous. Appendixes: Center of gravity. Centroid. Moment of inertia and radius of gyration of plane areas. Properties of materials and elements of sections. Additional problems. Index.

Note: Primarily suited as a textbook for all students of engineering, particularly for use in courses allotting five hours per week for one semester to strength of materials and two hours per week to materials of construction. Special attention has been given to definitions, demonstrations, proof, solved illustrative examples, and problems. Changes have been made in the second revised edition to conform to recent methods and practices, and a total of 347 new problems has been added.

MERRIMAN, MANSFIELD, AND EDWARD K. HANKIN

Merriman's Strength of materials. Revised by Edward K. Hankin. Eighth edition. New York: John Wiley & Sons, Inc., 1942. 148 p. illus. 22 cm. \$1.50. 3341

Contents: General considerations. Effect of forces acting on solid bodies. Principles of beams. Application of beam principles. Bodies under compressive forces. Bodies in torsion. Elastic deformations. Miscellaneous applications. Compound bodies. Combined stresses. Resilience of materials. Appendixes: General properties of industrial materials. Tabular data. Index.

Note: The first few chapters of this textbook for engineering colleges have been rewritten in less technical form than in the previous edition with as much explanation and illustration as is consistent with the brevity of the book as a whole. The entire book has been reviewed in the light of today's needs, and changes in content and arrangement have been made wherever necessary. Considerable new material has been added, including enough problems to give concrete application to the theory discussed. Answers to some of the problems are given.

NÁDAI, ARPÁD

Plasticity; a mechanics of the plastic state of matter, by A. Nádaí, assisted by A. M. Wahl, revised and enlarged from the first German edition. New York: McGraw-Hill Book Company, Inc., 1931. 349 p. illus. 23 cm. (Engineering Societies monographs) \$5.00. 3342

Contents (abridged): Part I, The plastic state of matter with special reference to metals and mechanical engineering problems: Solid and fluid states, plasticity and viscosity. Behavior of matter under high pressure. The ordered and unordered states of matter. Elastic and permanent deformation. On the mechanism of plastic deformation in the grain structure. Stress. Strain. Infinitesimal strain. Limiting states of stress. The stationary flow of a plastic mass. Tension. Strain or flow figures. Compression. Torsion of a cylindrical bar of circular cross-section. The problem of plastic torsion. Experimental representation of stress distribution. Torsion tests. The slip layers in twisted steel bars. Bending of bars with arbitrary law of deformation. Bar subjected to plastic bending. Buckling of bars after the yield point is exceeded. The plane problem. The thick-walled tube under internal pressure. Plastic flow in hollow cylinder for arbitrary law of deformation considering work hardening. Distribution of stress in rotating cylinders and discs. Systems of slip lines in two-dimensional problems. Plastic mass pressed between two rough parallel plates. Hardness. The problem of contact of elastic bodies. Photo-elastic contact tests and observation of slip lines under plastic impressions. Inherent and residual stresses. Part II, Some applications of the mechanics of the plastic state of matter to geology and geophysics: Finite homogeneous strain. The pressure in the earth's interior. Mountain building. The weight of the continents. Traces of motion in the structure of rocks. Bibliography. Index.

Note: Presents for engineers and designers the fundamentals of the theory of plastic flow in materials, especially in the metals, and is based on current methods of engineering mechanics and on results of recent laboratory tests. This edition contains material not in the original German edition.

POORMAN, ALFRED PETER

Strength of materials. Third edition. New York: McGraw-Hill Book Company, Inc., 1937. 314 p. illus. 23 cm. \$3.00. 3343

Contents: Stresses and strains in tension and compression. Stresses and strains in shear. Riveted and welded joints. Torsion of shafts. Shear and moment in beams. Stresses in beams. Deflection of beams. Fixed and continuous beams. Beams of two materials. Beams of constant strength. Resilience. Combined stresses. Euler's column formula. Rankine's column formula. Straight-line column formula. Columns in general. Deflection of beams by area moment method. Curved beams and hooks. Index.

Note: A companion volume to the author's *Applied mechanics* (see Index), intended for use as a text in undergraduate mechanics courses. Numerous illustrative examples have been worked out in detail in order to integrate theory and practice, and problems and answers are given at the end of each section. In this edition material has been added on welded joints, torsion of shafts, shear centers of channel sections, and moments and stress in beams due to moving loads.

RIGGS, NORMAN COLMAN, AND MAX M. FROCHT

Strength of materials; a first course. New York: The Ronald Press Company, 1938. 432 p. illus. 22 cm. \$3.75. 3344

Contents: Stress and strain. Two-dimensional stress analysis. Thin cylinders and riveted joints. Shears and bending moments. Stresses in homogeneous beams. Stresses in non-homogeneous beams. The general case of bending and short columns (eccentric loads). Torsion. Deflection of beams. The three-moment equation; conjugate beams; moment distribution. Columns; curved beams and hooks. Strain energy; impact stresses. Elements of photoelasticity; stress concentrations. Failure of materials. Appendix: mechanical properties of materials; elements of standard structural sections.

Note: This book is intended as a text in a first course in strength of materials in colleges of engineering. A knowledge of calculus and a basic course in statics are assumed. A number of stress patterns, with rules for interpretation, are given; also included is a brief treatment of the theory and application of

photoelasticity to the study of stresses. An introduction is given to the Hardy Cross method of moment distribution and its application to continuous beams. Problems appear at the end of chapters.

SEELY, FRED B.

Advanced mechanics of materials. New York: John Wiley & Sons, Inc., 1932. 331 p. illus. 23 cm. \$5.00. 3345

Contents: Part I, Preliminary considerations: Analysis of subject. Assumptions and limitations involved in the elementary formulas for determining stresses in members subjected to static loads. Relations between stresses at a point on different planes passing through the point; theories of failure. Part II, Special topics in strength of materials: Thick-walled cylinders. Limitations of the flexure formula for sections having only one axis of symmetry. Unsymmetrical bending. Curved flexural members. Flat plates. Torsional resistance of bars having non-circular cross-sections. Part III, Localized stress; stress concentration: Methods of determining localized stress. Values of localized stress in various members. Part IV, Introduction to analysis of stresses in statically indeterminate members by use of methods involving elastic strain energy: Preliminary considerations. Deformations of members and simple structures. Stresses in statically indeterminate members. Appendix: Properties of an area. First moments and centroids of areas. Second moment or moment of inertia of an area. Product of inertia of an area. Values of the integral for use in the curved beam formula. Index.

Note: This book offers a somewhat advanced treatment of the analysis of stresses and strains in various members of engineering structures and machines as well as a better understanding of the significance of calculated stresses in relation to the usable resistance of a member subjected to different types of loading. In organizing the material, the results of many experiments and analytical investigations were used. Throughout the book the engineering significance of the methods and results is strongly emphasized. Many illustrative problems are given as well as numerous problems for solution. References are given at the end of each chapter.

SEELY, FRED B.

Resistance of materials. Second edition. New York: John Wiley & Sons, Inc., 1935. 436 p. illus. 23 cm. \$3.75. 3346

Contents: Stress and strain. Thin-walled cylinders and spheres, riveted and welded joints. Stress and strain caused by torsional loads. Transverse loads, stresses in beams. Deflection of beam (double integration method). Statically indeterminate beams (double integration method). Combined axial and bending loads, eccentric loads. Compression members, columns. Relation between stresses at a point on different planes passing through the point, theories of failure. Repeated loads, fatigue of metals. Impact and energy loads. Deflection of statically determinate beams (moment-area method). Statically indeterminate beams (moment-area method). Limitation of the flexure formula for sections having only one axis of symmetry. Unsymmetrical bending. Curved flexural members. Flat plates. Thick-walled cylinders. Torsional resistance of bars having non-circular cross-sections. Composite beams, reinforced concrete beams. Appendixes: Properties of an area. Tables of properties of materials. Properties of rolled steel sections. Index.

Note: Offers a close correlation between the mathematical theory of the mechanics of ideal materials used under ideal conditions and the properties of actual engineering materials and the engineering conditions of use. Among the fundamental revisions in the second edition are: (1) the omission of Chapter III on elementary combined stresses, and the distribution of the material contained therein to other parts of the book where it has direct application in the treatment; (2) the placing of the two chapters on the moment-area method of the treatment of beams at a point where they may be omitted if desired, without destroying the continuity of the text; (3) the placing of the chapter on repeated loading in advance of the chapter on impact and energy loading, allowing for a clearer interpretation of the significance of localized stresses in relation to impact loading; (4) the replacing of Part II on mechanical properties of structural material by a brief treatment of a number of special topics in stress analysis.

TIMOSHENKO, STEPHEN, AND GLEASON H. MACCULLOUGH

Elements of strength of materials. Second edi-

tion. New York: D. Van Nostrand Company, Inc., 1940. 365 p. illus. 23 cm. \$3.25. 3347

Contents: Preface. Notation. Tension and compression. Shearing stress, riveted and welded joints, thin-walled cylinders. Combined stresses—analysis of plane strain. Torsion. Shearing force and bending moment. Stresses in beams. Deflection of beams. Statically indeterminate problems in bending. Special topics concerning beams. Stresses due to combinations of direct stress, bending and torsion. Columns. Energy of strain. Elements of photo-elastic theory. Mechanical properties of materials. Appendixes. Index.

Note: This college textbook is designed to teach the subject of strength of materials in terms of a few general principles and basic formulas, which the student is taught to modify as necessary to solve specific problems. The topics covered represent the designs most commonly encountered by the civil or the mechanical engineer. The required mathematics has been limited to elementary calculus, and a large selection of problems is provided for solution by the student.

TIMOSHENKO, STEPHEN

Strength of materials. Second edition. New York: D. Van Nostrand Company, Inc., 1940-41. 2 v. illus. 23 cm. Vol. I, \$3.50; Vol. II, \$4.50. 3348

Contents: Volume I, Elementary theory and problems: Tension and compression within the elastic limit. Analysis of stress and strain. Shearing force and bending moment. Stresses in transversally loaded beams. Deflection of transversally loaded beams. Statically indeterminate problems in bending. Beams of variable cross section. Beams of two materials. Combined bending and tension or compression. Theory of columns. Torsion and combined bending and torsion. Energy of strain. Appendix. Author index. Subject index. Volume II, Advanced theory and problems: Special problems in bending of beams. Curved bars. Thin plates and shells. Buckling of bars, plates and shells. Deformations symmetrical about axis. Torsion. Stress concentration. Deformations beyond elastic limit. Mechanical properties of materials. Index.

Note: This set of two volumes has been designed for comprehensive college courses. The first volume contains the material usually given in required courses in engineering schools in the United States. The derivations have been materially simplified so they are clear to the student who has taken the usual courses in calculus. The second volume deals with the contributions to engineering design made during the past decade by more rigorous analysis, especially in its application to problems in elasticity. These more advanced methods have permitted substantial saving of weight and cost in engineering design, by replacing empirical formulas by accurate methods of calculation.

Engineering Instruments

DEJUHASZ, KALMAN JOHN

The engine indicator. Its design, theory and special applications. Pittsburgh: Instruments Publishing Company, 1934. 243 p. illus. 21 cm. \$3.75. 3349

Contents: Early history of the indicator. Normal type indicators. General arrangement and component parts of normal type indicators. Indicators for special purposes. High-speed engine indicators. Indicators for high pressures. Maximum pressure indicators. Mean pressure indicators. Testing and calibrating the indicator. Analytical theory of the indicator. Appendix. Bibliography. Index.

Note: Essentially the indicator is a recording pressure gage, by which the magnitude of variable pressures can be determined as a function of another variable. The purpose of this book is to present the history, theory, and construction of the many forms since its invention in 1790 by James Watt to the modern design current in 1934. Mathematical theory and working drawings are included.

DIEDERICH, HERMAN, AND WILLIAM C. ANDRAE

Experimental mechanical engineering, for engineers and for students in engineering laboratories. Volume I, Engineering instruments.

New York: John Wiley & Sons, Inc., 1930. 1082 p. illus. 24 cm. \$8.00. 3350

Contents: Engineering instruments. Measurement of length and area. Measurement of time and speed. Measurement of pressure. Measurement of temperature. Measurement of work and power. The engine indicator. Properties of gases and vapors. Determination of moisture in steam. Measurement of liquids, gases and vapors. Fuel analysis and determination of heat value. Exhaust and flue gas analysis. Lubrication and the testing of lubricants. Appendix. Index.

Note: The present work is a completely rewritten book based upon Carpenter and Diederichs' *Experimental engineering*, seventh edition, New York, 1911. It covers engineering instruments, their construction, use, and calibration, and is largely a compilation of data based on the literature of the field and upon manufacturers' catalogues and specifications. There are numerous detailed mechanical drawings of instruments as well as performance curves, operation data, methods of measuring and recording fluids and gases, plus related theory. Volume II has not been published.

RHODES, THOMAS J.

Industrial instruments for measurement and control. New York: McGraw-Hill Book Company, Inc., 1941. 573 p. illus. 23 cm. (Chemical engineering series) \$6.00. 3351

Contents: Standards. Pressure and vacuum gauges. Indicating and recording thermometers. High-temperature pyrometry. Theory of differential-pressure flow meter primary measuring instruments. Differential-pressure flow meter secondary measuring; recording and integrating elements. Miscellaneous inferential and volumetric flow meters. Liquid-level measurements. Telemetering. Automatic-control mechanisms. Miscellaneous industrial instruments.

Note: Covers in a theoretical and practical treatment the measurement and control of the four fundamental physical factors encountered in industrial processing and manufacturing: temperature, pressure, fluid flow, and liquid level. Automatically controlled continuous processes are thoroughly analyzed and practical rules are established for the design and maintenance of controlling instruments.

SMITH, ED SINCLAIR

Automatic control engineering. New York: McGraw-Hill Book Company, Inc., 1944. 367 p. illus. 21 cm. \$4.00. 3352

Contents: Introduction to the art of control. Terminology. Descriptive treatment of control. Applications of regulators to plants. Quantitative analysis of control. Various aspects of control. Appendixes: Tables commonly used in control engineering. Review of basic physics. The mathematics of transients, a short review. Analytic methods for the solution of differential equations. Functions of a complex variable. The Laplace transform method. The Laplace transform in practical use. References on control.

Note: A practical treatment of the subject for engineers concerned with controlling processes and servo-mechanisms. The book gives both a qualitative and quantitative approach to meters and controllers and their plant applications, and includes the mathematical, physical, mechanical, hydraulic, acoustic, and electrical material necessary to give engineers from any field an understanding of control relations.

Materials Handling

HETZEL, FREDERIC VALERIUS, AND RUSSELL K. ALBRIGHT

Belt conveyors and belt elevators. Third edition, revised and enlarged. New York: John Wiley & Sons, Inc., 1941. 439 p. illus. 23 cm. \$6.00. 3353

Contents: Section I, Belt conveyors. General description of component parts. Development of belt conveyors. Belts and belt manufacture. Supporting and guiding the belt. Driving the belt. Design of belt conveyors. Tension and take-up devices. Loading the belt. Discharging from the belt. Protecting and cleaning the belt. Weighing and separating. Package conveyors. Particular

uses of belt conveyors. Life of belts. When to use belt conveyors. Section II, Belt elevators. General descriptions. Centrifugal discharge elevators. Elevator buckets. Continuous bucket elevators. Belts for elevators. Fastening buckets to belt. Driving belt elevators. Elevator boots. Inclined elevators. Appendixes: Weights of materials bought and sold by the bushel. Weights of minerals, ores, chemicals. Weights of miscellaneous materials. Index.

Note: This book offers precise and comprehensive information on how to select, install, and operate belt conveying machinery. It covers broad principles and specific details; explains the whys of the theoretical angles; and describes the methods of efficient practice. Considerable space is given to the operation and maintenance of plants under a variety of circumstances as met with in practice. Tables of sizes, capacities, power consumption and other useful data are present in convenient form. This edition has been brought up to date with the inclusion of recent developments, and two chapters have been added, one on design of belt conveyors, the other on weighing and separating.

HUDSON, WILBUR G.

Conveyors and related equipment. New York: John Wiley & Sons, Inc., 1944. 341 p. illus. 21 cm. \$5.00. 3353a

Contents: General principles in the selection of conveyors. Screw conveyors. Flight and apron conveyors. The bucket elevator. The skip hoist. The pivoted bucket carrier. Overhead trams and conveyors. Conveying en masse. Pneumatic and hydraulic conveyors. The belt conveyor. Aerial tramways. Storage and transport. Bins and bunkers. Unloading water-borne cargoes. Crushers, hammermills, and pulverizers. Screens and feeders. Car unloading. Weighing. Chains, drives, drive groups, motors. Boiler-plant coal-handling equipment. Appendix. Index.

Note: A manual for the student engineer, architect, consultant, and plant engineer covering the applications and limitations of the various types of material-handling equipment and methods of storage together with a discussion of manufacturers' specifications and recommendations. It is assumed that the student and engineer are familiar with the different types of equipment from a study of manufacturers' catalogues. A brief historical outline precedes the discussion of the technicalities of layout, performance possibilities, and maintenance suggestions.

KOSHKIN, SIMEON JOHN

Modern materials handling. New York: John Wiley & Sons, Inc., 1932. 488 p. illus. 24 cm. \$6.00. 3354

Contents: General principles and classification. Of cranes in general and overhead traveling cranes—in particular. Overhead traveling cranes (continued). Cranes (continued). Cranes (concluded). Locomotive, derrick, and wharf types. Overhead transportation, the tramrail system. Overhead transportation (concluded). Telfers, ropeways and cable ways. Industrial truck equipment. Industrial truck equipment (continued). Operating costs of industrial trucks. Conveyor applications. Gravity-type package conveyors. Belt-type package conveyors. Chain-type and special package conveyors. Continuous overhead transportation and speed control. Speed reducers and photo-electric control of conveyors. Belt conveyors for loose materials. Belt conveyor design. The skip hoist. Chain, cable, and screw conveyors for bulk materials. Bucket elevators and loaders. Elevator-conveyors. Handling materials in bulk. Coal-handling in power plants of small and moderate size. Ashes handling in power plants. Materials handling in the foundry. Index.

Note: An analysis of methods of handling different kinds of materials, and a study of the principles and considerations involved in a proper choice of the method of handling any kind of material, form the subject matter of this book. Typical examples and data relating to the design and performances of standard materials-handling equipment are given only in so far as it is necessary for the illustration of the main points under discussion. The book is designed for mechanical, industrial, and production engineers, and for manufacturers and designers of materials-handling equipment.

STOCKER, HARRY ELLIS

Materials handling; principles, equipment and methods. New York: Prentice-Hall, Inc., 1943. 309 p. illus. 23 cm. \$5.00. 3355

Contents: Terminal time principle. Handling and mechanical equipment principles. The performance principle. The principle of standardization. The principle of obsolescence. The principle of flexibility. Dead weight, equipment details, maintenance and repairs. The principle of safety. Straight-line and fatigue principle. Other principles of materials handling. Fork trucks and pallets. Tractors and trailers. Conveyors. Cranes. Miscellaneous equipment. Selection of types of equipment. Plant design as related to materials handling. Organization principles and practices.

Note: Presents in practical form essential principles of intraplant routing and flow of materials and describes the latest mechanical handling equipment devices and methods for saving time, money, and labor. Useful for industrial executives, foremen, and factory plant managers.

CIVIL ENGINEERING

General

KIRBY, RICHARD SHELTON, AND PHILIP GUSTAVE LAURSON

The early years of modern civil engineering. New Haven: Yale University Press, 1932. 324 p. illus. 24 cm. \$4.00. 3356

Contents: Preface. Illustrations. Introduction. Surveying. Canals, roads and pavements. Railroads. Bridges. Tunnels and subways. Waterworks and water power. Sewers. River and harbor improvement. Materials. Biographical outlines. Bibliography. Index.

Note: A history of the profession in terms of its accomplishments and leading engineers. The period covered is from the seventeenth to the late nineteenth century, and the emphasis is placed on modern beginnings rather than on a complete story of development. The book is addressed to those who have some background of civil engineering interest or knowledge.

MERRIMAN, MANSFIELD, EDITOR

American civil engineers' handbook. Editor-in-chief, Thaddeus Merriman, associate editor-in-chief, Thos. H. Wiggin. Fifth edition, thoroughly revised and enlarged. New York: John Wiley & Sons, Inc., 1930. 2263 p. illus. 19 cm. Bound in one volume, \$8.00; bound in two volumes, \$10.00. 3357

Contents: Mathematical tables. Mathematics and mechanics. Chemistry, physics, meteorology, weights and measures, steam engineering. Electric engineering. Surveying, geodesy, railroad location. Materials of construction. Foundations and earthwork. Timber structures. Masonry structures. Plain and reinforced concrete. Steel structures. Hydraulics, pumping, water power. Water supply. Dams, aqueducts, canals, shafts, tunnels, irrigation and drainage. Sewerage and sewage disposal. Refuse collection and disposal. Harbor and river works. Highway engineering. Steam railroads. Electric railroads. Index.

Note: A standard compilation of technical data on the various phases of civil engineering. The fifth edition follows generally the plan of its predecessors, with the exception that the order of the various sections has been to some extent altered to provide a more logical arrangement, the earlier of the twenty parts into which it has been divided now being concerned with general principles and materials and the latter dealing more with the application of those principles and with general design. In the two-volume edition, the complete index is bound in with each separate volume.

TRAUTWINE, JOHN CRESSON, AND JOHN C. TRAUTWINE, JR.

The civil engineer's reference-book (formerly "pocket-book"). Edited by John C. Trautwine 3d. Twenty-first edition. Ithaca, N.Y.: Trautwine Company, 1937. 1514 p. illus. 17 cm. \$7.00. 3358

Contents (abridged): Mathematics: Arithmetic. Geometry, mensuration, and trigonometry—Lines. Angles. Surfaces. Solids. Specific gravity. Weights and measures. Surveying. Natural phenomena: Sound. Heat. Air. Atmosphere. Wind. Rain and snow. Water. Evaporation. Leakage. Mechanics. Strength of materials: General principles. Transverse strength. Strength of columns. Shearing and torsional strength. Hydrostatics. Hydraulics. Constructions, etc.: Hoisting, conveying and excavating machinery. Dredging. Foundations. Stonework. Retaining walls.

Stone bridges. Timber dams. Water supply. Test and well boring. Rock drills. Traction, animal power. Trusses: Stresses in truss members. Bridge details and construction. Digests of specifications for bridges and buildings, steel railroad and highway bridges, combination railroad bridges. Suspension bridges. Rivets and riveting. Railroads: Track. Turnouts and crossings. Curves. Signaling. Yards and stations. Earthwork. Tunnels. Trestles. Rolling stock. Train resistance. Train dynamics. Operation cost. Construction cost. Materials: Timber. Iron and steel. Cement mortar. Concrete. Reinforced concrete. Price list. Bibliography. Index.

Note: A reference handbook for civil engineers, presenting in concise form a review of theory in mathematics, physics, mechanics, strength of materials, railroad construction, and related subjects, together with numerous tables of data, graphs, and other statistics. The section on railroads is rather extensive and covers their engineering and construction as well as some aspects of operation. This edition contains new material on hoisting, conveying and excavating machinery, but most of the text has not been revised.

URQUHART, LEONARD CHURCH, EDITOR

Civil engineering handbook. Second edition. New York: McGraw-Hill Book Company, Inc., 1940. 877 p. illus. 23 cm. \$5.00. 3359

Contents: Surveying, by R. E. Davis. Railway and highway engineering, by J. B. Babcock. Mechanics of materials, by J. B. Kommers. Hydraulics, by H. W. King. Stresses in framed structures, by L. C. Urquhart. Steel design, by C. T. Bishop. Concrete, by S. C. Hollister. Foundations, by C. C. Williams. Sewers and sewage disposal, by R. G. Tyler. Water supply and purification, by H. E. Babbitt.

Note: A handbook designed to present in one volume the fundamentals of the various subdivisions of civil engineering for the use of graduates and practicing engineers. The book is arranged so that it may also be used as a textbook in undergraduate courses. The purpose throughout has been to present a treatise of the whole field of civil engineering, with cross references between sections to tie the various branches together as a unit. Each section has its own bibliography but the usual reference tables have been omitted to allow increased space for discussion of theory. The second edition contains a rearrangement of material covering new developments in steel and concrete specifications during the period 1934-1940 as well as changes in the other fields.

Surveying

BOUCHARD, HARRY

Surveying. Second edition. Scranton, Pa.: International Textbook Company, 1940. 625 p. illus. 20 cm. (International texts in civil engineering, C. E. O'Rourke, consulting editor) \$3.75. 3360

Contents (abridged): Measurement of horizontal distances. Measurement of vertical distances. Measurement of angles. Field operations with the transit. Direction of a line. Traverse surveys. Earthwork. Special surveys. United States public land surveys. Municipal surveys. Latitude, longitude, azimuth, and time. Adjustment of instruments. Errors. Constructing and finishing maps. Appendix. Tables. Index.

Note: A textbook and reference handbook for engineering students, surveyors, and practicing engineers. Many of the subjects have been treated in greater detail than might be required for an elementary course, such additional material having been included for reference purposes only. For more advanced courses for students of civil engineering, however, the book must be supplemented by field tables and a text covering railway and highway surveying, which material is not included in the present work. The second edition contains new material on precise leveling, the computation of bearings, vertical curve formulas, photographic mapping from the air, earthworks, and astronomy.

BREED, CHARLES BLANEY, AND GEORGE L. HOSMER

The principles and practice of surveying. New York: John Wiley & Sons, Inc., 1938. 2 v. illus. 18 cm. Vol. I, \$4.00; Vol. II, \$3.50. 3360a

Contents (abridged): Volume I, Elementary surveying: Part I, Use, adjustment, and care of instruments: Measurement of lines. Adjustment of errors. Measurement of direction. Measurement of differences of elevation. Part II, Surveying methods: Land surveying. Traverse lines. Location of buildings. The stadia method. The plane-table method. City surveying. Contours. Mine surveying. Part III, Computations. Part IV, Plotting: Drafting instruments and material. Method of plotting. Finishing and filing drawings. Tables. Appendixes. Index. Volume II, Higher surveying: Part I, Control of the survey: Control. Triangulation. Traverses. Astronomical observations. Precise, trigonometric and barometric leveling. Part II, Filling in topographic details: The transit and stadia method. The plane-table method. The relation of geology to topography. Part III, Photographic surveying. Part IV, Hydrographic surveying and stream gauging. Part V, Constructing and finishing maps. Tables. Appendixes. Index.

Note: A comprehensive text and reference work for students and practicing surveyors, outlining the methods and technique of modern surveying in the United States. A current set consists of the seventh edition of Volume I and the fifth edition of Volume II. Revisions to the former include a detailed discussion of errors in measurement and their adjustment, additional information on convergence of meridians, new material on the stadia method and other topics, while the latter volume contains revisions on triangulation, astronomy, terrestrial and aerial photographic surveying, and new problems.

BREED, CHARLES BLANEY

Surveying. New York: John Wiley & Sons, Inc., 1942. 495 p. illus. 18 cm. \$3.00 3361

Contents: Surveys and their purposes; sources of surveying information. Measurement of distances. Measurement of direction; the magnetic compass. Measurement of angles; use of the transit. The engineer's level and its use. Traverses and land surveys. Calculation of closed traverses and land areas. The United States system of surveying the public lands. Contours. Stadia surveying with transit and plane table. Aerial surveying. Lines and grades. Cross-sections; volumes. Miscellaneous surveying problems. Plotting and finishing maps. Tables. Index.

Note: A succinct treatment of the fundamentals of modern surveying practice. A full discussion is given of the principles and of the use of surveying instruments. Numerous field exercises and problems in this part of the book provide a basic knowledge of surveying technique. Emphasis is placed on surveying for construction. One survey is carried on from the beginning to the end of the book and is used throughout to illustrate the principles under discussion. The latter part of the book comprises a set of tables, sufficiently extended to meet the needs of almost all surveying problems.

DAVIS, RAYMOND EARL

Elementary plane surveying, text and manual. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 494 p. illus. 19 cm. \$3.00. 3362

Contents: Field and office work. Errors. Measurement of distance. Measurement of difference in elevation. Differential leveling. Profile leveling. Cross-sections. Grades. Plotting profiles and cross-sections. Volumes of earthwork. Measurement of angles and directions. The engineer's transit. Transit-tape surveys. Stadia surveying. Triangulation of ordinary precision. Map drafting. Map plotting. Calculation of areas of land. Topographic maps. The plane table. Topographic surveying. Route surveying. Land surveying. Determination of latitude and azimuth. Tables.

Note: A combined text and field manual, covering the theory and practice of surveying as usually presented for non-civil engineering students. Features are the brief yet inclusive treatment, and the discussion of the subject of errors and their influence upon the precision of measurements. Numerous examples, problems, and field and office exercises are included.

DAVIS, RAYMOND EARL, AND JOE WALLACE KELLY

Short course in surveying. New York: Mc-

Graw-Hill Book Co., Inc., 1942. 330 p. illus. 19 cm. \$2.50. 3363

Contents: Preface. Tables. Field and office problems. Field and office work; errors. Measurement of distance. Measurement of difference in elevation. Differential and profile leveling. Measurement of angles and directions. The engineer's transit. Transit-tape surveys. Stadia surveying. Map drafting. Map plotting. Calculation of areas of land. Topographic maps. The plane table. Topographic surveying. Route surveying. Land surveying. Determination of azimuth. References. Trigonometric and miscellaneous surveying tables. Index.

Note: This book presents the fundamental principles and practice of elementary plane surveying for the rapid training of rodmen, chainmen, instrumentmen, and draftsmen. It is a condensation of more advanced textbooks widely used in engineering colleges, only those subjects being presented which are intended to lead to a reasonable proficiency in the shortest possible time.

DAVIS, RAYMOND EARL, AND FRANCIS S. FOOTE
Surveying theory and practice. Third edition. New York: McGraw-Hill Book Company, Inc., 1940. 1032 p. illus. 19 cm. \$5.00. 3364

Contents: Fundamental concepts. Essential features of principal surveying instruments. Field work. Computations. Errors. Map drafting. Measurement of distance. Measurement of difference in elevation. Differential leveling. Profile leveling. Cross-sections. Grades. Plotting profiles and cross-sections. Volumes of earthwork. Measurement of angles and directions. The engineer's transit. Transit-tape surveys. Stadia surveying. Triangulation. The plane table. Plotting maps. Calculation of areas of land. Principles of field astronomy. Azimuth. Latitude. Longitude, and time. Land surveying—rural and urban. United States public-land surveys. Topographic maps. Topographic surveying. Route surveying. Route curves. Construction surveys. Mine surveying. Hydrographic surveying and flow measurement. Photogrammetric surveying. Map projections.

Note: A one-volume text based on long experience in teaching and in actual practice, giving a full presentation of the material usually taught in surveying courses and sufficiently comprehensive to be of value to practicing engineers and surveyors.

PENCE, WILLIAM DAVID, AND MILO S. KETCHUM

Surveying manual; a manual of field and office methods for the use of students in surveying. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1932. 363 p. illus. 19 cm. \$2.50. 3365

Contents: Surveying methods: General instructions. The chain and tape. The compass. The level. The transit. Practice of surveying: Topographic surveying. Land surveying. Railroad surveying. Errors of surveying. Methods of computing. Topographic plotting and mapping. Field and office tables for use in surveying. Index.

Note: A practical text for the engineering student, in which the first half of the volume deals with a description of the use and theory of the various surveying instruments. The second half is devoted to an explanation of actual surveying methods. This edition has been completely reset, but only minor changes have been made in the text. An appendix includes tables of logarithms and natural trigonometric functions.

PICKELS, GEORGE WELLINGTON, AND CARROLL CARSON WILEY

Route surveying. Second edition. New York: John Wiley & Sons, Inc., 1939. 427 p. illus. 18 cm. \$3.50. 3366

Contents: Route surveys. Maps, plans, and profiles. Distance, curvature and grades. Circular curves. Spirals. Re-alignment of curves by the string-lining method. Railroad turnouts, connections and crossings. Earthwork. Index. Tables: Train resistance. Locomotive data, Illinois Central Railroad. Average tractive resistance of different road surfaces to pneumatic tires at normal speeds. Difference in length in arcs and chords. Theoretical superelevation for highway curves. Practical turnout leads. Coordinates for locating parallel sidings with tape. Distances along main track between frog points for cross-overs between parallel tracks. Trigonometric formulas. Radii. Even radius curves. Spiral data.

Functions of one-degree curve. Logarithms of numbers. Logarithmic sines and cosines. Logarithmic tangents and cotangents. Natural sines, cosines, tangents and cotangents. Natural versed sines and external secants. Cubic yards per 100 feet. Cubic yards in 100 feet length. Index.

Note: A concise, modern, and practical discussion of surveying as it applies to highways, canals, pipe lines, transmission lines, and other modes of transportation, with particular reference to American practice. This second edition retains the form and essential characteristics of the first edition, but incorporates extensive revisions to show modern progress. A new chapter has been added on the string-lining method of re-aligning railroad curves; treatment of the spiral curve has been enlarged, and mass curve and earthwork distribution have been treated at greater length than in the earlier edition.

RAYNER, WILLIAM HORACE

Advanced surveying. New York: D. Van Nostrand Company, Inc., 1941. 360 p. illus. 20 cm. \$3.25. 3367

Contents: Errors. Precise leveling. Traverse. Triangulation. Field astronomy. Topographic surveying. Hydrographic surveying. The measurement of stream flow. Mine surveying. Photogrammetry. Plane coordinates. History of surveying. Index.

Note: This book is designed for use in the second term of full-year college courses in surveying. It explains the more refined methods of measurement used in accurate work, such as triangulation, and the determination of position on the earth by means of astronomical observations. It also contains a number of specialized methods, which include the methods of assembling and interpreting aerial photographs.

RAYNER, WILLIAM HORACE

Elementary surveying. Second edition. New York: D. Van Nostrand Company, Inc., 1943. 419 p. illus. 19 cm. \$3.00. 3368

Contents: Use and adjustment of instruments: General principles. Measurement of distance. The level. Angles and directions. The transit. Construction surveys: Leveling. Transit surveys. Computations. Circular and vertical curves. Stadia surveying. Contours and contour construction. The plane table. Topographic surveying. Mapping. Determination of a true meridian. Land surveying. Index. Tables. Field problems.

Note: A college textbook intended primarily for short courses, or for the first half-year of full-year courses in surveying. It explains the general principles that govern the methods used by the surveyor. It gives directions for the operation of the various instruments and explains the procedure followed by the surveyor in his field and office work.

RUBEY, HARRY, AND OTHERS

Engineering surveys: elementary and applied, by Harry Rubey, George Edward Lommel, and Marion Wesley Todd. New York: The Macmillan Company, 1942. 834 p. illus. 19 cm. \$4.50. 3369

Contents (abridged): Elementary engineering surveys: Measurement of distances. Field notes. Compass surveying. Leveling. The transit. Observations for meridian. Stadia surveying. Topography. Triangulation. Land surveys. Route surveys. Area surveys. City surveys. Computation of traverses, latitudes, and departures, co-ordinates and areas. Organization of surveys. Applied engineering surveys: Horizontal control. Engineering astronomy. Vertical control. Topographic details. Photogrammetry. Map projections and state coordinates. Hydrographic surveying and flow measurements. Legal principles of boundary surveying. City planning surveys. Underground surveys. Construction surveys. Tables. Index.

Note: A text and reference for the first- and second-year courses in surveying for student engineers. The first part of the text dealing with elementary surveys is identical with the text of the authors' *Engineering surveys*, second edition, New York: The Macmillan Company, 1940, 462 p., \$3.50, which may be used separately by those preferring a shorter text. The aim of the combined volume has been to present the entire subject as it is taught throughout the United States, covering minimum requirements of the National Surveying Teachers' Conference of 1940. Photogrammetry is included as a recent important development in surveying, including stereocomparagraphic theory and practice. One hundred thirty-two pages of surveying and mathematical tables are also given.

RUBEY, HARRY

Route surveys. A pocket book for the survey, design, and construction of railways, highways, canals, flumes, levees, pipe lines, transmission lines, and other route constructions. New York: The Macmillan Company, 1938. 549 p. illus. 17 cm. (Engineering science series, edited by E. R. Hedrick) \$3.75. 3370

Contents (abridged): Introduction. The reconnaissance. The preliminary location. Simple circular curves. Compound and reverse curves. Solution by traverse. Vertical and other parabolic curves. Spirals. Railway turnouts and track layouts. String lining of curves. Excavation and embankment. Haul and mass diagram. Right of way. Construction. Observations for meridian. Adjustment of instruments. Arc definition of degree of curve. Tables. Index.

Note: Covers the principles and methods of surveying all ordinary types of routes. Intended for use as a text for students and a reference book for practicing engineers, the book is written from the engineering point of view and less of the usual theoretical and mathematical details are covered. The aim is to enable young engineers to pass more quickly through the apprentice stage and into the professional practice of surveying. Two hundred sixty-one pages are devoted to mathematical and surveying tables, including graphic diagrams for computing cubic yardage for prisms and cross-sections.

TAYLOR, WARREN CROSBY

Elementary surveying. Scranton, Pa.: International Textbook Company, 1939. 236 p. illus. 19 cm. (International texts in civil engineering, C. E. O'Rourke, consulting editor) \$2.00. 3371

Contents: Introduction. Theory of measurements. Measurement of linear distances. Measurement of vertical distances. Measurement of angles and direction. Traversing and detailing. Profiling. Stadia. Coordinates. Mapping area. Adjustment of instruments. Plane table. Topography. Determination of meridian. Volumes. Land surveying. Tables. Index.

Note: A concise textbook for short course in surveying usually given to engineering college freshmen. Particular emphasis is placed on the needs of students in branches other than civil engineering.

UNITED STATES. GENERAL LAND OFFICE

Manual of instructions for the survey of the public lands of the United States, 1930. Washington, D.C.: Government Printing Office, 1931. 530 p. illus. 18 cm. \$1.50. 3372

Contents: Regulations imposed by law. Instruments and methods. System of rectangular surveys. Corner monuments. Restoration of lost corners. Resurveys. Special surveys and instructions. Field notes. Plats. Mineral surveys. Index. Appendix: List of forms of record. Specimen field notes. Specimen plats.

Note: This manual issued for the guidance of the cadastral engineering service of the General Land Office supersedes all previous manuals and circulars on the technical subjects which it contains. It gives detailed instructions for the making of government surveys.

UNITED STATES. GENERAL LAND OFFICE

Standard field tables and trigonometric formulas. A supplement to the Manual of instructions for the survey of the public lands of the United States. Fifth edition, 1939. Washington, D.C.: Government Printing Office, 1939. 229 p. illus. 18 cm. \$0.75. 3373

Contents: Units of linear measure, units of area, expansion of steel tapes, and conversion tables chains to feet and feet to chains. Reduction in latitude to south boundary of township, and corrections for convergency within a township. Traverse table, for the correction of random lines. Traverse tables. Correction of error in stadia wire interval. Stadia coefficients, vertical rod.

Natural sines and cosines. Natural tangents and cotangents. Logarithmic sines, cosines, tangents, and cotangents. Logarithms of numbers. Convergence of meridians, and differences of latitude and longitude. Azimuths of the tangent to the parallel. Offsets from the tangent to the parallel. Azimuths of the secant. Offsets from the secant to the parallel. Lengths of arcs of the earth's surface. Apparent time of sunrise and sunset. Conversion tables, degrees to time, and time to degrees. Sidereal conversions, and reductions to the local mean time of upper culmination of Polaris. Mean refractions in zenith distance. Coefficients to apply to mean refractions for variations in barometer and temperature. Coefficients for computing errors in azimuth, due to small errors in declination or latitude. Mean refractions in polar distance. Trigonometric formulas for the solution of plane triangles. Trigonometric formulas for the solution of stadia measurements, observations for time, latitude, and azimuth, and problems in convergency. Conversion tables: The arpent and vara units. Chains and links to feet. Feet to chains and links.

Note: This is the fifth and latest edition of the supplement to the *Manual of instructions* (see preceding entry). The fourth edition of the supplement appeared in 1934 under the title *Tables and formulas for use of U.S. surveyors and engineers on public land surveys* (224 p.), under which title the earlier editions also appeared. The volume consists entirely of tables and formulas.

Photogrammetry

ABRAMS, TALBERT

Essentials of aerial surveying and photo interpretation. New York: McGraw-Hill Book Company, Inc., 1944. 289 p. illus. 19 cm. \$3.00.

3374

Contents: Mathematics, simplified and abbreviated. Surveying. Maps and globes. Map projections. Orientation and location. Topographic drafting. How aerial photographs are made. Stereovision. Interpretation. Ground form lines. Stereo-plotting instruments. Topographic relief models. Restitution and rectification of aerial photographs. Template methods of radial line control. How to make a mosaic from aerial photographs. The trimetrogon system of world charting.

Note: An introductory textbook based on material used for instruction at the Abrams School of Aerial Surveying and Interpretation, and in ESMWT courses in various schools and colleges. The greater part of the volume deals with the actual taking, processing and interpretation of aerial photographs, but some attention is also given to the use of the slide rule, surveying, map projections and topographic drafting. There is a glossary of photogrammetric expressions and a brief bibliography.

AMERICAN SOCIETY OF PHOTOGRAMMETRY

Manual of photogrammetry. Edited by P. G. McCurdy, L. A. Woodward, J. I. Davidson, R. M. Wilson, and R. E. Ask. New York: Pitman Publishing Corporation, 1944. 841 p. illus. 26 cm. \$8.50.

3375

Contents: Introduction. Principles of surveying. Photogrammetric optics. Cameras. Photographic mission. Photographic materials and laboratory technique. Geometric characteristics. Stereoscopes. Interpretation. Radial plotting methods. Photographic mosaics. Stereoscopic mapping methods. Analytical computations. Mapping from oblique photographs. Field inspection and completion. Miscellaneous application. Training and education. Nomenclature and definitions. Index.

Note: A comprehensive reference book intended for civil engineers, surveyors, foresters, geologists, archeologists, traffic control researchers, and others who make use of aerial photographs. Most of the chapters are the work of several recognized specialists.

BAGLEY, JAMES WARREN

Aerophotography and aerosurveying. New York: McGraw-Hill Book Company, Inc., 1941. 324 p. illus. 23 cm. \$3.50.

3376

Contents: Introduction. Aerial cameras and accessory instruments. Lenses, color filters and shutters for aerial cameras. Flights for photography: requirements and preparation. Laboratory equipment and its use. Reading and interpretation of aerial

photographs. Geometrical characteristics of aerial photographs. Principles of photographic transformations and transformation printers. Principles of stereoscopy and application to photogrammetry. Methods of determining the tilt of an aerial photograph. Methods of obtaining elevations and contours from aerial photographs. Plotting methods and plotting instruments. Mosaic maps and aerial photographs as illustrations. Methods of obtaining horizontal and vertical control by ground surveys. Map projections, grids and forms. Finishing a map for reproduction. Errors and measures for counteraction. Calibration of cameras.

Note: A comprehensive treatment of all steps in the making of maps and surveys by means of aerial photography. Gives information to help in the selection of equipment and the planning of flights, and covers the principles, methods, and calculations of interpreting photographs and transforming them into maps, with special emphasis on methods of finding tilt, getting elevations, and contouring.

CHURCH, EARL FRANK

Elements of aerial photogrammetry. Syracuse, N.Y.: Syracuse University Press, 1944. 95 p. illus. 24 cm. \$2.00.

3377

Contents: Fundamental principles of aerial photogrammetry. Applications of the fundamental principles to practical problems. Stereocomparagraph and contour-finder technique. Planimetric map compilation based upon radial line plotting. Mosaics. Topographic mapping with the multiplex projector. Perspective grid method for constructing planimetric maps from high oblique photographs. Tri-metrogon method for reconnaissance mapping. Conclusion.

Note: Contains the basic material for a first semester's course in the subject. The first half of the book is devoted wholly to the particular fundamental principles which constitute a sound theoretical background in photogrammetry, while the second half presents the practical mapping methods essential to an initial working knowledge of the subject. Intended for use with supplementary laboratory work.

EARDLEY, ARMAND JOHN

Aerial photographs: their use and interpretation. New York: Harper & Brothers, 1942. 203 p. illus. 24 cm. (Harper's geoscience series; Carey Croneis, editor. No. 1) \$2.75.

3378

Contents: Aerial photographs as maps. Stereoscopes. Contouring vertical photographs. Mosaics. Interpretation of culture. Geologic maps. Patterns of outcrop. Photographic guides for tracing contacts. Example of interpretation. Tracing geologic contacts on photographs. Structure contour maps. Cross sections. Oblique aerial photographs for reconnaissance mapping. Tactical interpretation. Index.

Note: This volume assembles and systematizes information on photogrammetric techniques necessary in the general use and interpretation of aerial photographs. It includes sections on their characteristics, identification, and availability; types of cameras and manner of photoflying large areas; principles of stereoscopic vision, types of stereoscopes, and their use in the study of aerial photographs; field and stereoscopic methods of contouring vertical photographs; the technique of making mosaics adapted to the needs of the field scientist; the interpretation of geologic maps; and the tactical interpretation of aerial photographs in the theatre of war. The book is the expanded eighth edition of a text previously available only in lithoprint form.

SHARP, HOWARD OAKLEY

Photogrammetry. Third edition. New York: John Wiley & Sons, Inc., 1943. 129 p. illus. 28 cm. \$3.50.

3379

Contents: Cameras and lenses. Terrestrial photography. Stereotopographic mapping. Aerial photographic surveying and mapping. Displacement due to topographic relief and tilt. Measuring and plotting instruments. Control. Planning an aerial survey. Oblique aerial surveying. Analytical solution of the problem of topographic mapping. Land surveying by photogrammetric methods; scale checking. Map reproduction. The use of photographs in accident investigations. The photogrammetry laboratory. Tax maps. Index.

Note: This book presents the basic principles of both terrestrial and aerial photographic surveying, together with their application to map making. The treatment of the subject is practical. Descriptions are given of the cameras, instruments, and methods which have proved satisfactory in actual use. Chapters are in-

cluded on the analytical solution of photogrammetric problems and the use of the photograph in land surveying, and special chapters are offered on the use of photographs in accident investigations and the making of tax maps. One chapter in the book is devoted to a description of the equipment needed for a laboratory and the use of models for instructional purposes.

SMITH, HAROLD THEODORE UHR

Aerial photographs and their applications. New York: D. Appleton-Century Company, Incorporated, 1943. 372 p. illus. 24 cm. (The Century earth science series) \$3.75. 3380

Contents: Introduction. Characteristics of aerial photos. Stereoscopic study of aerial photos. General principles of photo interpretation. Geographic and topographic interpretation. Planimetric maps from vertical photos. Planimetric maps from oblique photos. Photomosaics. Contour maps from aerial photos. Geologic interpretation. Physiographic interpretation. Aerial photos in economic geology, engineering, and other fields. Military applications.

Note: A practical, profusely illustrated textbook that provides a knowledge of the simpler methods of making maps from aerial photographs and gives thorough instruction in the interpretation of photographs with special reference to the geologic point of view, but with attention also to the problems of the engineer, geographer, and military scientist.

TALLEY, BENJAMIN BRANCHE

Engineering applications of aerial and terrestrial photogrammetry. New York: Pitman Publishing Corporation, 1938. 612 p. illus. 23 cm. \$10.00. 3381

Contents: Introduction to photogrammetry. The photograph. Single-lens aerial cameras. Multiple-lens aerial cameras. Aerial camera accessories. Flying for photography. The technique of aerial photography. The development and printing of aerial film. Stereoscopy and the stereoscopic observation of aerial photographs. The multiplex aero-projector. Map projections. Basic ground control. The extension of control. Compilation of detail from aerial photographs. Mapping with oblique aerial photographs. Terrestrial photogrammetry. Mosaics from aerial photographs. The reproduction of maps. Photogrammetric plotting instruments. Further applications of photogrammetry. Appendix. Name index. Index.

Note: Based upon experience in the taking of aerial photographs and in using the radial line method of compiling topographical maps, aided by stereoscopic plotting instruments. A knowledge of surveying instruments is presupposed. A step-by-step treatment is given of the production of finished maps, mosaics, or single photographs. The author bases his treatment of American equipment and methods upon practical experience, but relies on manufacturers' information and other authorities for discussion of foreign equipment and methods.

UNITED STATES. WAR DEPARTMENT

Aerial phototopography. War Department Technical manual TM 5-240. War Department, 10 May 1944. Washington: Government Printing Office, 1944. 111 p. illus. 26 cm. \$0.30. 3382

Contents (abridged): Aerial photography. Ground control. Map projections. Characteristics of aerial photographs. Radial-line mapping. Mapping from tri-metrogon aerial photography. Photomaps. Stereoscopic mapping. Multiplex mapping. Special mapping methods. Appendixes: Glossary. List of references. Multiplex plotting and photograph data. Index.

Note: This manual supersedes TM 5-240, 21 November 1941. This manual provides information on all methods by which military organizations prepare maps from aerial photographs. It covers military methods of mapping from aerial photographs and the requirements for aerial photography, for ground established control and for preparing maps for reproduction. It does not cover the details of drafting or of Multiplex operation.

Cartography

GREENHOOD, DAVID

Down to earth: mapping for everybody. With

illustrations by Ralph Graeter. New York: Holiday House, 1944. 262 p. illus. 28 cm. \$4.00.

3382a

Contents: Part I, Getting the most out of maps: The nature of maps. How to find places. Airplanes and square planes. This little means that much. The rose of the winds; direction. Making molehills out of mountains. Flat maps with round meanings. Part II, Making your own: Basing maps on other maps. Basing maps upon the ground. Part III, Forming a collection: Treasures, tools, and materials. Appendix. Index.

Note: A popular treatment of maps for the amateur, designed to give him an understanding and appreciation of maps whether his interest be as user, maker, or collector. The style is conversational throughout and the large number of pictorial-type illustrations is intended to simplify the technical details as much as possible. There is a bibliography of 110 books and periodicals and a collection of useful measures, conversion factors, and other units.

GREITZER, SAMUEL L.

Elementary topography and map reading. New York: McGraw-Hill Book Company, Inc., 1944. 157 p. illus. 23 cm. \$1.60. 3382b

Contents: Preface. Problems of map making. Application of mathematics to map reading. Mapping the earth. Elements of topographic mapping. Direction and azimuth. Using topographic maps. Elevation and relief. Applications from contouring theory. Map reading in the field. Aerial photographs and special maps. Bibliography. Index.

Note: A simply written introduction adaptable to the needs of the general reader who wishes to learn to read maps. The mathematical portion of the work has been made as easy as possible in order that students with no mathematical training could use it without difficulty. There are exercises at the end of each chapter.

MUSHAM, HARRY ALBERT

The technique of the terrain; maps and their use in the field in peace and war. New York: Reinhold Publishing Corporation, 1944. 228 p. illus. 24 cm. \$3.85. 3383

Contents: Introduction. Geometry of the map. The construction of maps. Units of measurement. Drafting. Conventional signs. Scales. Direction. Distance. Relief. Slopes. Coordinates. Aerial photography. Tactical topography. Maps and logistics. Military geography. Appendixes. Index.

Note: Map construction, interpretation, and use are presented in a concise and simplified text. The types of projections used in map-making are described, together with an explanation of scales, direction, isogonic maps, methods for designating relief, and actual drafting procedure. Three chapters deal with the interpretation and use of maps particularly from a military point of view. These include a discussion of the relationship of maps and logistics. The appendixes contain conversion factors for units of measurement and tables of natural functions.

RAISZ, ERWIN JOSEPHUS

General cartography. New York: McGraw-Hill Book Company, Inc., 1938. 370 p. illus. 23 cm. (McGraw-Hill series in geography; V. C. Finch, consulting editor) \$4.00. 3383a

Contents: Preface. Introduction. Book I, General cartography: Part 1, The history of maps: Manuscript maps. The renaissance of maps. The reformation of cartography. American cartography. Part 2, Scales and projections: Scales, parallels, and meridians. Projections. The conic group of projections. The azimuthal projections. Part 3, Representation of the earth's pattern on maps: Symbols. Relief features. Contour lines. Other relief methods. Part 4, Lettering, composition, and drafting of maps: Lettering and geographical names. Composition and drafting of maps. Drawing tools and materials. Methods of map reproduction. Book II, Special maps: Part 5, Official and professional maps: Government maps. Important topographic maps of the world. Charts. Private cartography. Part 6, Diagrams, statistical maps, and cartograms: Diagrams. Distribution maps. Cartograms. Slope, soil, erosion, and land-utilization maps. Part 7, Science maps and diagrams: Geological maps and block diagrams. Economic maps. Maps of geography. Maps of other sciences. Part 8, Globes, models, field sketching, and cataloguing: Globes. Topographic relief models. Field sketching. Preservation and cataloguing of maps. Exercises. Bibliography of easily available references. Index.

Note: A complete introduction to the subject of cartography, intended both for the general reader and as a textbook for college courses in cartography. The language is simple and the illustrations abundant.

SLOANE, ROSCOE CHESTER, AND JOHN M. MONTZ

Elements of topographic drawing. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 251 p. illus. (part col.) 23 cm. \$2.75. 3384

Contents: Topographic drawing. Conventional signs. Topographic mapping. Topographic drawing in colors. Contours and contour sketching. Copying—duplication—reproduction. Map projections. Suggestions for office practice. Suggested problems.

Note: A comprehensive treatment which, in this revision, includes the changes in symbols brought about by advances in military equipment and practice, air transportation, and railway equipment and service. A feature of the book is the discussion of the use of the polar planimeter and the elements of the common forms of map projection.

UNITED STATES. COAST AND GEODETIC SURVEY

Cartography: a review and guide for construction and use of maps and charts, by Charles H. Deetz. Revised edition, 1943. Washington, D.C.: Government Printing Office, 1943. 84 p. illus. (part col.) 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 205) Paper, \$0.65. 3385

Contents: Historical and critical review. Classification and analysis. Compilation of material. Map projections. Elements of direction and its related terms; different ways of defining direction. Technique of construction. Index.

Note: Traces briefly the attempts made from earliest times to depict accurately on paper existing geographic information of the terrain and the sea, and outlines what are now considered the best methods of securing and utilizing map data. Intended as a general survey of cartography for the map compiler and other workers in the field of maps and charts. There is a large number of illustrations, including aerial photographic maps and colored charts, in the revised edition.

UNITED STATES. COAST AND GEODETIC SURVEY

Elements of map projection, with applications to map and chart construction, by Charles H. Deetz and Oscar L. Adams. Fifth edition, revised 1944. Washington, D.C.: Government Printing Office, 1944. 226 p. illus. 25 cm. (United States. Coast and Geodetic Survey. Special publication no. 68) Paper, \$1.00. 3386

Contents (abridged): General statement. Analysis of the basic elements of map projection. Representation of the sphere upon a plane. Elementary discussion of various forms of projection. The polyconic projection. The Bonne projection. The Lambert zenithal (or azimuthal) equal-area projection. The Lambert conformal conic projection with two standard parallels. The grid system of military mapping. The Albers conical equal-area projection with two standard parallels. The Mercator projection. Fixing position by wireless directional bearings. World maps: The Mercator projection. The stereographic projection. The Aitoff equal-area projection of the sphere. The Mollweide homolographic projection. Goode's homolographic projection (interrupted) for the continents and oceans. Lambert's projection of the northern and southern hemispheres. Conformal projection of the sphere within a two-cusped epicycloid. Guyou's doubly periodic projection of the sphere. Recent contributions to world mapping. Index.

Note: A concise presentation of the theory and practice of map projection for the student of cartography as well as for the layman who makes use of maps in his work. Mathematical theory for the more important projections is presented and there are tables for the construction of Mercator and Lambert projections. Ten plates of specimen maps are included.

UNITED STATES. COAST AND GEODETIC SURVEY

Tables for a polyconic projection of maps and

lengths of terrestrial arcs of meridian and parallels, based upon Clarke's reference spheroid of 1866. Sixth edition. Washington, D.C.: Government Printing Office, 1935. 189 p. 29 cm. (United States. Coast and Geodetic Survey. Special publication no. 5) Paper, \$0.30. 3387

Note: A reference work for cartographers, giving tables of arcs of the parallel in meters for each degree, minute, and second of latitude, together with the meridional arcs and coordinates of curvature for the polyconic projection in meters per unit of latitude and longitude. The data given depends upon the dimensions of the spheroid representative of the earth's figure and size as determined by Col. A. R. Clarke in 1866 and as expressed by him in meters. The present tables were first published in 1884 and the only changes in subsequent editions have been in the typography and in the introductory material.

Theory of Structures

AMIRIKIAN, ARSHAM

Analysis of rigid frames (an application of slope deflection). Washington, D.C.: Government Printing Office, 1942. 396 p. illus. 23 cm. \$1.00. 3388

Contents: Part I, Fundamental relations: Moment area theory. Conjugate beam. Fixed end moments. Three moment relation. Slope deflection. Part II, Frames without side sway: Direct method of solution. Solution by approximations. Part III, Frames involving side sway: Rectangular bents. Trapezoidal bents. Vierendeel trusses. Gable bents. Lean-to bents. Hip bents. Bents of irregular outline. Part IV, Supplementary considerations: Displacement of foundations. Horizontal spread. Vertical settlement. Rotation. Semirigid framing. Effect of width of supports. Axial deformations. Shearing deformations. Answers to problems. Appendix. Index.

Note: This treatise on rigid-frame analysis was written primarily for the benefit of the technical personnel of the Bureau of Yards and Docks of the Navy as an aid in the design of continuous structures, analysis being a means of realizing appreciable savings in materials. Its contents have been used as text for courses in structural framing. It is also suitable as a reference text for self-study.

BISHOP, CARLTON THOMAS

Structural design. New York: John Wiley & Sons, Inc., 1938. 254 p. illus. 23 cm. \$3.50. 3389

Contents: Introduction. Shear and bending moment. Stresses. Beams. Plate girders. Tension and compression members. Riveting and welding. Girder details. Pins and reinforcing plates. Bearing plates, base plates and grillage beams. Bridges. Multi-story buildings. Industrial buildings. Index.

Note: In presenting the fundamental principles of design, this book first applies the principles to detached individual members without regard to their relation to other members in a structure. The application of these principles is later illustrated by the design of interconnected members of typical structures. A large number of diagrams and tables are included.

CISSEL, JAMES HARLAN

Stress analysis and design of elementary structures. New York: John Wiley & Sons, Inc., 1940. 335 p. illus. 23 cm. \$4.00. 3390

Contents: Part I, Stresses: Introduction. Definitions. External forces; loads. Graphic statics. Reactions; shear; bending moment. Restrained and continuous beams. Trusses. Stability of masonry structures and foundations. Part II, Design of simple structures: Structural fastenings and connections. Timber beams and columns. Steel beams, girders and columns. Reinforced concrete beams, slabs and columns. Appendix. Index.

Note: This book contains an extensive body of data on principles of statics and stress analysis, with much recent information regarding dead and live loads, wind forces, earthquake forces, and lateral pressures on walls, for guidance in the preparation or checking of designs. The inclusion of many tables of data, diagrams, and statistics makes this book a self-contained working book.

FIFE, WALTER MAXWELL, AND JOHN BENSON
WILBUR

Theory of statically indeterminate structures. New York: McGraw-Hill Book Company, Inc., 1937. 248 p. illus. 23 cm. \$3.50. 3391

Contents: Basic concepts and theorems. Deflections. Stress analysis for statically indeterminate structures. Influence lines for statically indeterminate structures. Secondary stresses in trusses.

Note: An engineering text which presents the principles which underlie the analysis of statically indeterminate structures and the methods of applying these principles in such analysis. Places emphasis on development and application of ideas rather than on conventional problems and solutions for structures of specific types.

FULLER, ALMON HOMER, AND FRANK KERESKES
Analysis and design of steel structures. New York: D. Van Nostrand Company, Inc., 1936. 627 p. illus. 23 cm. \$5.00. 3392

Contents: Reactions. Stresses in framed trusses. Beams. Plate girders. Design of steel roof trusses. Industrial buildings. Stresses in trusses for moving loads. Economic factors governing the proportions of simple span bridges. Design of truss bridges. Deflection of trusses—statically indeterminate structures. Multi-story buildings. Continuous frames and secondary stresses. Appendices: Specifications for steel railway bridges. Standard specifications for highway bridges.

Note: This college textbook is designed to induce the student to solve each problem from basic principles, without reference to similar problems elsewhere. Accordingly, the principles of structural mechanics are reviewed and the methods of designing steel structures are explained. There are numerous problems with the tables, diagrams, and specifications needed to complete them.

GRINTER, LINTON ELIAS

Automatic design of continuous frames in steel and reinforced concrete. New York: The Macmillan Company, 1939. 141 p. illus. 23 cm. \$3.00. 3393

Contents: Philosophy of automatic design for continuous structures. Modern methods of analysis of continuous frames. Automatic design of continuous beams. Automatic design of continuous frames. Automatic design with haunched members. Analysis of continuous frames by balancing angle changes. Determining influence lines by balancing angle changes. Index.

Note: Revising the old system of repeated analysis and design into a single procedure of successive corrections, this book presents a method which the author terms "automatic design" as applied to problems of structural engineering. The book is intended to supplement other texts, including the author's, on the theory and design of structures.

GRINTER, LINTON ELIAS

Design of modern steel structures. New York: The Macmillan Company, 1941. 452 p. illus. 23 cm. \$5.00. 3394

Contents (abridged): Riveted connections: Internal action of riveted joints. Rivet resistance. Eccentricity in riveted connections. Design of tees and connection angles. Welded connections: Arrangement of structural welds. Stress analysis for welds. Throat and root stresses in fillet welds. Design of structural welds. Pins and bolts for connections: Pin design. Pin plates. Timber construction: Holding power of nails and screws. Bolted joints in timber. Timber connectors. Tension members: Bars and rods. Structural shapes. Built-up tension members. Compression members: Column action. Column design. Truss members. Beams and girders: Fundamental theory. Buckling resistance of beams. Floor design. Strengthening old structures. Combined direct stress and flexure: Theory of combined action. Stress and stability: Maximum stresses. Bearing stresses. Plate design. Buckling of plates. Stress concentration. Torsion of beam sections. Design of plate girders. Roofs for industrial buildings: Riveted truss design. Welded truss design. Design of a low truss highway bridge. Office buildings: Examples of functional arrangement. Design and construction details. Design of a tall building: Floor arrangement. Column selection. Wind resistance by statics.

Design of continuous beams: Special design problems. Specifications. Index.

Note: A companion volume to Grinter: *Theory of modern steel structures*, Volume I, described below. These two books are intended to cover all of the problems of analysis and design that can be treated to advantage in the usual undergraduate college courses in statically determinate structures. There is considerable emphasis in this volume upon the design of structural members and structural joints both in timber and in steel.

GRINTER, LINTON ELIAS

Elementary structural analysis and design, steel, timber, and reinforced concrete. New York: The Macmillan Company, 1942. 383 p. illus. 24 cm. \$3.75. 3395

Contents: Design and construction. The tools of stress analysis. Industrial buildings. Riveted connections. Welded connections. Pins and bolted connections. Tension and compression members. Rolled beams and girders. Plate-girder design. Roofs for industrial buildings. Timber construction. Timber roof truss design. Reinforced concrete construction. Reinforced concrete beams and slabs. Reinforced concrete columns. Wall and column footings. Formulas and charts for reinforced concrete design. Specifications. Index.

Note: This volume is especially designed for architects, mechanical engineers, sanitary engineers, and others not specializing in bridge design. It covers both the analysis and design of simple structures of steel, timber, and reinforced concrete. For timber structures the use of modern timber connectors and the design of roof trusses with timber connectors are treated. Reinforced concrete beams, slabs, columns, and footings are discussed in the light of the 1940 report of the Joint Committee on Concrete and Reinforced Concrete. The major design problems on the steel roof truss and the steel girder are solved for both riveted and welded structures. Fifty design sheets illustrate the solution of typical design problems as they would be solved in a design office.

GRINTER, LINTON ELIAS

Theory of modern steel structures. New York: The Macmillan Company, 1936-37. 2 v. illus. 23 cm. (Engineering science series, edited by E. R. Hedrick) \$8.00. 3396

Contents: Volume I. Introduction. The theory of stress analysis. Steel mill buildings. Highway truss bridges. Railway truss bridges. The plate girder. Tall steel buildings. Index. Volume II. Analysis and design of indeterminate structures. Framed structures in space. Deflections of structures. Classical methods of analysis of indeterminate structures. Continuous, movable and long-span bridges. Modern methods of analysis of continuous frames. Analysis of arches and close rings. Analysis of continuous frames by balancing angle changes. Index.

Note: In the first volume a study of buildings has been coordinated with the usual study of bridges, and, in accordance with the present importance of highway transportation, the study of bridges has been divided about equally between bridges for railroads and those for highways. Long mathematical formulas have been avoided. In the second volume, basic principles rather than special cases are emphasized. Thus, although the text treats suspension bridges, building frames, arches, etc., these structures are used mainly to illustrate the wide usefulness of virtual work, balancing moments, column analogy, and the other important tools of analysis.

HICKERSON, THOMAS FELIX

Statically indeterminate frameworks. Chapel Hill: The University of North Carolina Press, 1937. 205 p. illus. 28 cm. \$3.00. 3397

Contents: Part I, Members with constant moment of inertia: Preliminary considerations. Fixation factors and bending moments. Analysis of continuous beams and frames. Building frames—vertical loads, horizontal forces. Beam deflection. Secondary stresses. Part II, Members with variable moment of inertia: Bending moments and fixation factors. Arch frames. Appendixes: Miscellaneous tables. Bending and direct stress. Tall building frames subjected to wind forces—analysis by approximate methods. Miscellaneous formulas and tables of coefficients.

Note: The novel procedure is employed of applying the actual degree of fixation at the ends of restrained members to present formulas and tables of coefficients to aid in the determination of bending stresses in a variety of structures. New methods are introduced for calculating beam deflections and the secondary

stresses in riveted trusses. The book is a revised edition of the author's *Structural frameworks* and includes a more comprehensive treatment of statically indeterminate frameworks of steel and concrete.

HOOL, GEORGE ALBERT, AND W. S. KINNE, EDITORS

Steel and timber structures. Revised by R. R. Zippodt and D. M. Griffith. Second edition, revised and enlarged. New York: McGraw-Hill Book Company, Inc., 1942. 733 p. illus. 23 cm. \$6.00. 3398

Contents: Buildings. Roof trusses. Short span steel bridges. Timber bridges and trestles. Steel tanks. Chimneys. Structural steel detailing. Fabrication of structural steel. Steel erection. Estimating steelwork. Materials. Appendixes. Index.

Note: A collection of data to aid engineers, construction men, draftsmen, and designers in the design and erection of all types of steel and timber structures. Revised material has been introduced to cover changes that have been made in design or construction procedure since the first edition in 1924. New material has been added on the design of timber highway bridges, latest American Society for Testing Materials specifications pertaining to several basic products or materials have been incorporated, and other similar changes have been made.

HOOL, GEORGE ALBERT, AND W. S. KINNE, EDITORS

Stresses in framed structures, compiled by a staff of specialists. Revised by R. R. Zippodt and George C. Ernst. Second edition. New York: McGraw-Hill Book Company, Inc., 1942. 642 p. illus. 23 cm. \$5.00. 3399

Contents: General theory. Roof trusses. Bridge trusses. Lateral trusses and portal bracing. Deflection of trusses, redundant members and secondary stresses. Statically indeterminate frames. Wind stresses in high buildings. Rectangular tower structures. Appendixes. Index.

Note: A treatment for home-study, classroom instruction, and general reference, of the theory of stresses in all types of framed structures and its application in the various parts of the structures. Changes from the first edition (1923) have been made to incorporate recommendations of the American Society of Civil Engineers and the American Railway Engineering Society, relating to design for wind forces, steel railway bridges, train loadings, design of a roof truss, centrifugal and longitudinal forces acting on trains in motion, and wind forces acting on loaded and unloaded bridges. The section devoted to statically indeterminate frames has been modernized and expanded, and new charts added for the design of concrete beams and columns with variable moment of inertia.

HOOL, GEORGE ALBERT, AND W. S. KINNE, EDITORS

Structural members and connections, compiled by a staff of specialists; editors-in-chief, George A. Hool and W. S. Kinne. Revised by R. R. Zippodt and F. N. Menefee. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 639 p. illus. 23 cm. \$6.00. 3400

Contents: Section 1, General theory: Definitions, stress and deformation, simple and cantilever beams, deflection of beams, restrained and continuous beams, columns, bending and direct stress, unsymmetrical bending. Section 2, Design of steel and cast-iron members: Steel shapes and properties of sections, steel beams, multiple beam girders, metallic lintels, box girders, plate girders, bearing plates and bases for beams and girders, steel tension members, cast-iron columns, steel columns, column bases. Section 3, Splices and connections for steel members. Section 4, Design of wooden members: Wooden beams, wooden girders, wooden columns. Section 5, Splices and connections for wooden members. Section 6, Design of reinforced concrete members: Rectangular beams and one-way solid slabs, T-beams and ribbed one-way slabs, beams and slabs reinforced for compression, slabs supported upon four edges, flat slab floor panels, members subject to direct axial compression, members subject to direct

axial tension, members subject to bending and direct compression, footings. Appendixes: General notation. General properties of sections. Deflections of beams: elastic curve method, unit load method. Index.

Note: A text and reference book for students and practicing engineers, presenting treatment of the general theory pertaining to structural members, also their detailed design and the design of their connections with other members. Covers the design of steel and cast-iron members, splices and connections, and design of reinforced concrete members, in a practical treatment including a number of worked-out illustrative problems. In this edition considerable revision has been made to bring the treatment in line with advances in design or construction procedures and standards. New tabular data and formulae have also been added.

KIRKHAM, JOHN EDWARD

Structural engineering. Second edition. New York: McGraw-Hill Book Company, Inc., 1933. 759 p. illus. 23 cm. \$5.00. 3401

Contents: Preliminary. Structural drafting. Fundamental elements. Theoretical treatment of beams. Theoretical treatment of columns. Rivets, pins, rollers and shafting. Maximum reactions. Graphic statics. Influence lines. Descriptions of I-beams and plate girders. Design of simple railway bridges. Design of simple highway bridges. Skew bridges. Design of buildings.

Note: A self-explanatory manual of structural engineering for practical men. Nothing but elementary mathematics is presupposed.

MORRIS, CLYDE TUCKER

The design of simple steel structures. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1933. 279 p. illus. 23 cm. \$2.50. 3402

Contents: Part I, Calculation of stresses: Stresses due to quiet loads. Roof trusses. Bridge trusses—stresses from uniform loads. Bridge trusses. Stresses from concentrated wheel loads. Stresses from horizontal forces. Part II, Design of members: Members carrying direct stresses. Joints and connections. Beams and girders. Design of truss bridges. Highway bridges. Index.

Note: A treatment of both the calculation of stresses and the methods of design for simple steel structures. Illustrative problems are worked out in detail, and emphasis is given to the fundamental strength of materials in beams and girders because of its importance in designing and detailing of structures involving flexural considerations. The book represents a complete rewriting of the author's *Designing and detailing of simple steel structures*, third edition, New York, 1914.

MORRIS, CLYDE TUCKER, AND SAMUEL T. CARPENTER

Structural frameworks. New York: John Wiley & Sons, Inc., 1943. 272 p. illus. 22 cm. \$4.00. 3403

Contents: Loads. Fireproof floors. Beams and girders. Deflections. Columns. Rigid frames under vertical loading. Wind bracing. Asymmetry. Radio and transmission towers. Industrial buildings. Welded design. Column bases and foundations. Index.

Note: A clear explanation of some of the more intricate problems that arise in the design of buildings and structural frameworks. Some of the problems are encountered when preliminary analysis does not allow for sufficient interaction of the many members of the structural frame; others occur when the effects of deformations are not revealed in the analysis. Wherever possible the discussion is supplemented by detailed examples to show how the theory may be applied specifically. The authors indicate permissible simplifications in methods of calculation which are in accord with the elastic action of the structures and which give results of adequate accuracy.

PARKER, HARRY

Simplified design of roof trusses for architects and builders. New York: John Wiley & Sons, Inc., 1941. 195 p. illus. 20 cm. \$2.75. 3404

Contents: Principles of graphic statics: Concurrent forces. Non-concurrent forces. Centroids—center of gravity. Beams, shear and moment diagrams. Stresses in roof trusses: Types of roof trusses. Loads on roof trusses. Reactions. Stresses in roof trusses. Miscellaneous roof trusses. Maximum stresses. Design of roof trusses: Timber trusses. Steel trusses. Index.

Note: Provides a basic study of the principles and methods underlying the design of both timber and steel trusses, for those who require a knowledge of the essential principles and methods of designing the most common types of roof trusses. All necessary tables are included in the book.

PLUMMER, FRED LEROY

Fundamentals of indeterminate structures. New York: Pitman Publishing Corporation, 1944. 231 p. illus. 23 cm. \$4.00. 3405

Contents: Introduction. Deflections. Redundant structures. Three-moment equation. Fixed-and-conjugate-point method. Slope-deflection method. Moment-distribution method. Column-analogy method. Automatic-design method. Design of concrete building frames. Model analysis. Special problems. Properties of beams of variable section. Answers to problems. Index.

Note: The first three chapters treat the basic problems in the analysis of statically indeterminate structures. The remainder of the book discusses the basic and special methods of analysis now in general use. The author suggests some use of the book for engineering schools, but it is mainly for structural engineers.

PRIEST, H. MALCOLM

The practical design of welded steel structures. New York: American Welding Society, 1943. 153 p. illus. 20 cm. \$1.00. 3405a

Contents: Editorial note. Introduction. Welding processes. Welding rods and electrodes. Forms of joints. Gas cutting. Qualification and inspection. Codes and reports. Stress distributions and stress paths. Temperature effects. Design considerations. Symbols. Girders. Trusses. Columns. Beam connections. Continuous structures. Rigid frames. Fatigue. Conclusion. Bibliography.

Note: A consideration of welding practice in the jointing of girders, trusses, columns, and beam connections. A reprint in book form of an article in *The Welding Journal*, September, 1943, with additions from the author's *Engineering essentials for welders* which appeared in the April, 1942, issue of the same journal.

SHANLEY, FRANCIS R.

Basic structures. New York: John Wiley & Sons, Inc., 1944. 392 p. illus. 22 cm. \$4.50. 3406

Contents: Structural analysis methods. Forces and moments. Force transmission. Equilibrium and reactions. Stability, constraints, and redundancies. Behavior of materials under load (physical properties). Axially loaded members. Transverse forces. Truss analysis. Shear webs. Curved shear webs. Torsion. Bending—symmetrical. Unsymmetrical bending. Bending (special cases). Bending deflections. Combined bending and shear. Combined shear and torsion. Combined bending and axial loading. Combined stresses. Joints. References. Appendix. Answers to problems. Index.

Note: This textbook for students and practicing engineers deals with the basic principles of structural engineering, with special reference to aeronautics. The use of calculus and advanced mathematics has been avoided, and numerous practical problems and answers are given for each chapter. An appendix includes tables and diagrams relating to the properties of materials under various conditions of stress and strain. There are three pages of references.

SHEDD, THOMAS CLARK

Structural design in steel. New York: John Wiley & Sons, Inc., 1934. 560 p. illus. 23 cm. \$5.00. 3407

Contents: Introduction. Types of structures and structural framing. The design of beams and girders. Tension and compression members. Connections. Design of structural steel for buildings. Design of structural steel for bridges. Structural welding. Appendices: General specifications for the design of steel railway bridges. General specifications for the design of steel highway bridges. A.I.S.C. specification for the design, fabrication, and erection of structural steel for buildings. Index.

Note: Among the many noteworthy features in this book may be listed the interpolation of numerous sets of design calculations illustrating the application of the principles involved. These sets of design calculations are presented as the brief, concisely arranged calculations of the practicing designer. There are also nine folding plates. The main portion of the book is devoted to a detailed discussion of the three primary structural forms and

their connections. This section of the book is profusely illustrated, containing 18 of the 24 sets of design calculations. Other chapters cover ordinary building and bridge frames, the design of structures as a whole, and fusion welding.

SHEDD, THOMAS CLARK, AND JAMISON VAWTER

Theory of simple structures. Second edition. New York: John Wiley & Sons, Inc., 1941. 505 p. illus. 23 cm. \$3.75. 3408

Contents: Part I, Theory of simple structures: Introduction. Reactions. Shears and moments—fixed loads. Reactions, shears and moments—moving loads. Common framed structures. Stresses in trussed structures—fixed loads. Graphic statics. Stresses in trussed structures—moving loads. Effect of lateral and longitudinal forces. Part II, Introduction to statically indeterminate structures: Beams and frames. Trussed structures. Properties of a triangle and a parabola. Index.

Note: A simple but thorough discussion of the application of the fundamental laws of statics in structural analysis, as well as a treatment of the basic principles of the analysis of statically indeterminate structures. This latter is the feature of the second edition, and it is presented in the two chapters of Part II. Emphasis in this book is placed on the changes in shape of the loaded structure, and the calculation of the magnitude of these changes by the geometry of small angle changes along the axes of the members.

SHEIRY, EDWARD SLATER

Elements of structural engineering. Second edition. Scranton, Pa.: International Textbook Company, 1944. 508 p. illus. 21 cm. (International texts in civil engineering; C. E. O'Rourke, consulting editor) \$4.25. 3409

Contents: Introduction. Load on structures. Reactions, shears, and moments—fixed loads. Bar stresses—fixed loads. Stress analysis under moving loads. The design of members. The design of connections. Reinforced concrete—general theory. Reinforced concrete building design. Deflection. Analysis of indeterminate structures. Tables. Appendix. Index.

Note: Planned primarily to serve in college courses for students not specializing in structural engineering, this work presents in a single volume fundamental principles used in stress analysis and design of modern timber, steel, and reinforced-concrete structures. In this edition the treatment of timber structures is based on the 1943 timber connector code of the War Production Board.

SIEMON, KARL OTTO GUSTAV

Manual for the design of ferrous and non-ferrous pressure vessels and tanks. Third edition. Westfield, N.J.: Karl Siemon, 1942. 284 p. illus. 21 cm. \$3.00. 3409a

Contents: Part I, Materials of construction: Selection of materials. Iron and steel. Copper, brasses, and bronzes. Nickel and nickel alloys. Part II, Design: Cylindrical vessels under internal pressure. Cylindrical vessels under external pressure. Heat stresses in shells. Shell thickness of open tanks. Dished heads and spheres. Flat heads and cover plates. Reinforcement of openings. Flange design. Riveted joints. Fusion-welded joints. Copper vessels. Everdur vessels. Aluminum vessels. Monel and nickel vessels. Stainless steel vessels. Vessels of alloy-clad steel. Shell stresses due to dead and wind load. Supports. Appendix. Index.

Note: A reference work for mechanical engineers and others engaged in the design of pressure equipment, which attempts to give for each of the different elements entering into pressure design an analysis of the problems involved and a brief discussion of the methods suggested for the calculation of the stresses. Numerous references to the original papers have been given to serve as a guide for further investigation of special problems. The third edition contains minor revisions to conform to revisions of the boiler code of the American Society of Mechanical Engineers and new material on design of hoops, vessels under external pressure, and dished heads.

SPOFFORD, CHARLES MILTON

The theory of continuous structures and arches. New York: McGraw-Hill Book Company, Inc., 1937. 267 p. illus. 23 cm. \$3.50. 3410

Contents: Continuous structures. Arches. General. Distribution of normal stresses on cross sections of straight and curved bars. Deflection of a curved bar. Two-hinged parabolic-arch ribs. Two-hinged segmental-arch ribs. Deflection of two-hinged and three-hinged arch ribs. Fixed-ended arch. Rigid frames. Appendix. Index.

Note: An exhaustive treatment of the theory of continuous structures, including girders and trusses, and of the various types of arch construction, including the so-called rigid frame bridge. The theories are illustrated by many numerical examples showing their application to numerous practical problems based upon the author's extensive professional and teaching experience. Bibliographies accompany most of the chapters.

SPOFFORD, CHARLES MILTON

The theory of structures. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1939. 615 p. illus. 23 cm. \$6.00. 3411

Contents: Outer and inner forces. Laws of statics, reactions, shears and moments. Influence lines. Concentrated load systems. Beam design. Plate-girder design. Simple trusses. Bridge trusses with secondary web systems, including the Baltimore and Petit trusses. Trusses with multiple web systems, lateral and portal bracing, transverse bents, viaduct towers. Cantilever bridges. Three-hinged arches. Design of columns and tension members. Pin and riveted-truss joints. Graphical statics. Deflection slope and camber. Statically indeterminate girders and trusses. Space framework. Movable bridges. Masonry dams. Earth pressure. Masonry arches with fixed ends. Wind stresses in framed bents of high buildings. Index.

Note: Like previous editions of this well-known text, the present revision covers in a thorough and logical manner the fundamental theories upon which the design of engineering structures is based, and illustrates their application by numerous examples. The fourth edition includes developments in theory and practice of structural engineering up to 1939, such as revised specifications for highway and railway bridges and modifications to building laws of New York City and elsewhere.

SPURR, HENRY VOSE

Wind bracing; the importance of rigidity in high towers. New York: McGraw-Hill Book Company, Inc., 1930. 132 p. illus. 24 cm. \$3.00. 3412

Contents: Preface. The general aspects of the problem, with fundamental deductions. Deflection due to the change in length of the columns under axial wind loads; a "yardstick" as a proposed basis for design. The web system; deflection of different types of bracing. Deflection, with special reference to high towers. Application of the fundamental principles illustrated in the design of a 120-story tower (outlined in preliminary stages only). General discussion of principles of design. Outline specification for the wind analysis of high towers. General characteristics of vibration on high towers in gusty winds. Appendix.

Note: The author first describes what he considers to be the essential features of wind bracing, then gives a more technical discussion of fundamental principles of design and their application. The aim is elimination of confusion and inconsistency in design detail for high slender towers. Written for architects, engineers, and builders.

SUTHERLAND, HALE, AND HARRY LAKE BOWMAN

Structural design. New York: John Wiley & Sons, Inc., 1938. 402 p. illus. 23 cm. \$4.50. 3413

Contents: Beams. Columns. Bolts and rivets. The plate girder. Rolled beam and plate girder deck railroad bridges. Half-through plate girder railroad bridges. Through riveted truss highway bridge. Pin-connected bridges. Mill buildings and roof trusses. Office building frame. Structural welding. Timber roof truss. Appendix. Folding plates. Index.

Note: The authors are concerned in this book with basic theory rather than with current practice. Deliberately a number of different specifications and different sets of allowable stresses have been used. Throughout the book attention is directed to the fundamental principles of mechanics involved in the several designs given as examples. An unusual feature is the number of different design specifications reproduced in part in the appendix.

SUTHERLAND, HALE, AND HARRY LAKE BOWMAN

Structural theory. Third edition. New York: John Wiley & Sons, Inc., 1942. 368 p. illus. 23 cm. \$3.75. 3414

Contents: Reactions and stresses. Graphic statics. Roof trusses. Truss and girder bridges. Long-span bridges. Lateral bracing and portals. Slope and deflection. Rigid frames. Wind stresses in tall buildings. Indeterminate trusses. Secondary stresses. Space frameworks. Index.

Note: Introducing basic conceptions and principles of structural theory relating to trusses, rigid frames, and space frameworks, this third edition places considerable emphasis on graphic aids to problem solutions. The book now contains recent theory regarding graphic statics, the conjugate beam method for slopes and deflections, the bar chain method for truss deflections, how to use the Williot-Mohr diagram for stresses in statically indeterminate trusses, the method of moment distribution, and the method of the column analogy.

TIMOSHENKO, STEPHEN

Theory of elastic stability. New York: McGraw-Hill Book Company, Inc., 1936. 518 p. illus. 23 cm. (Engineering Societies monographs; H. W. Craver, consulting editor) \$6.00. 3414a

Contents: Bending of prismatic bars under the simultaneous action of axial and lateral loads; Buckling of centrally compressed bars. Experiments and design formulas. Buckling of compressed rings and curved bars. Lateral buckling of beams. Bending of thin plates. Buckling of thin plates. Bending of thin shells. Buckling of shells.

Note: Written for designers of metallic structures such as bridges, ships, airplanes, etc., and also for use in colleges in courses of theory of structures and design of airplanes. Gives a complete discussion of such problems as buckling of struts, compressed members of trusses, buckling of curved bars, lateral buckling of I-beams, buckling of plates, webs of plate girders and of thin shells. In all cases not only is the theory developed, but also the application of this theory in design is shown and experiments verifying the theory are described.

TIMOSHENKO, STEPHEN

Theory of elasticity. New York: McGraw-Hill Book Company, Inc., 1934. 416 p. illus. 23 cm. (Engineering Societies monographs) \$5.00. 3414b

Contents: Introduction. Plane stress and plane strain. Two-dimensional problems in rectangular coordinates. Two-dimensional problems in polar coordinates. Strain-energy methods. The solution of two-dimensional problems by means of the complex variable. Analysis of stress and strain in three dimensions. General theorems. Elementary problems of elasticity in three dimensions. Torsion. Bending of prismatical bars. Axially symmetrical stress distribution in a solid of revolution. The propagation of waves in elastic solid mediums.

Note: This book covers its subject particularly in relation to the calculation of stresses in engineering structures and machine parts. It gives the necessary fundamental knowledge of the theory of elasticity, together with the solution of various problems of practical importance.

TIMOSHENKO, STEPHEN

Theory of plates and shells. New York: McGraw-Hill Book Company, Inc., 1940. 492 p. illus. 23 cm. (Engineering Societies monographs; H. W. Craver, consulting editor) \$6.00. 3414c

Contents: Bending of long rectangular plates to a cylindrical surface. Pure bending of plates. Symmetrical bending of circular plates. Small deflections of laterally loaded plates. Simply supported rectangular plates. Rectangular plates with various edge conditions. Plates of various shapes. Bending of plates under the combined action of lateral loads and forces in the middle plane of the plates. Large deflections of plates. Deformation of shells without bending. General theory of cylindrical shells. Shells

having the form of a surface of revolution and loaded symmetrically with respect to their axis.

Note: The treatment covers the general theory of bending of plates under lateral load with applications to circular and rectangular plates and with numerous tables simplifying the calculation of deflections and stresses in plates; combined bending and tension or compression of plates with applications to thin plates; theory of bending of shells with application to cylindrical and spherical shells.

UNITED STATES. WORK PROJECTS ADMINISTRATION. MATHEMATICAL TABLES PROJECT

Tables of the moment of inertia and section modulus of ordinary angles, channels, and bulb angles with certain plate combinations. Prepared by the Federal Works Agency, Work Projects Administration for the City of New York, as a report of Official Project No. 165-2-97-22, Mathematical Tables Project. Arnold N. Lowan, technical director. Conducted under the sponsorship of the National Bureau of Standards, Washington, D.C.: National Bureau of Standards, 1941. 197 p. 27 cm. U.S., \$2.00; foreign countries, \$2.50. 3415

Contents: Introduction. Moment of inertia and section modulus of ordinary angles, heel-to-plate. Moment of inertia and section modulus of ordinary angles, toe-to-plate. Moment of inertia and section modulus of channels. Moment of inertia and section modulus of bulb angles. Properties of plates. Properties of ordinary angles. Properties of channels. Properties of bulb angles.

Note: A collection of original tables of value to structural and mechanical engineers and research workers in structural steel.

URQUHART, LEONARD CHURCH, AND CHARLES EDWARD O'ROURKE

Design of steel structures. New York: McGraw-Hill Book Company, Inc., 1930. 448 p. illus. 24 cm. \$5.00. 3416

Contents: Manufacture and fabrication of structural steel elementary members. Riveted joints. Roof trusses. Plate girder bridges. Design of a through plate girder railroad bridge. Design of a deck plate girder railroad bridge. Bridge trusses. Design of a riveted single-track through truss railroad bridge. Design of a pin-connected, single-track, through truss railroad bridge. Design of a riveted through truss highway bridge. Welding. Appendixes: Standard specifications for structural steel for buildings, American Institute of Steel Construction. General specifications for steel railway bridges, American Railway Engineering Association. Specifications for steel highway bridges. Specifications for arc welding.

Note: A clear treatment of the design of steel structures. Beginning with an introductory chapter on the manufacturing and fabrication of steel, the book takes up the design of simple members and various representative structural forms, illustrating each stage of the work with finished designs and complete detailing. This book is designed to be studied after the authors' *Stresses in simple structures*, second edition, New York: McGraw-Hill Book Company, Inc., 1932, \$3.50.

URQUHART, LEONARD CHURCH, AND CHARLES EDWARD O'ROURKE

Elementary structural engineering. New York: McGraw-Hill Book Company, Inc., 1941. 348 p. illus. 23 cm. \$3.00. 3417

Contents: Structural mechanics. Structural materials. Loads on structures. Homogeneous beams. Stresses in trusses. Design of tension and compression members. Connections and splices. Plate girders. Deflection. Reinforced-concrete beams and slabs. Reinforced-concrete columns. Footings. Retaining walls.

Note: Covers concisely the fundamental principles of structural theory and design in steel, timber, and concrete, and discusses the essential basic principles of mechanics and properties of structural materials. For engineering school courses.

VAN DEN BROEK, JOHN ABRAHAM

Elastic energy theory. Second edition. New York: John Wiley and Sons, Inc., 1942. 298 p. illus. 23 cm. \$4.50. 3418

Contents: Statically determinate versus statically indeterminate structures. Elastic energy. Analysis of frames. Redundant frames. Analysis of beams. Redundant beams. Combined bending and direct stress. Combined bending and torsion. Elastic energy and deformations due to shear. Resilience. Elastic curves as influence lines. Theory of least work. Columns. Estimate of elastic energy theory. Appendixes. Problems. Index.

Note: A study of the elastic energy method to determine the distribution of stresses in elastic materials subject to deformation. The book avoids the historic approach to the subject except for the purpose of comparison, and simplifies the treatment of the subject. Statically indeterminate problems usually found in the design of bridges and buildings can be solved by the methods presented in the book. In addition, there are methods and problems in the solution of springs, large pipes, and airship and airplane frames. The most important revision in this second edition is that of the simplification of the original notation.

WILLIAMS, CLIFFORD DAVID

Analysis of statically indeterminate structures. Scranton, Pa.: International Textbook Company, 1943. 265 p. illus. 21 cm. (International texts in civil engineering; C. E. O'Rourke, consulting editor) \$3.50. 3419

Contents: Slope and deflection of beams. Slope and deflection of trusses. Beams. Single-span frames and arches. Slope deflection. Moment distribution. Continuous trusses. Secondary stresses in trusses. Columns. Index.

Note: Organized to present the common methods of analysis in simple form, based on fundamental principles of applied mechanics. Simplicity in approach and carefully chosen problems provide an oriented course of study, to develop an analytical approach to special studies in the field without difficulty. Relations between the common methods of analysis are kept in the foreground; each method is developed from the same basic principles of mechanics and expanded to general cases.

Strains and Stresses

FROCHT, MAX MARK

Photoelasticity. New York: John Wiley & Sons, Inc., 1941. Volume I. 411 p. illus. (part col.) 23 cm. \$6.00. 3421

Contents: Stresses and strains in two dimensions. Differential equations of equilibrium. Preliminary optics. Polarized light. Double refraction. Devices used for the polarization of light. Polariscopes. The stress-optic law and the stress pattern. Isoclinics and stress trajectories. Principal stresses across sections of symmetry by the slope equilibrium (rapid) method. Shear and normal stresses across straight lines (shear difference method). Principal stresses by graphical integration. Materials and models. Diphasic molecular theory of plastics and its relation to the annealing of bakelite and to the frozen stress pattern. Technique of stress patterns. Features of equipment. Photography. Name index. Subject index.

Note: This book deals with the purely optical methods of photoelastic analysis, the laboratory technique involved, the various methods of interpreting the observations and computing the stresses. It contains the essential material for a thorough understanding of the theoretical principles and experimental procedures for the complete exploration of all two-dimensional stress systems by photoelasticity. The theory and illustrations of frozen stress patterns are given, and their application to three-dimensional problems is indicated. Much of the material appears here in book form for the first time. There is, for example, an exposition of the shear difference method for the separation of normal stresses, of the slope equilibrium method for principal stresses, and new material on stress trajectories. The exposition is supplemented by numerous examples and is illustrated with line drawings and a collection of unusual fringe photographs. The book is intended for use by beginners in the subject. The second volume is not yet available.

MARIN, JOSEPH

Working stresses. New Brunswick, New Jersey: Rutgers University Press, 1940. 41 p. illus. 21 cm. (Rutgers University studies in engineering. No. 1) \$1.00. 3422

Note: The selection of the correct working stress value for the design of a structure or a machine is one of the major considerations in obtaining a safe and economical construction. Many factors are involved in deciding the value of this stress: the reliability of the material, the exactness with which the loads are known and whether such loads are steady or variable, the accuracy of the theory used for computing the stress in the machine or structural part to be designed. The effect of a combined state of stress on the failure of a material will in some cases influence greatly the working stress, and it is with a consideration of this final factor that this concise work is mainly concerned. The failure of materials subjected to static, fatigue and creep loadings in the case of combined stresses is discussed; and, with this as a basis, the working stresses under such loadings can be considered.

PARCEL, JOHN IRA, AND GEORGE ALFRED MANEY

An elementary treatise on statically indeterminate stresses. Second edition. New York: John Wiley & Sons, Inc., 1936. 432 p. illus. 23 cm. \$5.00. 3423

Contents: Introduction. Deflections. General theory of statically indeterminate stresses. Special methods of attack. Continuous girders. Rigid frames and secondary stresses. The elastic arch. Suspension systems. General discussion of statically indeterminate construction. Historical review. Index.

Note: Presents the fundamental methods of attack on the problem of indeterminate stresses, and illustrates these methods by application to some of the more common types of indeterminate stresses. Additional material is given in this edition on the subject of slope-deflection analysis, on the cross moment distribution method, on three- and four-span continuous bridges, on rigid frames, and on suspension systems.

ROARK, RAYMOND JEFFERSON

Formulas for stress and strain. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 366 p. illus. 23 cm. (Product development series) \$4.00. 3424

Contents (abridged): Definitions and symbols. Facts, principles, methods. Formulas and examples. Index. List of tables.

Note: A reference handbook on strength of materials for students and practicing engineers. Presents in convenient form formulas for stress, strain, and strength likely to prove useful to the designing engineer—including those required in the more precise and accurate methods of stress analysis imposed by modern engineering trends. The second edition contains new data on the three-movement equation for beams and beam columns, slotted and curved beams, and for other structural members, plus new material on fatigue and stress concentration. Scattered throughout the text are such tables as properties of sections, formulas for combined stresses, form factors for beams, formulas for torsional deformation and stress, formulas for elastic stability of bars and rings, factors of stress concentration of elastic stress (K), for repeated stress (K_f), and for rupture (K_r), and properties of materials.

URQUHART, LEONARD CHURCH, AND CHARLES EDWARD O'ROURKE

Stresses in simple structures. Second edition. New York: McGraw-Hill Book Company, Inc., 1932. 339 p. illus. 23 cm. \$3.50. 3425

Contents: Definitions and principles. Fundamental principles of graphic statics. Roof trusses. Stresses in framed bents. Bridge trusses under dead load. Stresses in trusses due to uniform live loads. Concentrated moving loads on beams and girders. Concentrated moving loads on trusses. Lateral forces on bridge trusses. Influence lines. Three-hinged arches. Deflection.

Note: A text for engineering school courses. While the relation between graphical and analytical methods is emphasized, the methods have been separated so that each may be taken

up separately. Both methods are illustrated by actual numerical problems.

Building

ACKERMAN, ADOLPH JOHN, AND CHARLES H. LOCHER

Construction planning and plant. New York: McGraw-Hill Book Company, Inc., 1940. 381 p. illus. 23 cm. \$4.00. 3426

Contents (abridged): General problems. Preliminary planning. Preparatory work. Construction stages. Programing the job. Selection of equipment and small tools. Measuring equipment performance. File-driving and extracting equipment. Pumping and unwatering equipment. Excavating equipment. Transporting equipment. Compressed-air systems. Foundations. Cutoffs, pile foundations, and caissons. Cement handling. Concrete placing and forms. Hoisting and conveying equipment. Canals, tunnels and penstocks. Electric power and equipment. Human relations.

Note: A manual for contractors, engineers, and all others interested in the planning, control, and execution of large construction jobs, with practical methods and details from actual experience. Shows how to plan and manage jobs and gives descriptions, comparisons, and data for construction machinery, particularly heavy types, to aid in efficient planning and operation of construction plants. Based on a series of articles that appeared in *Construction methods*.

BURBANK, NELSON L.

Carpentry and joinery work. Fourth edition. New York: Simmons-Boardman Publishing Corporation, 1943. 248 p. illus. 28 cm. U.S. and Canada, \$4.00; other countries, \$4.25. 3427

Contents: Tools and equipment. Tool boxes. House plans. Excavations. Foundation forms. Foundations. Sills. Girders. Floor joists. Sub-flooring. Outside framed walls. Inside framed walls. Plumbing framed work. Sheathing walls. Ceiling joists. Roof framing. Roof sheathing. Cornices. Roofing. Porch and bay framing. Exterior wall covering. Interior wall covering. Stairs. Interior trim. Windows. Doors. Hardware. Closets, shelving, built-in equipment. Finished flooring. Garage doors. Insulation. Finishing. Topical outline. Glossary. Index.

Note: An intermediate text on house carpentry with related studies of carpentry mathematics, architectural drawing, blueprint reading, business English, applied science, and industrial civics. A complete material list and set of working blueprints of a model house help the student learn estimating. Suitable for self-instruction and for reference, and useful to farmers and others who have to do rough carpentry and repair work.

BURBANK, NELSON L.

House construction details. Second edition. New York: Simmons-Boardman Publishing Corporation, 1942. 314 p. illus. 28 cm. U.S. and Canada, \$3.00; other countries, \$4.25. 3428

Contents: Floor plans, sets of house plans. Excavations, foundation forms, foundations. Sills, girders, joists, sub-flooring. Outside walls. Inside walls, wall sheathing, ceiling joists. Roof construction, bay construction, roofing. Cornices and porches. Exterior wall construction. Interior wall coverings, interior trim. Stair construction. Windows. Doors. Hardware. Closets, shelves, built-in equipment. Finished flooring. Chimneys and fireplaces. Scaffolds. Garages. Wiring for modern homes. Insulation, sound proofing. Gates, garden furniture. Camps, cabins, cottages. Farm buildings. Painting and finishing. Modern homes. Modern building materials. Heating, air conditioning. Pre-fabrication. Index.

Note: Architectural details for builders wishing to make alterations in a set of stock blueprint drawings of a house. Scale drawings show standard methods of construction and photographs show the completed work. There are more than 1,200 drawings with just enough text to explain general principles. Several systems of pre-fabricated construction are included.

BURT, HENRY JACKSON

Steel construction; a text and reference book on the design of steel framework for buildings;

revised by C. H. Sandberg. Chicago: American Technical Society, 1939. 438 p. illus. 22 cm. \$3.50. 3429

Contents: Manufacture of steel. Specifications. Structural sections. Fabrication. Welding. Beams. Built-up girders. Columns. Industrial buildings. Multistory buildings. Illustrative design of a school building. Protection of steel. Appendix. Index.

Note: A practical text and reference book on the design of structural steel framework for buildings, intended for students and design engineers. Presents the necessary data in accessible form for the complete design of steel work for business buildings. No knowledge of mechanics or of mathematics higher than simple algebra is required. The revised edition includes new illustrations and additional chapters on welding and industrial buildings to cover the changes in methods from 1931 to 1938.

CLOSE, PAUL DUNHAM

Building insulation; a treatise on the principles and application of heat and sound insulation for buildings. Chicago: American Technical Society, 1941. 328 p. illus. 21 cm. \$3.00. 3430

Contents: Introduction. Thermal building insulations. Methods of application. Fundamentals of heat transfer through building materials. Transmission coefficients and tables. Calculating heat losses. Effect of building insulation on heating plant size. Fuel saving. Economics of insulation. Insulation efficiencies. Expansion of roofs. Condensation. Insulation and comfort. Pipe and duct insulation. Sound insulation. Machinery insulation. Architectural acoustics and noise quieting. Questions pertaining to building insulation. Index.

Note: Intended as a reference and instruction book for architects, manufacturers, insulating salesmen and dealers, consumers, and for use in college engineering courses. The author has attempted to avoid discrimination in a controversial field, while presenting factual information for specific situations. The chapter on thermal building insulation includes a list of trade names, descriptions, and manufacturers of commercial insulating materials. Questions and problems precede the index.

COLLING, R. C., EDITOR

Modern building inspection; "The building inspector's handbook," with text by Clyde N. Dirham, Harold P. Huls, George N. Thompson, Walter Putnam, Harold C. Whittlesey, and P. M. Muchmore; technical advisor, Charles D. Wailes, Jr. Los Angeles, Calif.: R. C. Colling and Associates, 1942. 404 p. illus. (part col.) 23 cm. \$5.00. 3430a

Contents: Part I, The building inspector and his job: The building code. Building department organization. Building department forms. Building department fees. Plan checking. Field inspection. Public relations of the building inspector. Outside helps for the building inspector. Building department reports to city council. Building failures. Part II, Structural engineering for the building inspector: Structural requirements. Resistance to wind and earthquake forces. Foundations and retaining walls. Roof construction. Part III, Legal problems in connection with building code enforcement, by Harold P. Huls: Legal responsibility of the building inspector. Zoning in its relation to building department operation. Condemnation of substandard structures. Addenda: Selected ordinances, basic standards and procedures. Selected annotated bibliographies. Directory. Index.

Note: A handbook and guide to uniform building inspection practice, presenting a working knowledge of the technical problems involved from the viewpoint of the practical building inspector, together with an outline of the business routine of carrying on the duties of the profession. The emphasis throughout is upon sound construction requirements and the need for inspectors to detect violations and to enforce building regulations. The annotated bibliography contains about 450 titles.

DALZELL, JAMES RALPH, AND GILBERT TOWNSEND

How to remodel a house. Chicago: American Technical Society, 1942. 528 p. illus. (part col.) 22 cm. \$4.75. 3431

Contents: Types of house architecture. How to read architectural plans. Specifications. Fundamentals of remodeling. How to select architectural types. Architectural drawings. Structural details. Stairs. Insulation. Selection of materials. Bathrooms. Remodeling kitchens. Heating and air-conditioning. Electric lighting and wiring. Remodeling rooms. Floor plans and elevations for remodeling. Illustrative example. Index. Blueprints.

Note: A book intended as a guide through every step of reasoning, planning, and designing, with regard to individual rooms or entire floors and exteriors. Studies are given in the evaluation of insulation, air-conditioning and heating plants, plumbing, electric wiring. Detailed drawings and many photographs are used. The index is extensive. Questions and answers follow each chapter.

FREEMAN, JOHN RIPLEY

Earthquake damage and earthquake insurance; studies of a rational basis for earthquake insurance, also studies of engineering data for earthquake-resisting construction. New York: McGraw-Hill Book Company, Inc., 1932. 904 p. illus. 24 cm. \$7.00. 3431a

Contents (abridged): Earthquake motion and causes of earthquakes. The ordinary measure of earthquake violence. Frequency and violence of earthquakes in various parts of the United States and Canada. The narrow zone of destruction by earthquakes. Structural lessons and loss ratios from the San Francisco, Charleston, and other American earthquakes. Relation of structural safety to local stability of ground. Lessons about earthquake-resisting buildings from the Japanese earthquake of 1923. Prediction of time, place of occurrence, and damage of future earthquakes. Recent rates of premium for earthquake insurance. Textbooks on earthquake-resisting structural design. Researches with shaking-tables. The motion of the ground in an earthquake. The design of earthquake-resisting buildings. Data from seismograms. Suggestions for a program of earthquake research. Index.

Note: An exhaustive collection of facts on earthquakes and earthquake damage, addressed to structural engineers, insurance executives, property owners, and practical seismologists. The work presents factual details supported by a large number of photographs showing the successful resistance of hundreds of ordinary buildings, and offers proof that earthquake-resisting buildings can be built at reasonably small increase of cost over unsafe structures. There are several detailed sections on the mathematical and physical theory of earthquake waves, plus a considerable amount of statistical data. The author had more than a half-century of practical experience in this field.

GAY, CHARLES MERRICK, AND HARRY PARKER

Materials and methods of architectural construction. Second edition. New York: John Wiley & Sons, Inc., 1943. 636 p. illus. 24 cm. \$6.00. 3432

Contents: Part I, Materials of construction: General considerations. Lime, gypsum and cement. Concrete. Wood. Brick. Terra cotta, gypsum and concrete blocks and cast stone. Stone. Iron and steel and non-ferrous metals. Floor and roof systems and fire-proofing of steel. Finished flooring. Roofing materials, roof drainage and skylights. Plaster, lath, furring and stucco. Doors and windows. Exterior and interior trim. Paint, glass and glazing. Part II, Methods of construction: Mechanics of materials, brick and stone construction. Heavy timber construction. Light wood framing. Steel construction. Roof trusses. Reinforced concrete. Stairs. Foundations. Piling, shoring and underpinning. Excavation and waterproofing. Index.

Note: Here are presented discussions of such subjects as foundations, floor and roof construction, architectural terra cotta, welded joints, plastics, pressed wood, structural glass, and metal timber connectors. In this edition sections on structural steel design and steel roof trusses have been completely rewritten. Likewise the sections on concrete and reinforced concrete design and light and heavy wood framing have been rewritten to correspond with the most recent recommendations and tables of the Joint Committee on Concrete and Reinforced Concrete and the National Lumber Manufacturers' Association. Wherever necessary, illustrations and tables have been modernized.

GRAF, DON

Data sheets. New York: Reinhold Publishing Corporation, 1943. 779 p. illus. 18 cm. \$5.00. 3433

Contents: Materials. Structural design. Mathematics. Planning. Mechanical. Construction details. Draftsmanship. Furnishings.

Note: A reference work for architects and builders consisting of detail sketches, notes, and data on a variety of architectural subjects. The book contains the *Data sheets* which appeared in the magazine *Pencil points* from 1932 to 1942, plus about 300 additional sheets. Information on manufactured products is included for basic guidance.

HANSEN, HOWARD JAMES

Modern timber design. New York: John Wiley & Sons, Inc., 1943. 232 p. illus. 22 cm. \$3.00. 3434

Contents: Characteristics and properties of wood. Working stresses. Fastenings. Beams and columns. Wood trusses. Timber decks and bridges. Glued laminated construction. Plywood. Decay, wood-destroying organisms, and preservatives. Appendixes. Index.

Note: This brief book gives the reader the necessary information regarding structural timber, so that he may select and use the proper species with confidence. It gives the mechanical properties of the various species, the factors affecting their structure, their assigned working stresses, and the characteristics which make their use in design different from other structural materials. With these data as a background, the book then progresses to a consideration of modern timber design methods, with a number of examples and formulas for use in design. The design of indeterminate structures is not treated. Particular attention should be directed to the treatment of the design of all types of joints, of glued laminated members, and of plywood; as well as to the discussion, in Appendix A, of suggested working stresses and design procedure.

HUNTINGTON, WHITNEY CLARK

Building construction; materials and types of construction. Second edition. New York: John Wiley & Sons, Inc., 1941. 674 p. illus. 23 cm. \$6.00. 3435

Contents: Introduction. Building materials. Foundations. Masonry construction. The structural elements. Wood construction. Steel construction. Reinforced concrete construction. Floor construction, floor surfaces, and wall coverings. Roof construction and roofing materials. Plaster and stucco. Heat insulation and acoustics. Doors and door frames. Windows. Stairs. Paints and other protective coverings. Index.

Note: This book deals with the materials and types of construction used for the various parts of buildings, but not with the structural design except in its qualitative aspects. This second edition devotes particular attention to recent developments in the knowledge of the behavior of soils supporting foundations; in the types of foundations; in the construction of brick cavity walls; in the use of modern connectors and glued-laminated construction for wood trusses; in flame cutting and the welding of steel, particularly in connection with steel arches and rigid frames; in the protection of wood construction from termites. Newer materials, such as plywood and fiber boards, glass blocks, structural-clay facing tile, structural steel piles, and asphalt flooring tile, have been given consideration.

INTERNATIONAL CORRESPONDENCE SCHOOLS, SCRANTON, PA.

The building trades handbook, a convenient reference book on building construction. Scranton, Pa.: International Textbook Company, 1942. 366 p. illus. 14 cm. \$1.00. 3436

Contents: Mathematics. Geometrical drawing. Structural design. Strength of materials. Masonry construction. Reinforced concrete. Details of buildings. Plastering. Carpentry and millwork. Steel square. Roofing. Estimating. Elements of architectural design. Index.

Note: A handbook for persons who have pursued self-study courses in masonry, carpentry, structural design, or building construction. The editors have compressed into a pocket-book format the most fundamental data on each of these subjects, but no topic is treated in detail. The copyright date of the current edition, described as the sixth, indicates that new matter was added in 1942. Earlier editions had the title *Building trades pocket-book*.

KETCHUM, MILO SMITH

The design of steel mill buildings and the calculation of stresses in framed structures. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1932. 632 p. illus. 23 cm. \$6.00. 3436a

Contents (abridged): Stresses in framed structures: Graphic statics. Stresses in framed structures. Stresses in simple roof trusses. Simple beam. Moving loads on beams. Stresses in highway bridge trusses. Influence diagrams. Stresses in railway bridge trusses. Stresses in portals. Stresses in a transverse bent. Stresses in three-hinged arch. Stresses in pins, combined and eccentric stresses. Problems in the calculation of stresses in framed structures. Deflections of structures and stresses in statically indeterminate structures: Area moments and curved influence lines. Deflection of framed structures. Stresses in statically indeterminate structures. Stresses in stiff frames by area moments. Stresses in stiff frames by slope deflections. Stresses in stiff frames by moment distribution. Secondary stresses. Stresses in a two-hinged arch. Stresses in a statically indeterminate head frame. Problems in the calculation of stresses in statically indeterminate structures, camber, etc. Design of steel mill buildings: General design. Loads. Framework. Examples of industrial buildings. Data for design of framework. Corrugated steel. Roof coverings. Side walls. Foundations. Floors. Windows, skylights and ventilators. Doors. Paints and painting. Design of a steel roof truss. Design of beams and plate girders. Design of a steel mill building. Erection of steel mill buildings. Estimate of weight and cost of steel mill buildings. Appendix: General specifications for steel frame buildings.

Note: A textbook in structural engineering and reference book for engineers, with algebraic and graphic methods of calculating stresses fully described and illustrated. The appendix consists of a complete specification for steel frame mill buildings. The book has been rewritten and enlarged in this fifth edition.

KIDDER, FRANK EUGENE, AND HARRY PARKER, EDITORS

Kidder-Parker architects' and builders' handbook; data for architects, structural engineers, contractors, and draughtsmen. Compiled by a staff of specialists and Harry Parker, editor-in-chief. Eighteenth edition, enlarged. New York: John Wiley & Sons, Inc., 1931. 2315 p. illus. 18 cm. \$8.00. 3437

Contents (abridged): Part I, Practical arithmetic, geometry and trigonometry. Part II, Strength of materials and stability of structures: Explanation of terms used in architectural engineering. Foundations. Masonry walls, footings for light buildings. Cements and concretes. Retaining-walls, breast-walls and vault-walls. Strength of bricks, stone, mass concrete and masonry. Forces and moments. Stability of piers and buttresses. Stability of masonry arches. Reactions and bending moments for beams. Properties of structural shapes. Resistance to tension. Resistance to shear. Bearing-plates and bases for columns. Strength of columns. Strength of steel beams and beam girders. Strength of built-up, flitched and trussed wooden girders. Stiffness and deflection of simple and cantilever beams. Strength and stiffness of restrained, fixed and continuous beams. Riveted steel plate. Wood framing. Wooden mill and warehouse-construction. Fire-proofing. Reinforced-concrete construction. Types of roof trusses. Stresses in roof trusses. Design and construction of roof trusses. Elevator service in buildings. Heating and ventilating. Chimneys. Hydraulics, plumbing and drainage. Illumination.

Note: A standard reference book for architects, construction engineers, contractors and draftsmen. It provides compact data on many phases of the planning and construction of buildings of all types. A corrected printing with minor changes was published in 1936.

MULLIGAN, JOHN ALOYSIUS

Handbook of brick masonry construction. New York: McGraw-Hill Book Company, Inc., 1942. 526 p. illus. 23 cm. \$5.00. 3438

Contents: Bricklaying. Concrete masonry. Sand. Concrete. Cement. Lime. Mortar. Joints. Bond. Brick. Common brick. Fire-brick. Face brick. Testing brickwork. Structural terra cotta and hollow tile. Composite masonry. Sewer pipe. Concrete building

units. Cavity walls. Brick veneer. Backing of ashlar masonry. Cement plaster and pargeing. Stone masonry. Limestone and rubble masonry. Architectural terra cotta. Weathering. Efflorescence and stains. Glass-block masonry. Window calking. Underpinning with brickwork. Brickwork for boiler setting. Fireplaces and chimneys. Paving. Swimming pools. Timbrel arch construction. Specifications. Definitions and tables. Glossary.

Note: Practical and dependable manual for all concerned with the estimating and erection of brick masonry work—including not only contractors and masons, but also architects, manufacturers, and others interested in the efficient and economical application of masonry materials. Describes every type of work performed by bricklayers and every type of material handled by them, giving methods, pointers, and technical data to aid in best selection and handling of these materials, and numerous tables of labor and materials requirements to aid in quicker and more accurate estimating.

PARKER, HARRY

Simplified engineering for architects and builders. New York: John Wiley & Sons, Inc., 1938. 214 p. illus. 20 cm. \$2.75. 3439

Contents: Principles of mechanics. Timber construction. Steel construction. Reinforced concrete. Roof trusses. Index.

Note: A brief, pocket-size book dealing with the elementary problems of engineering as well as basic principles. Derivations of formulas are explained in a manner that requires no knowledge of advanced mathematics, and the method of presentation is clear. The book deals with all types of construction, with practical procedure illustrated for each phase of the subject. There is a section of questions with answers, and also a number of problems to be solved. No handbooks are required, as all necessary tables are included in the book.

SCHOLTEN, JOHN A.

Timber-connector joints, their strength and design. Washington, D.C.: Government Printing Office, 1944. 106 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 865) \$0.20. 3440

Contents: Introduction. Timber-connector types, their advantages and uses. Design of timber-connector joints. Derivation of safe working loads for long-continued loading. Tables of safe working loads. Modification of working loads and factors to be considered in their use. End distance and spacing. Placement of multiple connectors. Cross bolts. Net section. Examples of connector-joint design. Tests of fundamental factors affecting connector-joint strength. Literature cited.

Note: The principal purpose of this bulletin is to present current design data for three types of connectors in various sizes when used with different species of wood and to provide an analysis of the various factors which affect the strength of connector joints. The three types of connectors chosen for study were types of connectors widely used in wood construction, representing three distinct methods of application: the split-ring, toothed-ring, and claw-plate connectors.

SIEGELE, HERMAN HUGO

Building forms, stairs, roofs; a practical book of instruction for carpenters and builders, covering form building, scaffolding, finishing, plans for a small house, stair building and roof framing. Written in simple language, with practical illustrations. Chicago: F. J. Drake & Co., 1944. 210 p. illus. 23 cm. \$2.00. 3441

Contents (abridged): Necessary equipment. Staking out, hitches and batter boards. Column and beam forms. Shores, walers and tierods. Pans, formulas and miscellaneous forms. Bucks and scaffolding. Screeds. Plugging and grounds. Setting jambs. Flooring and floors. Casing up openings. Finishing problems. Foundation plan and details. Plans for first floor, attic and roof. Plank stairs and ladders. Stairs. Rough horses and step construction. Newels and handrails. Roofs and roof pitches. The steel square and roof framing. Hip and jack rafter cuts. Framing polygon roofs.

Note: Written in terms commonly used by carpenters on the job, this book is intended for the practical man and provides instruction for the apprentice and journeyman carpenter, carpenter foreman, and the vocational school teacher.

SIEGELE, HERMAN HUGO

Carpentry; craft problems, a complete practical book of instruction, covering all branches of carpentry, written in terms commonly used on the job and illustrated from the standpoint of solving the every-day problems of carpenters. Chicago: Frederick J. Drake and Company, 1944. 302 p. illus. 23 cm. \$2.00. 3442

Contents (abridged): Tools. Squaring methods, staking out and batter boards. Forms for residence foundations, slabs and beams. Shores and beams. Column and other forms. Sills and fire-proof construction. Second-floor joist supports and bridging. Rough floors, floor openings and dropped ceilings. Framing and raising skeleton walls. Gutters and flat roofs. Columns. Steps. Lattice work. Cornerboards and outside base. Half-timber work and stucco corners. Building paper and siding. Brackets and gable finish. Door and window frames. Sheathing and shingling. Roll roofing. Corrugated metal. Screen frames. Sash and sash weights. Job-made doors. Door jacks and putting on butts. Estimating. Heavy timber joints. Round timber framing and log houses. Twisted timbers—witness marks. Mortise-and-tenon and other joints. Heavy timber barns. Trusses. Shoring, needling and heavy-timber bracing. Index.

Note: A practical book on carpentry, divided into 53 lessons, illustrated with 754 drawings and diagrams. The book is intended especially for the apprentice carpenter, and also covers problems that arise in the work of the journeyman carpenter, the foreman, and the superintendent of construction work. Written in simple English.

TOWNSEND, GILBERT

Carpentry; a practical treatise on simple building construction, including framing, roof construction, general carpentry work, exterior and interior finish of buildings, building forms and working drawings. Second edition. Chicago: American Technical Society, 1936. 436 p. illus. 21 cm. \$2.00. 3443

Contents: Varieties of timber. Tools. Ground location. Framing. Joints and splices in carpentry and joinery. Walls. Braced frames. Studding. Partitions. Floors. Girders. Stairs. Laying out roofs. Roof frame. Rafters. Special framing. Exterior and interior finish. Window and door finish. Trim, etc. Index.

Note: A practical handbook for carpenters and apprentices dealing with carpentry and joinery in all its phases. Correct methods are discussed and illustrated for simple building construction and for general carpentry work. The book may be used either for home study or for vocational school courses.

TOWNSEND, GILBERT, AND OTHERS

How to estimate carpentry, masonry, lath and plaster, marble and tile, air conditioning, electrical wiring, sheet metal, plumbing, linoleum, glass, painting, hardware, by Gilbert Townsend, J. Ralph Dalzell, and James McKinney. Electrical sections by Carl H. Dunlap. Chicago: American Technical Society, 1939. 629 p. illus. 21 cm. \$4.75. 3444

Contents: Mathematics related to estimating. Specifications and contracts. Blueprint reading. Surveying and excavation. Footing. Foundations and walls. Framing and trim. Cost records. Estimating forms. How to estimate material and labor costs for excavations, masonry, carpentry, electricity, sheet metal, lath and plaster, linoleum, plumbing, furnaces, heating, ventilating, hardware, painting, glass, tile, etc. Functions of numbers. Index.

Note: A comprehensive, practical book on the estimating of material and labor costs. It covers all phases of the building trades related to residences and moderate sized buildings. Actual construction is described, with added information on mathematics and blueprint reading. Forty-four tables are included.

TOWNSEND, GILBERT

The steel square; how to use its scales; how to make braces; roof construction; other uses.

Chicago: American Technical Society, 1939. 96 p. illus. 21 cm. \$1.25. 3445

Contents: Details of modern steel squares. Scales. How to use square. Braces. Roof framing. Common rafters. Hip and valley rafters. Jack rafters. Cripple jack rafters. Other use of square. Index.

Note: The various markings which appear on the steel square are explained, and the purposes for which they are used by the carpenter are indicated by means of illustrations and detailed instructions. The book also gives information on the use of the square in the construction of the different parts of wood-framed structures, including the building of roofs.

UNDERWOOD, G.

Standard construction methods. Second edition. New York: McGraw-Hill Book Company, Inc., 1931. 501 p. illus. 23 cm. \$5.00. 3446

Contents: Organization and equipment: excavation. Pile driving. Concrete construction. Wood construction. Brick construction. Steel construction. Roofing and flashing. Lathing and plastering. Scaffolds. Erection and rigging. Pipe work. Painting. Construction schedule.

Note: A manual of best methods in all phases of practical construction work for the use of construction superintendents and others upon whom rests the responsibility of getting construction jobs done quickly and efficiently. The treatment is simple and direct. Only such methods as have been found to be useful in actual everyday practice are described.

VAN GAASBEEK, RICHARD MONTGOMERY

A practical course in roof framing; the underlying principles and their application to practical work, especially written for foremen, journeymen and apprentice woodworkers, and as a text book for schools. Fourth edition, revised and enlarged. Chicago: F. J. Drake & Company, 1941. 270 p. illus. 19 cm. \$2.00. 3447

Contents (abridged): Principles of roof framing. How to frame a gable roof. How to frame a roof of equal pitch. Seven problems for practice in framing roofs of equal pitch. How to frame a roof of unequal pitch. How to frame a gambrel roof. How to determine the lengths of roof rafters. How to frame a curved rafter roof. How to frame a conic roof. How to develop hopper bevels. How to miter rake and level mouldings. Index.

Note: A detailed discussion of roof framing, intended to give house carpenters and other woodworkers a practical knowledge in use of the steel square. Specifications and layout are given for each type of roof, with diagrammatic illustrations.

WILSON, THOMAS RANDALL CARSON

The glued laminated wooden arch. Washington, D.C.: Government Printing Office, 1939. 123 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 691) \$0.20. 3448

Contents: Introduction. Purpose and scope. Advantages and disadvantages of glued laminated construction. Uses of glued laminated construction. Tests of the strength of glue laminated construction. Discussion of strength data in relation to stresses for use in design. Limitations in design. Moisture content of material for glued laminated construction. Specifications for material and construction of laminated wooden members. Design stresses. Design, manufacture, and erection of laminated arches in Forest Products Laboratory service building. Tests of glued laminated members under continued loading. Glued laminated construction in farm buildings. Nailing as a substitute for pressing or clamping in making glued laminated members. Glued laminated construction in Europe. Durability of glue laminated construction. Design and analysis of arches. Formula for deflection of parabolically curved member under end thrust. Radial stress in a curved member. Effect of shrinkage or swelling on the shape of a curved laminated wooden member. Literature cited.

Note: The purpose of this bulletin is to discuss recent research on the strength of glued laminated construction as conducted at the Forest Products Laboratory and to present the resulting recommendations for specifications and design stresses, together with other topics and information useful to engineers, architects, and builders.

Concrete Construction

AMERICAN CONCRETE INSTITUTE

A. C. I. manual of concrete inspection, reported by American Concrete Institute Committee 611, Inspection of Concrete, J. W. Kelly, author-chairman. Second edition with corrections and revisions. Detroit, Mich.: American Concrete Institute, 1941. 137 p. illus. 19 cm. Paper, \$1.00. 3448a

Contents: Introduction. The inspector. Fundamentals of concrete. Inspection and testing of materials. Proportioning. Inspection before concreting. Inspection of concreting. Inspection after concreting. Testing of concrete. Records and reports. Special methods of concreting. References. Standard specifications and test methods. Check list of principal features of inspection. Index.

Note: This manual undertakes to describe those methods of inspecting concrete construction which are generally accepted as good practice. The publication is intended to be of use not only to inspectors but also to engineers, architects, contractors, and others interested in construction. The references, occupying p. 118-121, comprise a bibliography of the subject.

AMERICAN CONCRETE INSTITUTE

Reinforced concrete design handbook of the American Concrete Institute, Detroit, Michigan. Reported by Committee 317, A. J. Boase, author-chairman. Detroit: Published cooperatively by American Concrete Institute, Portland Cement Association, Concrete Reinforcing Steel Institute, Rail Steel Bar Association, 1944. 132 p. illus. 23 cm. \$2.00. 3448b

Contents: Foreword. Symbols and notation. Design of flexural members: simple bending and bending combined with axial load. Investigation of flexural members: simple bending and bending combined with axial load. Design of stirrups. Design of columns—centrically loaded. Design and investigation of columns—eccentrically loaded. Design of spread footings. Design of pile footings. Summary and derivations of equations. Tables 1-43. Appendix: Determination of moments in building frames. Tables 1A-2A. Symbols and notation.

Note: This handbook was first printed in 1939. About half the book consists of tables, which cover the large range of unit stresses met in general practice. An important aim of the committee was to reduce the design of members under combined bending and axial load to the simple form used in the solution of common flexural problems. The text of the book contains 38 examples and the appendix 6.

BAUER, EDWARD EZRA

Plain concrete. Second edition. New York: McGraw-Hill Book Company, Inc., 1936. 364 p. illus. 23 cm. \$4.00. 3449

Contents: Part I. Introduction. Standard Portland cement. Special cements. Mineral aggregates. Theories of proportioning. Applied proportioning. Factors affecting concrete strengths. Making of concrete. Placing, finishing and curing of concrete. Durability, workability and waterproofness. Field control of concrete. Specifications. Sampling. Testing. Part II. Instructions for the performance of laboratory tests. Tests on materials. Tests on concrete.

Note: A detailed discussion of the production of concrete, covering every step from the selection and preparation of materials to placing, finishing, and curing. Special emphasis is given to facts useful in the preparation of specifications and in testing concrete materials and finished concrete.

CAUGHEY, ROBERT ANDREW

Reinforced concrete. New York: D. Van Nostrand Company, Inc., 1936. 292 p. illus. 23 cm. \$3.75. 3450

Contents: Fundamental principles. Web stresses in reinforced concrete beams. Beam design practice. Columns. Combined bend-

ing and direct stress. Concrete building design. Moments in beams and frames. Floors carrying concentrated loads. Composite members of concrete and structural steel. Design of arches and rigid frames. Design of masonry dams. Design of retaining walls. Appendices: Building regulations for reinforced concrete. Practical consideration.

Note: This is a college textbook of concrete design which maintains the point of view that each problem should be solved from basic principles, rather than by analogy to similar problems. It is designed primarily for courses in which students are expected to do much problem work. The 1936 Report of Committee 501 of the American Concrete Institute has been provided as Appendix A for use in problems and design work, and the tables, diagrams, and text have been revised to allow for the use of high—as well as low—strength concretes.

CROSS, HARDY, AND NEWLIN DOLBEY MORGAN
Continuous frames of reinforced concrete.
New York: John Wiley & Sons, Inc., 1932. 343 p.
illus. 23 cm. \$4.50. 3451

Contents: Introduction. Statics of deflected structures. Geometry of deflected structures. Moment distribution. Haunched beams. Continuous girders—maximum moments, shears and reactions. Rigid frames. Influence lines—graphical construction. Right arches of reinforced concrete. Index.

Note: This is not a book on design, but a development of a single fundamental, geometrical method of moment and shear distribution in analyzing statically indeterminate structures, particularly of reinforced concrete. The text applies almost equally well to steel structures. A special effort has been made to help the engineer to picture deformations, numerous diagrams being employed for that purpose. Throughout the book effective use is made of figured expressions in the form of graphs, diagrams, tabular, and partly tabular-partly graphic presentations. The book is notably free from difficult mathematics.

DUNHAM, CLARENCE WHITING

The theory and practice of reinforced concrete. Second edition. New York: McGraw-Hill Book Company, Inc., 1944. 558 p. illus. 21 cm. \$4.50. 3452

Contents: Properties and manufacture of concrete. Stresses in beams due to bending. Bond. Shear and web reinforcement in beams. Composite beams. Columns. Combined bending and direct stresses. Retaining walls. Foundations. Miscellaneous structures. Analysis of rigid frames by method of work. Arches. Analysis of rigid frames by moment distribution. Building frames. Architectural considerations. Practical details and miscellaneous data. Appendix. Index.

Note: The first part of this book is elementary and intended for introductory engineering courses. The remainder is written for advanced students and practicing engineers. Among the topics that have been treated more fully than in the first edition (1939) are methods for the design of beams, bond stresses, and reinforcement. A beam-and-girder warehouse floor has been worked out as an illustrative problem of how to plan and picture span lengths and the arrangement of the reinforcement; design data are given for column footings with direct loads and bending; and the material on columns, two-way slabs, and flat slabs has been rewritten to agree with the 1940 report of the Joint Committee on Standard Specifications for Concrete and Reinforced Concrete of the various American engineering societies.

HOOL, GEORGE ALBERT

Reinforced concrete construction, revised by Harry E. Pulver. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1937. 454 p. illus. 23 cm. (Engineering education series) \$4.00. 3453

Contents: The component materials. Concrete. Steel. Concrete and steel in combination. The theory and design of slabs, beams, and columns. Simple rectangular beams. T-beams and beams with tension and compression reinforcement. Restrained and continuous beams. Slab, cross-beam, and girder floors. Simple rectangular flat slab floors. Columns. Single column footings. Bending and direct stress. Tables and diagrams. Shear and moment considerations in continuous beams. Index.

Note: Presents detailed principles, data, tests, and construction facts relating to the materials of reinforced concrete construction

and explains, with many examples, the design of all the simpler elements. A concise treatment of the essentials, adapted for class or home study purposes. Revised to conform with new American Concrete Institute *Building regulations for reinforced concrete*, 1936. The fourth edition also contains new material on shrinkage and plastic flow in structural members, particularly reinforced concrete columns, as well as new data tables and diagrams.

JOINT COMMITTEE ON STANDARD SPECIFICATIONS FOR CONCRETE AND REINFORCED CONCRETE

Recommended practice and standard specifications for concrete and reinforced concrete. Affiliated committees of the American Concrete Institute, American Institute of Architects, American Railway Engineering Association, American Society of Civil Engineers, American Society for Testing Materials, Portland Cement Association. Detroit: American Concrete Institute, 1940. 140 p. 22 cm. Paper, \$1.50. 3454

Contents (abridged): Recommended practice: Scope and definitions. Materials. Proportioning, mixing, curing, and testing concrete. Forms and placing. Details of design and constructions. Waterproofing and protective treatments. Surface finishes. Design. Standard specifications. Appendixes. Index.

Note: This report summarizes the recommendations of the Joint Committee relative to the design and building of concrete and reinforced concrete structures. The work consists of two interdependent parts: Recommended practice and Standard specifications. No attempt is made to treat structures in detail but many specific applications are referred to, such as waterproofing, paints, wearing surfaces, and methods of bonding.

PARKER, HARRY

Simplified design of reinforced concrete. New York: John Wiley & Sons, Inc., 1943. 249 p. illus. 20 cm. \$2.75. 3455

Contents: Materials. Proportioning and mixing. Shear and bending moments in beams. Formulas for bending. Shear and bond stresses. Design of rectangular beams. Design of T-beams. Beams reinforced for compression. Reinforced concrete floor systems. Reinforced concrete columns. Foundations. Retaining walls. Miscellaneous members. Index.

Note: This book confines itself to simple, succinct explanations. The treatment is not intended to be exhaustive; it covers only the most common structural elements in both plain and reinforced concrete design. Enough of the theory is given to make sure that the reader has a thorough knowledge of the essential principles involved. Only the basic formulas are derived. The usual tables needed in the design of reinforced concrete are included.

PEABODY, DEAN

The design of reinforced concrete structures. New York: John Wiley & Sons, Inc., 1936. 457 p. illus. 23 cm. \$4.00. 3456

Contents: General principles. Rectangular beams. Slabs with one-way steel. Shear, bond, anchorage, and diagonal tension. Rectangular beam design. Rectangular beams reinforced with tension and compression steel. Tee beams. Deflection, flow and torsion. Two-way and flat slabs. Columns. Footings and retaining walls. Continuous beams. Statically indeterminate structures. Appendix. Index.

Note: The fundamentals of structural design in reinforced concrete are given, with a thorough development of theory and comprehensive discussions of economical design and comparative costs. Detailed solutions of illustrative problems are included as a guide for handling similar problems that may be met in practice. Although the book is concerned primarily with reinforced concrete in the design of buildings, the underlying principles are applicable to other classes of structures.

SUTHERLAND, HALE, AND RAYMOND C. REESE

Introduction to reinforced concrete design. With chapters on concrete by Inge Lyse. Second edition, based on the first edition by Hale

Sutherland and the late Walter W. Clifford.
New York: John Wiley & Sons, Inc., 1943. 559
p. illus. 23 cm. \$5.00. 3457

Contents: Introduction. Concrete materials. Designing concrete mixes. Manufacture of concrete. Properties of concrete. Forms. Beams. Compression members. Formulas, diagrams, and tables. Retaining walls. Highway bridges. Continuous beams and rigid frames. Building design—individual members. Problems in tee-beam design. Foundations and footings. Slab constructions; ribbed, two-way, flat, and stair slabs. Example of building design. Check building design by rigid frame analysis. Lateral loads on frames. Arches. Plans and details. Economy in design. Appendix. Index.

Note: The fundamentals of the subject are presented as simply as possible, with emphasis upon practical considerations. In the second edition, current developments are treated. The book illustrates by actual application to typical problems the modern methods of continuity. Complete designs have been made for several types of structure and complete designs of portions of the structures have been made in several alternative methods. The material on concrete making was written by Professor Inge Lyse of the Norwegian Institute of Technology, Trondheim, Norway.

TURNEAURE, FREDERICK EUGENE, AND E. R. MAURER

Principles of reinforced concrete construction.
Fourth edition, revised and largely rewritten.
New York: John Wiley & Sons, Inc., 1932. 461
p. illus. 23 cm. \$4.00. 3458

Contents: Introductory. Properties of the materials. Theory of flexure of beams. Shear and bond stress. Design of beams. Deflection of beams. Columns. Analysis of flat slabs. Building construction. Arches. Retaining walls. Tables and diagrams. Appendix. Index.

Note: Presents systematically the principles of mechanics underlying the design of reinforced concrete, gives the results of available tests which aid in establishing coefficients in working stresses, and makes clear the principles of design by illustrative material from practice. The fourth edition includes revised formulas and diagrams for the design of beams, including circular sections subjected to bending and compression; adaptation of diagrams to the use of any desired value of n ; amplification of material on flat slabs; effect of shrinkage and plastic flow on stresses in beams, columns, and arches.

UNITED STATES. BUREAU OF RECLAMATION

Concrete manual. A manual for the control of concrete construction. Fourth edition. Denver, Colo.: Bureau of Reclamation Branch of Design and Construction, 1942. 476 p. illus. 16 cm. \$1.00 (Postage not required for transmittal to Canada, Mexico, and the United States; postage to other foreign countries, \$0.12 extra) 3459

Contents: Preface. Concrete and concrete materials. Investigation and selection of concrete materials. Concrete mixes. Inspection, field laboratory facilities, and reports. Concrete manufacturing. Handling, placing, and curing. Special types of concrete. Appendix—Methods for sampling and testing: Aggregate testing. Concrete testing. Miscellaneous. Index.

Note: Fourth edition of a manual originally published in 1938. The third edition was considerably revised. The fourth edition is slightly revised from the third edition. The manual was prepared and published in order to make available the information on control of concrete construction derived from years of practical experience and technical research on the part of the Bureau of Reclamation. Although intended primarily for the guidance of Bureau field organizations, the information, advice, and instruction which the handbook contains are generally applicable to the manufacture of concrete and all other phases of concrete construction control.

UNITED STATES. WAR DEPARTMENT. CORPS OF ENGINEERS, U.S. ARMY, NORTH ATLANTIC DIVISION. CENTRAL CONCRETE LABORATORY

Handbook for concrete and cement. A hand-

book of test methods and inspection procedures for concrete and Portland cement. Mount Vernon, N.Y.: Central Concrete Laboratory, 1942. 370 p. illus. 23 cm. \$3.00. 3460

Contents: Preface. Part I, Concrete: Introductory. Aggregates. Concrete. Part II, Cement: Introductory. Chemical tests. Physical tests. Part III, Miscellaneous: Water.

Note: This handbook was prepared to include under one cover the field and laboratory test methods and inspection procedures used by the Central Concrete Laboratory in accomplishing its function as the testing agency for concrete construction in the North Atlantic Division of the Corps of Engineers, U.S. Army. While intended primarily for use as a ready source of reference by the personnel of the Division, it is available for wider distribution, its aims being the promotion of a more general understanding of the control necessary in the manufacture of durable concrete.

URQUHART, LEONARD CHURCH, AND CHARLES EDWARD O'ROURKE

Design of concrete structures. Fourth edition.
New York: McGraw-Hill Book Company, Inc., 1940. 564 p. illus. 23 cm. \$4.50. 3461

Contents: Plain concrete. General properties of reinforced concrete. Beams and slabs. Columns. Bending and axial stress. Stresses in continuous beams and building frames. Foundations. Reinforced concrete buildings. Retaining walls. Arches. Slab, beam, and girder bridges. Appendices: Standard notation. Working stresses, joint code. Flat-slab regulations, joint code. Tables and diagrams. Index.

Note: This text presents the best modern practice in the designing of plain and reinforced concrete structures, together with sufficient development of the theory of concrete design and illustrative problems to give the beginning student a thorough understanding of the fundamentals. The fourth edition conforms to changes in the standard building code for column design, and includes new material on design of T-beams and footings.

WEBB, WALTER LORING, AND W. HERBERT GIBSON

Concrete design and construction. Second edition. Revised by W. Herbert Gibson. Chicago: American Technical Society, 1940. 500 p. illus. 21 cm. \$4.75. 3462

Contents: Development. Aggregates. Mixing. Transporting and depositing. Steel for reinforcing. Construction. Retaining walls. Walks. Beam design. Slabs. Bond stresses. T-surfaces. Form construction. Machinery. Questions and problems, etc. Index.

Note: A clear and simple text on the general theory and design of reinforced concrete, including the bonding of steel and concrete, vertical shear and diagonal tension, and the allowable working stresses permitted in concrete and reinforcing steel. The design of slabs, plain beams, and T-beams is explained and illustrated by problems and fully worked out. Many diagrams and tables have been inserted to assist in the design of these members in practical work. The different types of columns and footings, including piling, commonly used in reinforced concrete structures, are presented and illustrated. The mixing, transporting, and placing of concrete is discussed and modern machinery for this work is described and illustrated. The important subject of forms is treated and demonstrated.

WILLIAMS, CLEMENT CLARENCE

The design of masonry structures and foundations. Second edition. New York: McGraw-Hill Book Company, Inc., 1930. 603 p. illus. 23 cm. \$5.00. 3463

Contents: General principles. Masonry laid in mortar. Plain concrete. Reinforced concrete. Masonry arches. Dams and sea walls. Retaining walls and quay walls. Bridge abutments and piers. Concrete viaducts and trestles. Culverts and underground conduits. Bins and chimneys. Forms and construction. Foundations on dry ground. Open foundations under water. Foundations under water—pneumatic process. Appendices. Index.

Note: A textbook offering a mode of analyzing forces and calculating resulting stresses and outlining an acceptable method of design for masonry structures and foundations, intended primarily

for the student rather than for the practicing engineer. The second edition contains new material on plain concrete, arch dams, foundations, and retaining walls.

Foundations

CHELLIS, ROBERT DUNNING

Pile-driving handbook; theory, design, practice of pile foundations. New York, Chicago: Pitman Publishing Corporation, 1944. 276 p. illus. 21 cm. \$4.50. 3464

Contents: The philosophy of pile foundations. Pile-driving analysis and application of formulas. Speed, stroke, and driving stresses. Selection of driving equipment. Selection of type of pile and methods of driving. Effects of pile spacing and grouping. Design of piles for loadings. Types of concrete piles. Deterioration and preservation of piles. Tables. Appendix. Bibliography. Index.

Note: Covers the theory and design of pile foundations and practical aspects of the subject, giving data needed by civil engineers, construction engineers, pile-driving operators, and architects. Formulas and standard specifications are given in the appendixes, and there is a five-page classified bibliography.

HOOL, GEORGE ALBERT, AND W. S. KINNE, EDITORS

Foundations, abutments and footings, compiled by a staff of specialists; editors-in-chief, George A. Hool and W. S. Kinne, revised by R. R. Zippodt and E. J. Kilcawley. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 417 p. illus. 23 cm. \$4.00. 3465

Contents: Soil investigation. Excavation. Foundations. Spread footings. Underpinnings. Foundations requiring special consideration. Bridge piers and abutments. Application of the law relative to the engineer. Appendixes: Characteristics of soils. Formulas for bearing power of piles. Index.

Note: A discussion of the engineering of foundations of all types, footings and piers, land and underwater, describing each type of structure, its suitability for various purposes, factors of design, design methods, construction pointers, and other facts to aid the engineer and construction man in their work in this field. In this second edition there has been a complete revision of the text and appendixes, with new methods indicated and new illustrations provided. In the section on spread footings, the design of isolated spread footings has been revised to conform to the 1941 building regulations for reinforced concrete of the American Concrete Institute.

JACOBY, HENRY SYLVESTER, AND ROLAND R. DAVIS

Foundations of bridges and buildings. Third edition. New York: McGraw-Hill Book Company, Inc., 1941. 535 p. illus. 23 cm. \$5.00. 3466

Contents: Soil explorations and bearing capacity. Some fundamentals of soil mechanics. Timber piles and drivers. Driving and protecting timber piles. Bearing power of piles. Concrete piles. Sand piles, metal piles, and sheet piles. Cofferdams. Box and open caissons. Pneumatic caissons for bridges. Pneumatic caissons for buildings. Land foundations in open excavations and control of water. Spread foundations. Bridge piers. Double-shaft and pivot piers. Underpinning buildings.

Note: Treats in a systematic manner the entire subject of foundations for bridges and buildings as represented by the best current engineering practice. The present edition contains a new chapter on soil mechanics; new material on piles, cofferdams, caissons; land foundations in open excavation; bridge piers and abutments.

PRENTIS, EDMUND ASTLEY, AND LAZARUS WHITE

Underpinning; its practice and applications. New York: Columbia University Press, 1931. 318 p. illus. 24 cm. \$7.50. 3467

Contents: Introduction, by William A. Starrett. General considerations. Preliminary support. Underpinning methods. Examples of underpinning. Applications of underpinning to other work. Some aspects of the science of foundations. Appendixes: Specifications (including payments). Legal aspects of underpinning and foundation work. Present rates of pay. Glossary of terms used in underpinning. Index.

Note: A textbook for architects, engineers, and construction contractors, describing the technique of adding new permanent support to existing foundations in order to provide additional capacity or additional depth. The general theory of foundations is also discussed and some details of soil mechanics are given. Many examples of actual underpinning problems are described and illustrated by means of photographs and drawings. The present volume is intended to replace the author's *Modern underpinning*, New York, 1917, and contains much material not found in the earlier volume.

Engineering Geology and Soil Mechanics

AMERICAN SOCIETY FOR TESTING MATERIALS

Shear testing of soils. Philadelphia: The American Society for Testing Materials, 1939. 122 p. illus. 22 cm. (Reprint from the American Society for Testing Materials. *Proceedings*, Vol. 39, 1939) Paper, \$1.25. 3468

Contents: Torsion shear tests and their place in the determination of the shearing resistance of soils, by M. Juul Hvorslev. Some practical aspects of soil shear testing, by Gregory P. Tschobotareff. Essential features of triaxial shear tests, by C. A. Hogentogler and E. S. Barber. A triaxial compression apparatus for the determination of stress-deformation characteristics of soils, by John D. Watson. A comparison of results of direct shear and cylindrical compression tests, by Donald W. Taylor. Some investigations of the shearing resistance of cohesionless and cohesive materials, by D. M. Burmister. The shearing resistance of soil, its measurement and practical significance, by W. S. Housel. The effects of internal hydrostatic pressure on the shearing strength of soils, by L. W. Hamilton.

Note: A few of these technical papers have bibliographies. A brief general discussion appears at the end of the symposium.

HOGENTOGLER, CHESTER ALLEN, JR.

Engineering properties of soil, by C. A. Hogentogler, with the collaboration of Henry Aarons, Richard C. Thoreen, Edward A. Willis, and Adolph M. Wintermyer. Arranged and edited by C. A. Hogentogler, Jr. New York: McGraw-Hill Book Company, Inc., 1937. 434 p. illus. 23 cm. \$5.00. 3469

Contents: Introduction. Part I, Origin and composition of soil: Soil constituents. Soil mixtures. Natural soil formations. Part II, Characteristics of soil: Colloidal surface phenomena. The character of soil moisture. Movements of soil moisture. Frost phenomena. Part III, Structural properties of soil: The pressure bulb. Settlement due to compression. Shear strength and stability. Part IV, Practical design and construction: Classification of soils for engineering purposes. Designs of graded mixtures. Stabilization of fine-grained soils. Construction of stabilized-soil roads. Soft foundation soils. Properties and performance of typical soils. Miscellaneous properties and tests. Appendix. Conversion tables. Nomenclature. Glossary of geological terms. Terms identifying soils in the profile.

Note: Provides a working knowledge of the structural properties of soil and the methods for their evaluation, including general information on properties of value in the design and construction of engineering works, descriptions of methods used for examining soil for engineering uses, analysis of the significance of results of investigations and discussion, supplemented by examples of the use of test data in practice.

KRYNINE, DIMITRI PAVLOVITCH

Soil mechanics, its principles and structural applications. New York: McGraw-Hill Book

Company, Inc., 1941. 451 p. illus. 23 cm. \$5.00.
3470

Contents: Part I, Elements of soil physics: Origin and general characteristics of soils. Soil moisture: soil plasticity and consistency. Seepage phenomena and frost action in soils. Part II, Elements of the mechanics of earth masses: Stresses in earth masses. Compression strains: theory of consolidation. Shearing resistance and conditions of failure of an earth mass. Review of parts one and two; and introduction to part three. Part III, Structural applications: Stability of foundations. Stability of cuts and embankments. Stability of retaining walls and bulkheads. Settlement of structures. Soil sampling and field soil testing. Appendixes: Wet mechanical analysis of soils. Vertical pressure from a distributed load.

Note: This book presents the principles used in the design, construction, and maintenance of foundations of structures and of structures made of earth materials. Engineering applications of these principles are discussed, field and laboratory soil investigations are described, and the settlement of structures, its causes, prevention, and damage are considered.

LEGGET, ROBERT FERGUSON

Geology and engineering. With a foreword by P. G. H. Boswell. New York: McGraw-Hill Book Co., Inc., 1939. 650 p. illus. 23 cm. \$4.50.
3471

Contents (abridged): Geology: an outline of the science. The composition of the earth's crust. The structure of the earth's crust. Geological field-work and mapping. The civil engineer and geology. Preliminary and exploratory work. Applied geophysics and civil engineering. Tunnels. Open excavation, embankment fills and repairing walls. Earth movements and landslides. Transportation routes. The foundation of bridges and cofferdam problems. The foundation of dams. Reservoirs and catchment areas. Erosion and silting. Water supply. Ground water. Building foundations. Materials of construction. Soils and soil mechanics. Appendix. Index.

Note: Practical applications of geology to engineering problems are treated in this book for engineers and geologists. In addition to bibliographies given at the end of each chapter, the appendix contains a list of references cited in the text.

PLUMMER, FRED LEROY, AND STANLEY M. DORE

Soil mechanics and foundations. New York: Pitman Publishing Corporation, 1940. 473 p. illus. 23 cm. \$4.50.
3472

Contents: Introduction. The geology of soils. Soil properties. Soil tests. Colloids. Mechanical analysis. Soil moisture. Limits of consistency. Soil classification. Permeability. Shearing strength. Cohesion and internal friction. Compressibility and consolidation. Frost action in soils. Stress distribution in soils. Bearing capacity of soils. Bearing capacity of piles. Settlement of structures. Stability of slopes. Soil pressure against retaining walls. Soil compaction. Proctor tests. Ground waters in foundations. Permeability of foundations. Unwatering of foundations. Foundations for buildings—footings and pile construction. Foundations for bridges—caissons and cofferdams. Foundations for highways. Foundations for dams. Earth dams—investigations and designs. Earth dams—construction. Construction plant and organization. Engineering and laboratory organization. Appendix. Problems. Bibliography. Index.

Note: A textbook and reference book for engineers and students presenting the basic principles of the theory of foundations and earthworks. Illustrated by means of field and laboratory tests, the book attempts to correlate and analyze the results of recent studies of the engineering properties of soils and their application to problems of construction and design of dams, bridges, highways, and buildings.

RIES, HEINRICH, AND THOMAS L. WATSON

Engineering geology. Fifth edition. New York: John Wiley & Sons, Inc., 1936. 750 p. illus. 23 cm. \$5.00.
3473

Contents: The rock-forming minerals. Rocks, their general characters, mode of occurrence, and origin. Structural features of rocks. Rock-weathering and soils. Surface waters (rivers). Sub-surface waters. Landslides and land subsidence. Wave action and shore currents, their relation to coasts and harbors. Lakes,

their origin and relation to engineering work. Glacial deposits, their origin, structure and economic bearing. Geology of reservoirs and dam sites. Building stone. Limes, cement and plaster. Clay and clay products. Coal series. Petroleum, natural gas and other hydrocarbons. Road foundations and road materials. Ore deposits. Historical geology. Appendix: Geological surveys. Index.

Note: This book continues to emphasize throughout the practical application of the topics treated to engineering work, giving considerable attention to such problems as the character of the common rocks in their use for building stone and road material; the structure of rocks in relation to tunneling operations, dam and reservoir foundations, landslides, etc.; the geological conditions affecting and controlling underground water supplies; and the relation of soils to sewage disposal and water purification. In the fifth edition the book shows considerable revision. Nearly every chapter has had changes made in it, but the most extensive additions and corrections are found in those sections dealing with subsurface waters, roads and road materials, landslides and subsidence, and oil and gas. New references have been added, and a number of new illustrative cases are included.

TERZAGHI, KARL VON

Theoretical soil mechanics. New York: John Wiley & Sons, Inc., 1943. 510 p. illus. 23 cm. \$5.00.
3474

Contents: Section A, General principles involved in the theories of soil mechanics: Introduction. Stress conditions for failure in soils. Plastic equilibrium in a semi-infinite mass with a plane surface. Application of general theories to practical problems. Section B, Conditions for shear failure in ideal soils: Arching in ideal soils. Retaining wall problems. Passive earth pressure. Bearing capacity. Stability of slopes. Earth pressure on temporary supports in cuts, tunnels, and shafts. Anchored bulkheads. Section C, Mechanical interaction between solid and water in soils: Effect of seepage on the conditions for equilibrium in ideal sand. Theory of consolidation. Capillary forces. Mechanics of drainage. Section D, Elasticity problems of soil mechanics: Theories involving a coefficient of subgrade, soil, or pile reaction. Theory of semi-infinite elastic solids. Theory of elastic layers and elastic wedges on a rigid base. Vibration problems. Appendix: Influence values for vertical stresses in a semi-infinite elastic solid due to surface loads. References. Author index. Subject index.

Note: Here are presented the theories on which the computation of earth pressure, bearing capacity, stability of slopes, and settlement of foundations are based. The author has limited his discussions to those theories whose practical usefulness has already been demonstrated by field experience. Throughout the volume he emphasizes the decisive influence of the fundamental assumptions of the computations on the final results, and the text leaves no doubt concerning the limits of the validity of each theory.

Dams

CLARK, ALVAN WITCOMBE, COMPILER

Dams. A bibliography of books, periodicals, and society publications appearing from January, 1924 through May, 1936. Fort Belvoir, Va.: The Engineer School, 1936. 256 p. 23 cm. Paper, \$0.75.
3475

Contents: Preface. Abbreviations. Bibliographies. Books. Articles in periodicals, etc. Types of dams. Descriptions of dams and projects. Author index.

Note: The entries in this bibliography are not annotated. Translations of titles in foreign languages are given. Government publications are not generally included.

—Supplement covering April, 1936 through September, 1938. Fort Belvoir, Va.: The Engineer School, 1938. 110 p. 23 cm. Price? 3476

Contents: Preface to supplement. Errata in the original edition. Books. Articles in periodicals, etc. Types of dams. Descriptions of dams and projects.

Note: This volume is a loose-leaf supplement to the preceding entry, arranged in the same order and paged in such a way as to indicate the section of the bibliography supplemented. A few titles are included with earlier dates than April, 1936.

HANNA, FRANK WILLARD, AND ROBERT C. KENNEDY

The design of dams. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 478 p. illus. 23 cm. \$5.00. 3477

Contents: Investigations and surveys. Rainfall and stream flow. Selection of type of dam. Foundations for dams. Forces acting on a gravity masonry dam. Stresses in straight gravity dams. Stresses in curved gravity dams. Design of non-overflow solid gravity dams. Design of overflow solid gravity dams and spillways. Deck dams. General theory of arch dams. Symmetrical thin arch rings of variable thickness. Symmetrical single-centered thin arch rings of uniform thickness. Symmetrical multi-centered thin arch rings. Symmetrical single-centered thick arch rings of uniform thickness. Unsymmetrical thin arch rings of variable thickness. Design of single-arch dams. Design of multiple-arch dams. Design of rock-fill dams. Design of earth dam. Accessories for dams. Hydraulics. Failures of dams.

Note: A comprehensive treatise on the theory and practice of the design of dams and essential and related topics from preliminary studies to accessory structures. All types of modern dams have been given full treatment, including solid and deck gravity, single- and multiple-arch, earth and rock-fill dams. New material in this edition covers earthquake stresses in single- and multiple-arch dams, stresses due to holes such as inspection galleries of various shapes through dams, use of models in dam design, and use of the hydraulic jump as a means of dissipating energy.

JUSTIN, JOEL DE WITT

Earth dam projects. New York: John Wiley & Sons, Inc., 1932. 345 p. illus. 23 cm. \$5.00. 3478

Contents: Failures of earth dams. Preliminary investigations. Subsurface investigation. Materials and laboratory tests. Design: some general considerations. Design: flow through soils, line of saturation. Design: slopes, free passage of water. Design: piping, sheet piling, freeboard. Construction in rolled layers. Construction by hydraulic and semi-hydraulic fill methods. Some earth dams built in rolled layers. Some hydraulic fill dams. Some semi-hydraulic fill dams.

Note: Principles of design and construction that will be useful to the engineer, and the application of these principles by concrete examples. Description of a number of dam failures and discussion as to the causes are given. Various methods of building and a number of representative dams are described.

UNITED STATES. BUREAU OF RECLAMATION

Dams and control works. A description of representative storage and diversion dams and high-pressure reservoir outlet works constructed by the Bureau of Reclamation. Second edition. Washington, D.C.: Government Printing Office, 1938. 261 p. illus. 28 cm. Paper, \$1.00. 3478a

Contents: Foreword. Part I, Storage dams: Boulder dam. Grand Coulee dam. Roosevelt dam. Arrowrock dam. Owyhee dam. American Falls dam. Stony Gorge dam. Bartlett dam. Deadwood dam. Tieton dam. Guernsey dam. Echo dam. McKay dam. Taylor Park dam. Cle Elum dam. Part II, Diversion dams: Imperial dam and desilting works. Alcova dam. Laguna dam. Colorado River dam. Easton dam. Wind River dam. Part III, Special articles: Federal reclamation projects (map). High-pressure reservoir outlets. Hydraulic model testing of structures. Structural model testing of dams. Concrete laboratory operations. Earth materials laboratory operation. Trial load method of analyzing arch dams. Temperature control of mass concrete in large dams. Design and construction of small earth dams. Dams constructed by the Bureau of Reclamation (table).

Note: This publication describes some of the dams constructed by the Bureau of Reclamation and also contains a series of articles, with bibliographies, on various aspects of dam construction. The chapters are written by Bureau of Reclamation engineers. The descriptions of the different dams are accompanied by photographs and engineering plans and sections. The first edition, of which this is an enlargement, was published in 1929 and contained 164 pages.

UNITED STATES. NATIONAL RESOURCES COMMITTEE

Low dams. A manual of design for small water storage projects. Prepared by the Sub-

committee on Small Water Storage Projects of the Water Resources Committee of the National Resources Committee, 1938. Washington, D.C.: Government Printing Office, 1939. 431 p. illus. 23 cm. \$1.50. 3479

Contents: Project study and preliminary investigation. Hydrologic studies. Selection of type. Foundations. Spillway structures. Outlet structures. Earth dams. Rock-fill dams. Concrete and masonry gravity dams. Single arch dams. Buttress dams. Timber dams. Maintenance and operation. Appendices: Modified rational method of estimating flood flows. Soil mechanics. Sub-surface exploration. Surface features of watersheds. Working stresses for structural lumber and timber. Suggested outline of report covering the design of a small dam. Construction methods. Sample specifications. Summary of state laws affecting design and construction of low dams. Average and maximum river discharges. Index.

Note: This manual presents a discussion of the basic principles, governing factors, and essential elements of design of the various types of low dam structures. It is addressed to the designer of the structure and does not include in its scope the field of construction practices or methods. The concept of low dams, as covered in this work, includes those structures with heights to the spillway crest not exceeding 30 feet above the natural stream channel.

WHITE, LAZARUS, AND EDMUND ASTLEY PRENTIS

Cofferdams. New York: Columbia University Press, 1940. 273 p. illus. (part col.) 24 cm. \$7.50. 3480

Contents: Foreword, by E. M. Markham. Authors' preface. Hydrodynamics of cofferdams. Erosion in streams. Lateral earth pressures. Land cofferdams. Practical considerations. Examples of cofferdams. Appendixes. Glossary. Bibliography. Index.

Note: This volume, intended as a reference for student engineers, practicing engineers, and contractors, summarizes the authors' six years of experience as contractors for several of the Mississippi locks and dams. Theory is discussed using models as illustrations, and the practical aspect is studied by referring to the problems of actual construction, with design drawings and location photographs of the cofferdams built and under construction.

Bridges

BLACK, ARCHIBALD

The story of bridges. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1936. 226 p. illus. 23 cm. \$2.50. 3481

Contents: "Big bridges are built under water." Log bridges to Roman aqueducts. From the Dark Ages to the railroads. Wooden trusses lead to iron trusses. An age of iron bridges. The steel era begins. Modern steel truss bridges. Arches become symphonies in steel. Modern suspension bridges. Reinforced concrete bridges. Bridges that move. Some unusual bridges. More unusual bridges. The foundation builders' job. Problems of designers. Erection of bridges. Superstitions of bridge building. Bridges of the future. Index.

Note: All types of bridges are discussed, and the author not only tells how they are built but some of the thrilling stories of their builders, their successes and their failures. Special attention is given to bridges illustrating unusual engineering problems, and outstanding modern structures such as the George Washington Bridge and the two new San Francisco bridges. The book is for general readers.

HAYDEN, ARTHUR GUNDERSON

The rigid-frame bridge. Second edition. New York: John Wiley & Sons, Inc., 1940. 285 p. illus. 23 cm. \$4.50. 3482

Contents: Principle of the rigid frame bridge. Indeterminacy. Theory of indeterminate analysis. Calculations. Calculations for symmetrical single-span concrete frame bridge—free-end conditions. Calculations for symmetrical single-span concrete frame bridge—fixed-end conditions. Calculations for symmetrical

single-span steel girder frame bridge. Theory and design of double-span frame bridge. The theory and design of concrete skew-frame bridge—free-end conditions. Practical points on design and construction. General notes on rigid-frame bridges. Deformeter analysis for frame bridges of high indeterminacy. Research in connection with development of design. Architecture of short-span bridges. Appendix: Live loads and unit stresses. Index.

Note: A detailed and accurate treatise, giving the engineer a good working knowledge of the application of rigid-frame construction to short-span reinforced concrete and structural steel bridges. Designers without previous training in higher structural analysis can understand and apply the principles developed.

HOOL, GEORGE ALBERT, AND W. S. KINNE, EDITORS

Movable and long-span steel bridges, compiled by a staff of specialists; editors-in-chief, George A. Hool and W. S. Kinne; revised by R. R. Zippodt and H. E. Langley. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 497 p. illus. 23 cm. \$5.00. 3483

Contents (abridged): Bascule bridges, designs and types, selection, superstructure design and erection problems. Foundations for bascule spans. Structural design of double-leaf simple-trunnion deck bascule highway bridge. Design of operating machinery. Vertical-lift bridges. Swing bridges. Continuous bridges, design and erection, stresses. Cantilever bridges. Suspension bridges. Steel arch bridges. Analysis of three-hinged arch bridges. Analysis of fixed arches. Analysis of two-hinged arches.

Note: A comprehensive reference work for the practicing engineer and student. Deals with the problems relating to the design and construction of the various types of bridges listed above. In this edition, errors have been corrected and developments since the first edition (1923) are covered in paragraphs added at the end of each section. These additions account for 27 additional pages of text. The volume contains numerous photographs illustrating the type of bridge under discussion.

MCCULLOUGH, CONDE BALCOM, AND EDWARD S. THAYER

Elastic arch bridges. New York: John Wiley & Sons, Inc., 1931. 372 p. illus. 24 cm. \$5.00. 3484

Contents: Introduction. Resume of fundamental theory. Preliminary arch design. Analysis of fixed arches. Hinged arch bridges. Multi-span arches on elastic piers. Mechanical methods of stress analysis. Arches with rigidly connected superstructure. Freyssinet and other recent European methods for stress control in elastic arch ribs. Appendix. Index.

Note: Written for engineers by engineers. The authors discuss the mathematical theory of elasticity as applied to the design of arch bridges, with special reference to recent developments in the field of arch analysis. The book includes numerous plans and diagrams, as well as photographs of famous bridges, ancient and modern. The appendix gives useful references and problems arising out of special cases of arch construction which are discussed.

STEINMAN, DAVID BERNARD

The Wichert truss. New York: D. Van Nostrand Company, Inc., 1932. 138 p. illus. 24 cm. \$2.75. 3485

Note: The Wichert truss is a type of bridge truss which has come into increasing use during the past twenty years. It consists essentially of a design that permits substantial economies in the weight of a continuous truss, and consequently offers a greater range of usefulness for that type of structure. This book gives the details of design of this continuous truss, from preliminary calculations to type details and computation of secondary stresses.

TAYLOR, FREDERICK WINSLOW, AND OTHERS

Reinforced-concrete bridges with formulas applicable to structural steel and concrete, by the late Frederick W. Taylor, Sanford E. Thompson and Edward Smulski. New York:

John Wiley & Sons, Inc., 1939. 456 p. illus. 23 cm. \$6.50. 3486

Contents: Characteristics and use of reinforced-concrete girder bridges: Clearances—live loads—impact—distribution of live loads by slabs. Formulas for concentrated truck loads. Slab bridges. Deck girder bridges. Through girder bridges. Cantilever bridges. Description of continuous girder and multi-span frame bridges. Design of continuous girders of equal spans. Continuous girders; fixed-point method. Multi-span rigid frames; fixed point method. Special problems in rigid-frame design; fixed-point method. One-span rigid frame bridges. Flat-slab bridges. Miscellaneous general details. Abutments and piers. Index.

Note: The prime object of this book is to furnish complete information for logical design of bridges other than trusses and arches. It offers a comprehensive treatment of slab bridges, simple deck and through girder bridges, cantilever and continuous girder bridges, rigid frames, and flat-slab bridges. The treatment includes discussion of the relative economy and usefulness of these types for different conditions and also the procedure to be followed in developing a design best fitted for any specific requirement.

Tunnels

BLACK, ARCHIBALD

The story of tunnels. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1937. 245 p. illus. 23 cm. \$2.75. 3487

Contents (abridged): Tunnels of the ancients. Through the Dark Ages to the canals. The first "shield" tunnels. Tunneling the Alps. The subway era begins. The renaissance of water tunnels. The first Hudson tunnel. Paris "Metro" and the Berlin "El-Bahn." New York and Philadelphia subways. Tunneling for power and irrigation. The first "trench" tunnels. Pacific Coast aqueducts. The Holland tunnel sets a pattern. Queensway—the largest underwater tunnel. Moscow builds a subway. Index.

Note: A treatment of the subject for the non-professional reader. It describes the making of the great railroad tunnels, such as the Simplon, the Moffat, and others all over the world, and also the outstanding subway systems, water-supply, highway, and irrigation tunnels. All types of tunnels are included, and the author traces the development of the art of tunnel-building from the earliest times.

RICHARDSON, HAROLD WARD, AND ROBERT S. MAYO

Practical tunnel driving. New York: McGraw-Hill Book Company, Inc., 1941. 436 p. illus. 23 cm. \$5.00. 3488

Contents: History of tunneling. Engineering and design. Tunnel surveying. Safety in tunneling. Shaft sinking. Mucking. Tunnel haulage. Hoists and headframes. Ventilation and dust control. Pumping and water handling. Plant and utilities. Soft-ground tunneling with timber. Soft-ground tunneling with liner plates. Shield-driven tunnels. The shield. The plenum process. Air locks. Tunneling in rock. Drills and drilling. Explosives. Ground support in rock tunnels. Concrete lining. Tunnels in exceptional ground. Pipe jacking.

Note: A practical text and reference treatment for engineers and contractors, covering all phases of tunneling and all kinds and classes of tunnels, large or small, constructed in soft ground or hard. Carries through all steps from basic fundamentals to completion of the project, including discussion not only of location, investigation and planning of the project, design, construction, and economics, but also of such practical details as track layout, size of cars, timbering, explosives, etc.

Road Building

AGG, THOMAS RADFORD

The construction of roads and pavements. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1940. 483 p. illus. 23 cm. \$4.00. 3489

Contents: Administration and finance. Surveys and plans for roads and pavements. Drainage and control of erosion. Soil as a highway material. Economics of highway grades. The design of

rural highways. The design of streets. Ordinary and treated earth roads. Sand-clay, topsoil, and gravel roads. Water-bound macadam. Road slabs of concrete. Portland-cement concrete roads and pavements. Vitrified brick pavements. Bituminous road and pavement materials. Dust-laying treatments and bituminous carpets. Penetration macadam and bituminous concrete. Sheet asphalt. Economics of highway transportation. Selection of type of roadway surface.

Note: This standard text, suitable for undergraduate engineering students, has been largely revised and rewritten since the 1929 edition. The chapters have been rearranged and new material introduced relating to design, concrete slabs, and highway economics. A new chapter dealing with soils engineering, as it relates to highway construction, has been added, and the principles of road-surface stabilization are now discussed in detail. There is a short list of references at the end of chapter one.

ASPHALT INSTITUTE

Construction specifications. New York: The Asphalt Institute, 1943. 263 p. illus. 18 cm. \$0.45. 3489a

Contents: Surface treatment. Road-mix. Penetration macadam. Cold-laid plant-mix. Hot-laid plant-mix surfaces. Base courses. Cold-patch. Asphalt block pavement: Specifications for asphalt cement. List of Institute offices. List of member companies.

Note: General specifications, prepared by the staff of the Institute, arranged by subject and intended to serve as guides for developing more detailed specifications.

BATEMAN, JOHN HENRY

Introduction to highway engineering; a textbook for students of civil engineering. Fourth edition. New York: John Wiley and Sons, Inc., 1942. 459 p. illus. 23 cm. \$4.00. 3490

Contents: Development of highways. Highway subgrade soils. Drainage. General features of highway design. Earthwork. Bituminous materials. Theory of structural design of flexible pavements. Low-type road surfaces and foundations. Broken-stone surfaces and foundations. Bituminous surface treatments and low-cost bituminous surfaces. Theory of structural design of concrete pavements. Concrete pavements and foundations. Sheet asphalt and asphaltic concrete pavements. Rock asphalt pavements. Block pavements. Highway and street maintenance. Surveys, plans, specifications, and supervision of construction. Economics of highway improvement. Highway planning, financing, and administration. Appendixes: Determination of street intersection elevations. Tables for determining volume of earthwork. Problems. Index.

Note: An introductory book, placing emphasis on fundamental principles and processes in the practice of highway engineering. Details of the design, construction, and maintenance of various highway types are included, together with a discussion of surfaces, plans, specifications, economics, planning, financing, and administration. The fourth edition includes the following changes: the material on roadside development, the properties of bituminous materials, and the stabilization of subgrades with soil-cement mixtures has been expanded; the chapter on sheet-asphalt and asphaltic-concrete pavements has been revised to present the subjects of proportioning and control of asphalt paving mixtures in a more effective manner; the subject matter dealing with the structural design of pavements has been greatly expanded.

BRUCE, ARTHUR GARFIELD

Highway design and construction. Second edition. Scranton, Pa.: International Textbook Company, 1937. 646 p. illus. 21 cm. (International texts in civil engineering, C. E. O'Rourke, consulting editor) \$4.00. 3491

Contents (abridged): Highway locations. Design of roads. Grading. Highway drainage. Soil studies. Materials for low-cost roads. Treatments of natural subgrade. Bituminous surface treatments. Road-mixed and plant-mixed bituminous surfacings. Bituminous-macadam roads. Cement-bound macadam pavements. Portland-cement concrete pavements. Hot-mix bituminous pavements. Cold-laid bituminous pavements. Brick pavements. Miscellaneous block pavements. Sidewalks, curbs and gutters. Guard rails, signs, and markers. Roadside development and lighting. Comparison of costs of various surfaces. Street cleaning and snow removal. Landing fields and runways for airports. Index.

Note: A text and reference book for students of highway en-

gineering and for practicing engineers. Fundamental principles and theory are stressed rather than a variety of detailed facts. Intentionally omitted are detailed instructions for field and office work which may be found in instruction manuals of almost all state highway departments. Bibliographies are given at the end of each chapter. The second edition covers the advances in highway engineering practice between 1934 and 1937 and contains minor textual changes such as the inclusion of questions and problems.

GILLETTE, HALBERT POWERS, AND JOHN C. BLACK

Road and street construction methods and costs. Chicago: Gillette Publishing Company, 1940. 607 p. illus. 23 cm. \$6.00. 3491a

Contents: Introduction. Cost indexes. Overhead costs. Engineering. Right-of-way. Equipment. Labor. Clearing and grubbing. Grading. Hauling and handling materials. Production of aggregates. Untreated bases and surfaces. Stabilization of bases and surfaces. Bituminous surfaces and bases. Concrete surfaces and bases. Brick pavements. Sidewalks, curbs and gutters. Walls, fences and guard rails. Bridges and culverts. Tunnel construction. Grass, trees and shrubs. Miscellaneous. Index.

Note: A compilation of data gathered chiefly from American engineering periodicals. The purpose of the work is to give statements of costs in some detail on a large variety of construction projects classified under the headings shown in the contents above. Some incidental information is included on construction methods, especially methods used where unusual conditions were encountered. The book is included here because since references are given to original sources, it serves as a fair bibliography of recent American literature on road and street construction.

HEWES, LAURENCE ILSLEY

American highway practice. New York: John Wiley & Sons, Inc., 1941-42. 2 v. illus. 23 cm. Vol. I, \$5.00; Vol. II, \$6.00. 3492

Contents: Volume I. Highway location. Design of roadway. Grading the roadbed. Highway landscape. Sand-clay and stabilized roads. Macadam roads. Gravel and fine-crushed rock roads. Intermediate bituminous surfacings. Appendixes. Index. Volume II. Penetration macadam. Sheet asphalt. Asphaltic or bituminous concrete. Construction of Portland-cement concrete roads. Design of cement concrete pavement mixtures. Design of concrete road slabs. Brick roads. Miscellaneous structures. Appendixes. Index.

Note: These books provide detailed discussion of both theory and practice of highway location, design, and construction. Enough historical background is given to show the development of each type of road surface and pavement. The results of all important research and experimentation for twenty-five years are incorporated in the discussion. Both volumes are liberally illustrated with photographs, charts, and line drawings. Tables of condensed information supplement the text.

HICKERSON, THOMAS FELIX

Highway surveying and planning. Second edition. New York: McGraw-Hill Book Company, Inc., 1936. 442 p. illus. 18 cm. \$3.50. 3493

Contents: Highway location. Earthwork. Circular curves. Simple curves. Compound and reversed curves. Parabolic curves. Transition spirals. Curve superelevation. Widening curved pavements. Miscellaneous. Tables. Index.

Note: A presentation of the problems of highway location, with emphasis on curves and earthwork, and on location and design for greater safety and permanence. It is designed for use as a field and office manual or as a textbook. The work is a revision of the author's *Highway curves and earthwork*, New York, 1926, and includes rewriting of the text and the addition of several new tables, reflecting more recent trends in highway planning and design.

IVES, HOWARD CHAPIN

Highway curves. Third edition. New York: John Wiley & Sons, Inc., 1941. 380 p. illus. 18 cm. \$4.00. 3494

Contents: Highway location. Simple curves. Compound and reversed curves. Grades and vertical curves. Spiral curves. Super-elevating or banking. Widening of curves. Cross-sections; setting slope stakes. Calculation of earthwork. Haul and the mass diagram. Observations for determination of true north. Care and

adjustments of instruments. The selection of a curve and spiral. Curbs, crowns, and grades. Traffic lanes and divided highways. Construction stakes. Miscellaneous. Tables.

Note: This field book recognizes developments that have taken place in the past decade by the addition of three chapters: one on the selection of a curve and spiral, one on curbs, crowns and grades, and one on traffic lanes and divided highways. A fourth new chapter relates to the setting of construction stakes. Mathematical tables required in road building are given as well as the theory and practice of highway curves.

UNITED STATES. PUBLIC ROADS ADMINISTRATION

Specifications for construction of roads and bridges in national forests and national parks, 1941. Washington, D.C.: Government Printing Office, 1941. 512 p. illus. 19 cm. \$1.00. 3495

Contents: Division I, General requirements and covenants: Terms of special significance and abbreviations. Bidding requirements and conditions. Award and execution of contract. Scope of contract. Control of work. Control of material. Legal relations and responsibility to the public. Prosecution and progress. Measurement and payment. Division II, Construction details: Earthwork. Base courses. Surface courses and pavements. Structures. Incidental construction. Division III, Design details: (Not included in this book). Division IV, Contract forms: Bid schedule. Index.

Note: This book contains a collection of specification items for construction of roads and bridges in national forests and national parks. It gives exact definition for all terms that may appear in these specifications or in other contract documents.

WILEY, CARROLL CARSON

Principles of highway engineering. Second edition. New York: McGraw-Hill Book Company, Inc., 1935. 542 p. illus. 23 cm. \$4.00. 3496

Contents: Introduction. Non-bituminous materials. Bituminous materials. Concrete. Drainage. Earthwork. Earth roads. Sand-clay, gravel and macadam roads. Concrete pavements and pavement bases. Block pavements. Bituminous surfaces. Accessories. Resurfacing, widening and repairs. Horizontal alinement. Vertical alinement. Width and capacity. Surveys, plans, estimates. Comparison of roadways. Finance. Operation.

Note: A concise, authoritative discussion of highway engineering principles and practice. The book follows a logical sequence of presentation rather than the chronological procedure of actual highway work. Thus materials are considered separately before taking up their combination into roads and pavements, and the latter are developed before proceeding with the broader problems of design, finance, and operation. This edition is a modernization of the book, with extensive revision and rewriting, new tables, illustrations, reading references, and problems.

Railroad Building

ALLEN, CALVIN FRANCIS

Railroad curves and earthwork. Seventh edition, revised. New York: McGraw-Hill Book Company, Inc., 1931. 235 p. illus. 17 cm. \$2.50. 3497

Contents: Reconnaissance. Preliminary survey. Location survey. Simple curves. Compound curves. Reversed curves. Parabolic curves. Turnouts. Connecting tracks and crossings. Spiral easement curve. Setting stakes for earthwork. Methods of computing earthwork. Special problems in earthwork. Earthwork tables. Earthwork diagrams. Haul. Mass diagram. Spring lining of curves. Diagrams.

Note: This work has been a standard textbook and engineers' reference book for many years. In this edition the chapter on turnouts has been extensively revised and the chapter on string lining of curves is new. A companion work is the author's *Field and office tables, especially applicable to railroads*, fourth edition, revised, New York: McGraw-Hill Book Company, Inc., 1931, 290 p., \$2.50. The two works are also sold bound together for \$4.00.

RENCH, WALTER FREEMAN

Simplified curve and switch work. Valuable and necessary information for engineers, super-

visors and foremen. Fourth edition. New York: Simmons-Boardman Publishing Company, 1930. 212 p. illus. 18 cm. U.S. and Canada, \$2.00; other countries, \$2.25. 3498

Contents: Relining of curves with a string. Preliminary study of the curve. Solution of string lining problems. Superelevation of curves. The spiral. The vertical curve. Economics of curves. Essential elements in the design of switch connections. Rules for computing switch dimensions. Rules for various functions of turnouts. Practical considerations in installing turnouts. Methods in installing and maintaining switches. Simplified field work in siding location. Special practices. Index.

Note: A handbook for railway track foremen and supervisors rather than for the engineer. Complex algebraic calculations are reduced to their simplest form and as nearly as possible to simple arithmetic. Drawings and tables supplement the text. Based on standard practice of the Pennsylvania and other railroads.

SEARLES, WILLIAM HENRY, AND HOWARD CHAPIN IVES

Field engineering; a handbook of the theory and practice of railway surveying, location and construction. Twenty-first edition, revised and enlarged by Howard Chapin Ives. New York: John Wiley & Sons, Inc., 1936. 2 v. illus. 18 cm. \$2.50, each volume. Also, two vol. in one, \$4.00. 3499

Contents (abridged): Volume I. Reconnaissance. Preliminary survey. Location survey: principles of location. Simple curves. Compound curves. Reversed curves. Turnouts and crossings. The spiral curves: the Searles spiral; the ten-chord spiral. Cross-sections. Calculation of earthwork. Earthwork tables. Earthwork diagrams. Haul and the mass diagram. Construction. Track laying. Theory of maximum economy in grades and curves. Leveling. Adjustment of instruments. String lining curves. Highway curves: curve tables. Volume II. Tables.

Note: In this edition Volume I has been enlarged by the addition of a chapter on string lining curves, furnished by Philip Kissam, Associate Professor of Civil Engineering, Princeton University. The chapter on highway curves has been entirely rewritten. Especial attention is directed to the traverse method, which is described briefly in this chapter. For this edition, state highway engineers of every state in the United States sent details of their alinement practice, hence the book covers the standard practice of all the states. Volume II, Tables, has also been increased in size, due to the addition of three new tables for use with the chapter on highway curves. Tables have also been inserted which deal with the recommended standards of the American Railway Engineering Association for frogs and switches. Offsets are given for locating the lead curves.

WEBB, WALTER LORING

Railroad construction, theory and practice; a text-book for the use of students in colleges and technical schools, and a hand-book for the use of engineers in field and office. Ninth edition, thoroughly revised and reset. New York: John Wiley & Sons, Inc., 1932. 699 p. illus. 18 cm. \$6.00. 3500

Contents: Railroad surveys. Alinement. Earthworks. Trestles. Tunnels. Culverts. Minor bridges. Ballast. Ties and other forms of rail support. Rails. Rail-fastenings. Switches and crossings. Miscellaneous structures and buildings. Yards and terminals. Block signaling. Rolling stock. Train resistance. Costs of railroads. The power of a locomotive. The promotion of railroad projects. Operating expenses. Distance. Curvature. Grade. The improvement of old lines. Stresses in track. Appendix. Index. Tables.

Note: A textbook for use in engineering colleges and technical schools and a handbook for practicing engineers. The engineering tables, formerly published as a separate volume, are now included in one binding with the main text, which covers the theory and practice of all phases of railroad construction and operation. The ninth edition incorporates improvements in methods from 1926-1932 in railroad finance, locomotive and track design, and grade methods. The "five-and-a-half-place" logarithmic tables of the previous eight editions have been replaced with the more familiar six-place tables, and a new table giving proportional parts of all trigonometric logarithmic difference has been added.

SANITARY ENGINEERING

AMERICAN WATER WORKS ASSOCIATION

Manual of water quality and treatment. New York: American Water Works Association, 1940. 294 p. illus. 24 cm. \$3.00. 3500a

Contents: Preface. Characteristics of available sources. Organisms in water. Standards of quality. Purification occurring in streams, lakes and reservoirs. Partial treatment and treatment preliminary to filtration. Coagulants and coagulation. Chlorine and other chemicals. Tastes and odors. Filtration. Chemical conditioning of waters. Treatment plant control. Bibliography. Index.

Note: Written for water purification men by specialists selected by the Committee on Water Works Practice of the American Water Works Association, the volume is an authoritative standard review of contemporary American practices. It is designed for engineers and others professionally concerned with water purification.

BABBITT, HAROLD EATON

Sewerage and sewage treatment. Fifth edition. New York: John Wiley & Sons, Inc., 1940. 648 p. illus. 23 cm. \$5.00. 3501

Contents: Introduction. Developmental and preliminary work. Quantity of sewage. Hydraulics of sewers. Design of sewer systems. Appurtenances. Materials. Design of the sewer barrel. Excavation and backfilling. Construction of sewers. Trenching and tunneling. Sewage and sludge pumping. Maintenance of sewers. Sewage treatment. Characteristics of sewage. The disposal of sewage. Screening. Sedimentation. Chemical treatment. Septic tanks and Imhoff tanks. Trickling filters. Sand filters, magnetite filters, and other filters. Activated sludge. Sludge disposal. Sludge digestion. Sludge drying and incineration. Industrial wastes. Comparison of treatment processes. Operation. Appendixes: Problems. References. Index.

Note: This book deals with the various branches of sewerage and sewage disposal, from both a theoretical and a practical point of view. In this edition drastic revision has been made in the material on sewage and sludge pumping, sewage treatment, and hydraulics. A new chapter on operation has been added. A list of references containing 381 citations and about 50 problems have been included. Other important changes to be found are: a discussion of corrosion and its prevention; methods of determination in stresses in buried pipe, and simplified methods for arch analysis; rearrangement of chapters on construction; electric motor selection, hydraulics of flow of sludge, stream pollution control, deoxygenation, reoxygenation, two-stage oxidation, and the oxygen balance; description of mechanical equipment in various treatment methods and devices; new chapters on chemical treatment; high rate trickling filters; magnetite filters; sludge index measurement; bio-flocculation; stage and tapered aeration.

BABBITT, HAROLD EATON, AND JAMES J. DO- LAND

Water supply engineering. Third edition. New York: McGraw-Hill Book Company, Inc., 1939. 690 p. illus. 23 cm. \$6.00. 3502

Contents: Introduction. Finances. Hydraulics. Rainfall and run-off. Consumption of water. Ground water. Location and construction of wells, dams and impounding reservoirs. Intakes and aqueducts. Steam power. Steam pumping machinery. The utilization of electricity. Miscellaneous engines and pumps. Centrifugal pumps. Well pumps. Pumping station equipment. Materials, pipes and fittings. Design of distribution systems. Distributing reservoirs. Construction and maintenance of distribution systems. Sanitation. Quality of water. Quality of natural water supplies. Purification of water sedimentation. The design and operation of slow-sand filters. The design and operation of rapid-sand filters. Miscellaneous methods of water purification.

Note: A comprehensive textbook on the promotion, design, construction, and operation of waterworks systems.

BAYLIS, JOHN ROBERT

Elimination of taste and odor in water. New York: McGraw-Hill Book Company, Inc., 1935. 392 p. illus. 23 cm. (Engineering Societies monographs, Harrison W. Craver, consulting editor) \$5.00. 3503

Contents: Tastes and odors—characteristics and methods of evaluation. Charcoal and activated carbon. Characteristics of activated carbon. Experiments on the use of powdered activated carbon for taste and odor removal. Practical uses of powdered activated carbon in water treatment. Beds of granular carbon. Tests for activated carbon. Procedure for making quantitative phenol determinations. The reliability of the phenol test for evaluating carbon. Ammonia-chlorine treatment. Ammonia-chlorine treatment for taste prevention. Superchlorination followed by dechlorination for taste and odor removal. Aeration. Ozone—potassium permanganate—bleaching clays.

Note: A treatise on taste and odor elimination processes, directed both to the practical water treatment plant operator and the student of sanitation.

EHLERS, VICTOR MARCUS, AND ERNEST W. STEEL

Municipal and rural sanitation. Third edition. 1927
New York: McGraw-Hill Book Company, Inc., 1943. 449 p. illus. 23 cm. \$4.00. 3504

Contents: Communicable diseases. Principles of excreta disposal. Excreta disposal without water carriage. Excreta disposal with water carriage. General characteristics of water. Treatment of water. Protection of water supplies. Refuse collection. Refuse disposal. Mosquito characteristics. Mosquito control methods. Fly control. Rodent control. Milk sanitation. Food sanitation. Plumbing. Ventilation and air conditioning. Light. Housing. School sanitation. Industrial hygiene. Tourist camps. Swimming-pool sanitation. Miscellaneous. Disinfection. Vital statistics. Public health organizations. Appendixes. Index.

Note: A thorough treatment of municipal and rural sanitation. The third edition contains new material on food sanitation, ventilation and air conditioning, industrial hygiene and housing, etc.

ELDRIDGE, EDWARD FRANKLIN

Industrial waste treatment practice. New York: McGraw-Hill Book Company, Inc., 1942. 401 p. illus. 23 cm. \$5.00. 3505

Contents: Introduction. Stream pollution. Characteristics of industrial wastes. Standard treatment methods, structures and equipment. Wastes from the beet-sugar industry. Milk-products-factory wastes. Canning-factory wastes. Tannery wastes. Pulp- and paper-mill wastes. Textile wastes. Meat-packing and slaughter-house wastes. Laundry wastes. Wastes from the metal industries. Gas and coke-plant wastes, and other phenolic wastes. Wastes from fermentation industries. Wastes from oil fields and refineries. Treatment of combined industrial waste and domestic sewage. Methods of analysis for industrial wastes.

Note: A practical guidebook for chemical and sanitary engineers and industrial executives. Information is given regarding structure capacities and unit loadings to aid the engineer in the construction of suitable treatment plants.

FOLWELL, AMORY PRESCOTT

Sewerage; the designing, constructing and maintaining of sewerage systems and sewage treatment plants. Eleventh edition. New York: John Wiley & Sons, Inc., 1936. 412 p. illus. 23 cm. \$4.50. 3506

Contents: Part I, Sewerage systems: General outline of subject. Amount of sanitary sewage. Amount of storm sewage. Flow in sewers. Flushing and ventilating. Sewer appurtenances. Collecting the data. Designing. Detail plans. Supervision of construction. Cor truction. Maintenance. Part II, Sewage disposal: Principles and definitions. Composition of sewage. Disposal by dilution. Removing suspended matter. Oxidizing methods. Sludge digestion and gas utilization. Final disposition of sewage solids. Chemical and mechanical aids. Other treatment methods. Selecting disposal methods. Index.

Note: Recent developments in the science of sewerage are dealt with in this comprehensive book which covers the biological, chemical, and mechanical aspects of the subject. A special chapter has been added, devoted to equipment for use in sewage treatment processes. Recent data have been introduced relative to rainfall, anticipated population of cities, sewer design, and other related subjects.

HARDENBERGH, WILLIAM ANDREW

Sewerage and sewage treatment. Second edition. Scranton, Pa.: International Textbook Company, 1942. 454 p. illus. 21 cm. (International texts in civil engineering, C. E. O'Rourke, consulting editor) \$4.00. 3507 ✓

Contents: Introduction. Hydraulics of sewers. Pipe sewers. Sewers built in place. Sewer appurtenances. Miscellaneous features of sewerage systems. Planning of sewerage systems. Design of storm and combined sewers. Pumping of sewers. Construction of sewers. Records and estimates. Fundamentals of sewage treatment. Dilution and irrigation. Grit removal and screening. Sedimentation. Chemical treatment of sewage. Activated-sludge process. Secondary treatment of sewage. Sludge digestion and disposal. Chlorination of sewage. Industrial wastes. Institutional waste treatment. Accessories and details for sewage-treatment plants. Selecting the method of treatment and designing the plant. Operation of sewage-treatment plants. Typical design of sewage-treatment plant. Index.

Note: Compared to the previous edition, this one contains more design data and an entirely rewritten and greatly expanded section on sewage treatment. The author has inserted extensive bibliographies in the latter part, which deals with sewage treatment. Although extensive changes have been made to record recent innovations, the scope and purpose of this textbook continue to be the presentation of a basic treatment. There is much material on small plant design, with attention to coverage of the chemical and mechanical methods toward which sewage treatment now tends.

HARDENBERGH, WILLIAM ANDREW

Water supply and purification. Scranton, Pa.: International Textbook Company, 1938. 458 p. illus. 21 cm. (International texts in civil engineering, C. E. O'Rourke, consulting editor) \$4.00. 3508 ✓

Contents: Planning of water supply systems. Consumption of water. Rainfall. Evaporation, percolation, and absorption. Surface water. Ground water. Storage reservoirs. Distributing reservoirs. Gravity conduits. Pipe conduits. Pipe appurtenances. Laying pipe. Planning of distribution systems. Design of continuous-flow distribution systems. Hydraulics of flow. Design of dead-end distribution system. Pumps and pumping fundamentals of water purification. Physical tests of water. Chemical analyses of water. Bacteriological examinations of water. Microscopical examinations. Screening. Sedimentation and coagulation. Filtration. Disinfection. Softening of water. Removal of iron and manganese. Control of corrosiveness. Taste and odor control. Control of fluorine. Typical design of treatment plant. Appendix. Index.

Note: Designed to aid students in application of engineering principles to water-works design; to familiarize them with methods of examining, purifying and softening water; to help them toward fuller appreciation of various factors involved in this field. Although it is prepared for engineering students, it should be of value also to engineers engaged only occasionally in this field.

HOPKINS, EDWARD SCOTT, EDITOR

Elements of sanitation, edited by Edward S. Hopkins in association with Walter D. Binger, C. Leroy Ewing, Harry A. Faber [and others]. New York: D. Van Nostrand Company, Inc., 1939. 435 p. illus. 23 cm. \$4.00. 3509

Contents: The scientific background of sanitation. The meaning and determination of pH. Water and sewage disinfection. Public water supplies. Sewage disposal. Stream pollution and trade waste disposal. Refuse disposal. The essentials of food sanitation. Milk sanitation. Ventilation and air conditioning. Swimming pool control. Environmental hygiene.

Note: This college textbook begins by explaining elementary principles of chemistry and bacteriology that are necessary to an understanding of the applications of sanitary engineering. Water supply, sewage disposal, and other important problems confronting the sanitary engineer are presented from the standpoint of the local conditions which govern the design of the particular installation. The construction and use of the major types of equipment are discussed in detail.

IMHOFF, KARL, AND GORDON MASKEW FAIR
Sewage treatment. With a discussion of industrial wastes by Edward Warren Moore. New York: John Wiley & Sons, Inc., 1940. 370 p. illus. 21 cm. \$3.00. 3510 ✓

Contents: General considerations. Composition of sewage. Screening and skimming. Sedimentation. Chemical precipitation and rapid filtration. Principles of biological treatment. Treatment on natural soil. Treatment on coarse-grained beds. The activated-sludge process. Chlorination. Sewage sludge. Sludge digestion. Sludge gas and its utilization. Sludge treatment, disposal, and utilization. Water-carried wastes from unsewered habitations and industrial establishments. Origin and treatment of common industrial wastes. Self-purification of receiving waters. Disposal of sewage in receiving waters. Sample calculations. Reading list. Abbreviations. Symbols. Weights and measures. Index.

Note: Discusses modern practice in the design of sewage-treatment plants, including the problem of industrial wastes. Generalized design and operating values are given for each type of treatment plant, and tables and diagrams are included as an aid in making calculations.

KEEFER, CLARENCE EDWARD

Sewage-treatment works; administration and operation. New York: McGraw-Hill Book Company, Inc., 1940. 673 p. illus. 23 cm. \$6.00. 3511 ✓

Contents: Administration and control of sewage-treatment works. Quantity and character of sewage. Elements of sewage analysis. Biochemistry of sewage. Composition of sewage. Screens. Grit chambers. Skimming tanks. Plain sedimentation. Chemical precipitation. Sludge digestion. Septic and Imhoff tanks. Separate sludge-digestion tanks. Gas collection and utilization. Land treatment of sewage. Intermittent sand filters. Contact beds. Trickling filters. Automatic dosing equipment. Activated-sludge process. Disposal of sewage effluents. Chlorination. Sludge dewatering. Utilization and disposal of sludge. Odor control. Pumps and pumping stations. Measuring equipment. Miscellaneous equipment and supplies. Health and safety at sewage works. Sewage-plant beautification. Sewage-plant records. Cost of sewage treatment.

Note: A thorough, practical discussion of the administration and operation of sewage plants, emphasizing treatment processes that are widely used. It describes the various types of modern equipment, tells how they perform, outlines operating methods, and discusses costs of operation. Quantity and composition of sewage from institutions, municipalities, and industrial plants are also given.

MASON, WILLIAM PITT, AND ARTHUR M. BUSWELL

Examination of water, chemical and bacteriological. Sixth edition, revised by A. M. Buswell. New York: John Wiley and Sons, Inc., 1931. 224 p. illus. 23 cm. \$3.00. 3512 ✓

Contents: Introductory. Directions for taking a water sample. Routine laboratory methods for the estimation of mineral constituents. Laboratory exercises in water treatment. Bacteriological examination of water. Appendices. Index.

Note: A textbook for the undergraduate student of sanitary engineering, which discusses the methods of determining the mineral content of water and the technique of the bacteriological examination of municipal water systems. A knowledge of quantitative analysis is assumed. The sixth edition contains additional analytical procedures, such as methods for the determination of pH and free chlorine, and a discussion of the losses due to hard water in boilers and pipes.

Sanitary Engineering

3513-3519

METCALF, LEONARD, AND HARRISON P. EDDY
American sewerage practice. Third edition revised by Harrison P. Eddy. New York: McGraw-Hill Book Company, Inc., 1915-35. 3 v. illus. 23 cm. Vol. I, \$7.00; Vol. II, \$5.00; Vol. III, \$7.00. 3513✓

Contents (abridged): Volume I, Design of sewers: The general arrangement of sewerage systems. Hydraulics: Flow of water and sewage. Quantity of sewage. Separate sewers. Precipitation. Storm drains and combined sewers. Gaging storm-water flow in sewers. Sewer pipe. Masonry sewers. The analysis of stresses in sewer sections. Catchbasins and manholes. Regulators. Ventilation. Pumps and pumping stations. Index. Volume II, Construction of sewers: Engineering work and inspection during construction. Excavation. Machinery for trench excavation. Methods of rock excavation. Explosives and blasting. The sheeting and bracing of trenches and tunnels. Purchasing, handling and laying sewer pipe. Construction of brick and block sewers. Construction of concrete sewers. Contracts, specifications and drawings. Operation and maintenance of sewerage systems. Index. Volume III, Disposal of sewage: Characteristics and behavior of sewage. Elements of sewage analysis. Composition of municipal sewage. Pollution and self-purification of natural waters. Sewage disposal by dilution. Sewage disposal by irrigation. Racks and screens. Grit chambers, skimming tanks. Sedimentation. Chemical precipitation. Septic tanks. Contact beds. Disposal of industrial wastes. Operation and maintenance of sewage and treatment plants. Index.

Note: A current set of this work comprises the following: Volume I, second edition, 1928; Volume II, first edition, 1915; Volume III, third edition, 1935. A textbook and reference book covering the more important principles of theory and rules of practice in the design, construction, and operation of sewerage systems. The book represents the result of many years of practice by the authors and contains data from the work of other engineers as well. The second edition of Vol. I incorporates advances in sewer design from 1914-1928. Vol. III, third edition, contains much newer material on sewage treatment, particularly on the activated-sludge process and on mechanical aeration, the utilization of sludge gas, and other current practices. Bibliographies have also been added to each chapter.

METCALF, LEONARD, AND HARRISON P. EDDY
Sewage and sewage disposal; a textbook. Second edition revised by Harrison P. Eddy. New York: McGraw-Hill Book Company, Inc., 1930. 783 p. illus. 23 cm. \$6.00. 3514✓

Contents: General features of sewerage and sewerage treatment works. Quantity of sewerage. Quantity of storm water. Hydraulics of sewers. Sewer appurtenances and special structures. Preliminary investigations, surveying, inspection and excavation. Sheet piling and bracing of trenches. Pipe brick and concrete sewers. Chemical and biological characteristics of sewers. Sewage disposal by dilution. Grit chambers, racks and screens. Sedimentation and septic tanks; chemical precipitation. The Imhoff or Emscher tank. Activated sludge. Sludge. Contact bed. Trickling filters. Intermittent sand filters. Disinfection of sewage and sewage effluents. Irrigation with sewage. Cost estimating.

Note: A single-volume treatment written out of the authors' three-volume treatise, *American sewerage practice*, described above. It presents that information which the authors consider it desirable for the student to acquire before taking up work in this field.

NORCOM, GEORGE DUSENBURY, AND KENNETH W. BROWN

Water purification for plant operators. New York: McGraw-Hill Book Company, Inc., 1942. 180 p. illus. 23 cm. \$2.50. 3515✓

Contents: Modern water-supply requirements. Methods of water purification. Slow sand filtration. Treatment preliminary to rapid sand filtration. Rapid sand filtration. The operation of rapid sand filters. Causes and correction of filter troubles. Water softening. Removal of iron and manganese. Chlorination. Operating records. Care of plant, equipment, and appurtenances. Supplementary methods of water treatment. Laboratory control of plant operation. Water-supply sanitation.

Note: An instruction manual for filter plant operators to aid them in the performance of their routine duties and to make plain all procedures which they must employ. Based on many

years experience in water supply engineering, it fully describes structures and equipment used in water purification and gives complete operating methods. The book can be readily understood and assimilated by operators who have not had a technical education.

PAYROW, HARRY GORDON

Sanitary engineering; water supply, sewerage, water and sewage treatment. Scranton: International Textbook Company, 1941. 483 p. illus. 21 cm. (International texts in civil engineering) \$4.00. 3516 ?

Contents: Introduction. Hydraulics of water supply. Stream flow. Methods of measuring and estimating stream flow. Reservoirs and dams. Ground water. Water consumption. Water intakes and distribution systems. Pumping water. Water treatment. Sewerage and sewage. Quantity of sewage and storm water. Sewer shapes and materials. The sewage system. The engineer and construction. Characteristics of sewage. Sewage disposal and sewage treatment. Sedimentation and chemical precipitation. Oxidizing processes. Sludge treatment and disposal. Industrial waste. Sewage plant operation. Index.

Note: Covering the general field of sanitary engineering as applied to water and sewage, this is a concise textbook for civil and chemical engineers, and an introductory work for sanitary engineering students. The work contains many problems and numerous illustrations showing clearly details of construction and operation of equipment.

PHELPS, EARLE BERNARD

Stream sanitation; with a chapter on stream microbiology, by James B. Lackey. New York: John Wiley and Sons, Inc., 1944. 276 p. illus. 22 cm. \$3.25. 3517 Eng.

Contents: The life history of a stream. Biology of growth and decay. Aerobic decomposition—oxidation. Anaerobic decomposition—digestion. The oxygen balance. Public health aspects—bacterial pollution. Stream microbiology. Index.

Note: A discussion of the manner in which streams, serving various types of communities, become polluted, the forms and tests of pollution, and the natural and artificial means of purification. The book is of interest to public health officials, sanitary engineers, and persons concerned with the conservation of natural resources.

RYAN, WILLIAM JOHN

Water treatment and purification. New York: McGraw-Hill Book Company, Inc., 1937. 242 p. illus. 21 cm. \$2.50. 3518 ✓ 628-16 1995m

Contents: The impurities in water. Sedimentation and coagulation. Filtration. The analysis of water. The lime and soda-ash process. The zeolite softener. Boiler feed water treatment; general considerations; methods used. Disinfection of water. Tastes and odors. Miscellaneous treatments. Prevention of corrosion.

Note: Makes available to engineers, plant managers, students, and technical men a description, in simplest possible language, of the several purification and other processes that are applied to water, both potable and boiler feed. Chemical reactions occurring in the treatments are given, and the construction and operation of the different types of filtering, softening, and treating apparatus are described and illustrated. Selected references are appended to most of the chapters.

STEEL, ERNEST WILLIAM

Water supply and sewerage. New York: McGraw-Hill Book Company, Inc., 1938. 653 p. illus. 23 cm. \$5.00. 3519✓

Contents: Introduction. Quantity of water and sewage. Rain-fall and runoff. Ground water. Conveyance of water; materials used. Conveyance of water; collection and distribution. Pumps and pumping stations. Quality of water supplies. Self-purification of streams. Treatment of water; sedimentation and coagulation. Treatment of water; the rapid sand filter. Treatment of water; the slow sand filter. Miscellaneous water treatment methods. Sewerage; definitions and general considerations. Amount of storm sewage. Sewer pipes. Flow in sewers. Sewer appurtenances. Design of sewer systems. Sewer construction. Maintenance of sewers. Characteristics of sewage. Sewage disposal. Screens and

skimming tanks. Sedimentation of sewage. Sewage filtration. Activated sludge. Sludge treatment and disposal. Miscellaneous sewage treatment problems. Financing and management.

Note: A compact engineering treatment of the fundamentals of the design and operation of water works and sewerage works. By careful combination of related topics a great deal of ground is covered and the reader is given not only the methods of designing and constructing water distribution systems, treatment plants, sewage disposal systems, etc., but also a discussion of important public health and economic aspects of the subject.

THEROUX, FRANK RICHARD, AND OTHERS

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Laboratory manual for chemical and bacterial analysis of water and sewage, by Frank R. Theroux, Edward F. Eldridge, and W. LeRoy Mallmann. Third edition, revised and enlarged. New York: McGraw-Hill Book Company, Inc., 1943. 274 p. illus. 21 cm. \$3.00. 3520 ✓

Contents (abridged): Methods of chemical analysis. Preparation of reagents and standard solutions. General discussion of chemistry and related topics. Sampling. Procedures. Preparation of mediums and solutions. General discussion of bacteriology. Index.

Note: A manual for the sanitary engineer and those engaged in water and sewage treatment plant operation. In this edition both the chemical and bacteriological sections have been rewritten to incorporate newer methods, and there is a new section dealing with tests for boiler waters. Some of the tests described are designed for plant and field use where a minimum of equipment and trained personnel is available; other procedures are intended for the laboratory with complete equipment.

TURNAURE, FREDERICK EUGENE, AND H. L. RUSSELL

600
Public water supplies; requirements, resources, and the construction of works. Chapters VIII, IX, X on quality of water supplies, by M. Starr Nichols. Fourth edition, revised. New York: John Wiley & Sons, Inc., 1940. 704 p. illus. 23 cm. \$6.00. 3521 ✓

Contents: Introduction. Quantity of water required. Sources of supply. The rainfall. Evaporation and percolation. Flow of streams. Ground water. Drinking water, health, and disease. Laboratory examination of water and interpretation of results. Quality of natural waters. Generalities pertaining to water-works construction. Hydraulics. River and lake intakes. Works for the collection of ground water. Impounding reservoirs. Earthen dams. Masonry dams. Timber dams; rock-fill dams; steel dams. Objects and methods of purification. Sedimentation and coagulation. Slow sand filtration. Rapid sand filtration. Miscellaneous purification processes. Pipes for conveying water. Conduits and pipe lines. Pumping machinery. Distributing and equalizing reservoirs. The distributing system. Operation and maintenance. Index.

Note: This book presents data on all phases of water-works engineering, with treatment of the developments which have been made in recent years. In this edition information has been added on maximum values, in the chapters on rainfall and flow of

streams; the application of soil mechanics is discussed in the chapter on earth dams; additional data on masonry pressures and theory of arch dams are given in the chapter on masonry dams. Modern information on concrete pipes and aqueducts and the various pipe linings is included, and in the chapter on hydraulics additional material on flow through pipes replaces some of the data formerly given on weirs.

WATERMAN, EARLE LYTTON

Elements of water supply engineering. Second edition. New York: John Wiley & Sons, Inc., 1938. 329 p. illus. 24 cm. \$3.50. 3522 ✓

Contents: Introduction. Requirements of municipal water supply. Quantity of water required. Quality requirements. Examinations of water to determine its quality. Bacteriological examination. Physical examination. Chemical examination. Microscopic examination. Sources of water supply. Precipitation. Ground waters. The collection of ground waters. Stream flow. Impounding reservoirs. Dams. Earthen dams. River and lake intakes. Transportation of water. Tunnels. Pipe lines. Pumps and pumping plants; centrifugal pumps. The treatment of water. Sedimentation, aided by coagulation. Filtration of water. Slow sand filtration. Rapid sand filtration. The removal of dissolved impurities. Aeration. Taste and odor control. Iron and manganese removal. Water softening. Chlorination of water. Distribution systems. Distribution storage. Structural features of the distribution system. Operation and maintenance of water works systems. Water works finance. Problems. Index.

Note: This book for engineering students and junior engineers has been completely revised and expanded to include recent developments in water supply engineering. New material is added in this edition on such subjects as the Proctor method used in the design and construction of rolled-fill earthen dams; the Hardy Cross method of analyzing the flow in distribution pipe networks; mechanical equipment for water-treatment plants; and the use of activated carbon for the control of tastes and odors in water supplies. Problems have been added at the end of the book.

WRIGHT, FORREST BLYTHE

Rural water supply and sanitation. New York: John Wiley and Sons, Inc., 1939. 288 p. illus. 21 cm. (Wiley farm series, edited by A. K. Getman and C. E. Ladd) \$2.50. 3522a ✓

Contents: Part I, Twenty-four practical jobs. Part II, Nature and sources of water. Pumps—principles of operation and types. Types of water systems. Typical installations of gravity and hydropneumatic systems. Problems of installation of water systems. Farm plumbing systems. Farm sewage-disposal systems. Bibliography. Index.

Note: This book offers a practical discussion, with instruction on the more common jobs connected with water supply, sewage disposal, plumbing, and sanitation for rural homes and farms. The content is divided into two parts. The first consists of a series of practical jobs arranged in an order of increasing complexity. Part II comprises seven chapters of subject matter dealing with water supply, sewage disposal, and sanitation. References to the related subject matter in Part II are given at the beginning of the jobs.

MECHANICAL ENGINEERING

General

CHASE, HERBERT, EDITOR

Handbook on designing for quantity production. New York: McGraw-Hill Book Company, Inc., 1944. 517 p. illus. 22 cm. \$5.00. 3523

Contents: Design of die castings. Design of sand castings for quantity production. Design of screw machine products. Design of stampings. Design of die-forged products for quantity production. Notes on and accomplishments in hot heading. Notes on the design of cold-headed parts. Design of plastic moldings for economical quantity production. Die cast or sand cast? Die cast or screw machine products? Permanent-mold and die castings compared. Which type of non-ferrous casting? Die cast or stamped? Cold-headed or screw-machine products? Die castings and plastic moldings compared.

Note: Written by seven authorities, this book gives hundreds of rules for designing metal or plastic parts for quantity production, contains pages of useful pointers on comparative advantages, limitations, and relative costs of the differently designed products, and gives information on designing for the high production processes of stamping, sand casting, die casting, screw machine, die forging, hot and cold heading, and plastic molding.

**GAY, CHARLES MERRICK, AND CHARLES DE VAN
FAWCETT**

Mechanical and electrical equipment for buildings. New York: John Wiley and Sons, Inc., 1935. 429 p. illus. 23 cm. \$5.00. 3524

Contents: Section I, Water supply: Sources. Water supply equipment. Design of water supply. Hot water design and equipment. Installation of water supply. Section II, Plumbing and drainage: Plumbing. Plumbing fixtures and sewage disposal. Section III, Heating and air conditioning: Heat and heat losses. Warm air furnace heating. Steam heating. Hot water heating. Radiators, piping, boilers and fuel. Air conditioning. Section IV, Electrical equipment: Electrical materials and methods of installation. Principles of electrical design. Wiring systems. Electrical machinery. Elevators. Lighting. Section V, Acoustics: Architectural acoustics. Index.

Note: A text for use in architectural and technical schools designed to acquaint the architectural student with the basic principles of mechanical and electrical engineering design. Useful also as a reference tool for practicing architects, the book presents simple and concise statements of the fundamental theories involved together with their broad applications in architectural design. Location and installation of ventilating fans, ducts, switchboards, conductors, conduits, water lines, air-vents, expansion tanks, gas piping, and other mechanical details are discussed from the standpoint of practical building design and construction.

HESSE, HERMAN CARL

Engineering tools and processes; a study of production technique. New York: D. Van Nostrand Company, Inc., 1941. 627 p. illus. 23 cm. \$4.50. 3525

Contents: Engineering materials. Engineering elements. Power transmission elements. Unit-production system measurement. Sand-casting processes. Forging and allied processes. Sheet metal working processes. Machining and surface finishing principles. Woodworking processes. Drilling and allied processes. Lathe processes. Single-point tool machining processes. Milling processes. Surface finishing processes. Welding and allied processes. Miscellaneous unit-production system processes. Mass-production

system measurement. Production casting processes. Appendix. Index.

Note: This textbook combines the material usually covered in the college shop course, with discussions of the techniques and operations of mass production. It teaches the student the facts and methods about the basic shop processes which are taught to every mechanical engineer, and it correlates with these discussions the further developments which have produced the mass production industries. The operating principles of each machine are shown by specially prepared diagrams, and in several instances the illustrations are grouped in series to demonstrate the operational sequence in a particular process.

KENT, WILLIAM

Kent's mechanical engineers' handbook. Founded by the late William Kent. Eleventh edition, rewritten by Robert Thurston Kent, editor-in-chief, with the collaboration of a staff of specialists. New York: John Wiley & Sons, Inc., 1936. 2 v. illus. 22 cm. (Wiley engineering handbook series. Vols. II-III) \$5.00 each volume. 3526

Contents: Power volume: Air. Water. Heat. Combustion and fuels. Steam. The steam boiler. The steam engine. The steam turbine. Condensing and cooling equipment. Refrigeration and ice making. Heating, ventilating and air conditioning. Internal combustion engines. Gas producers. Transportation. Electric power. Power test codes. Mathematical tables. Index. Design and shop practice volume: General properties of materials. Iron and steel. Corrosion and corrosion-resistant metals. Non-ferrous metals and alloys. Non-metallic materials. Fabricated materials. Strength of materials. Mechanism and mechanics. Fastenings. Mechanical springs. Rotating members. Keys, cotters, pins, tapers, and fits. Bearings. Gearing. Control mechanism. Vibration and noise. Structures and buildings. Industrial heating processes. Forging practice. Foundry practice. The machine shop. Woodworking. Materials handling. Mechanical power transmission. Electric motors and their control. Miscellaneous shop equipment. Safety engineering. Mathematical and other tables. Index.

Note: In its eleventh edition, this book is entirely rewritten and modernized. The important improvements in mechanical engineering knowledge and practice for the past few years are incorporated, and obsolete material is eliminated. All data basic to the various branches of engineering (i.e., mathematics, physics, and chemistry) have been removed to Volume I of the series, Eshbach's *Handbook of engineering fundamentals* (see Index). This change has provided room for an expanded treatment of the specialized topics of mechanical engineering. The subject matter has been logically divided into two parts, each filling a volume by itself, and each covering one of the two major fields of mechanical engineering.

MARKS, LIONEL SIMEON, EDITOR

Mechanical engineers' handbook. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1941. 2274 p. illus. 18 cm. \$7.00. 3527

Contents (abridged): List of sections and contributors. Mathematical tables and weights and measures. Mathematics. Mechanics of solids and liquids. Heat. Strength of materials. Materials of engineering. Fuels and furnaces. Machine elements. Power generation. Hoisting and conveying. Transportation. Building construction and equipment. Machine-shop practice. Pumps and compressors. Electrical engineering. Engineering measurements. Mechanical refrigeration. Index.

Note: A reference handbook for the practicing engineer and the student covering the entire field of mechanical engineering,

representing the work of fifty contributors regarded as specialists in their particular fields. Engineering data are presented in tabular form, while fundamental theory and current practices are explained under each section. The fourth edition contains new material on the theory of models, plastic behavior of materials, stress concentration, creep, packings, wind pressure on structures, automatic control of processes, and powder metallurgy. The condensed statements of the A.S.M.E. Power Test Codes have been omitted from this edition.

OBERG, ERIK, AND F. D. JONES, EDITORS

Machinery's Handbook for machine shop and drafting-room; a reference book on machine design and shop practice for the mechanical engineer, draftsman, toolmaker, and machinist. Edited by Erik Oberg and F. D. Jones. Twelfth edition. New York: The Industrial Press, 1944. 1815 p. illus. (part col.) 18 cm. \$6.00 plus foreign postage. 3528

Contents (abridged): Standard mathematical tables. Fundamental mathematical principles and formulas. Fundamental formulas in theoretical mechanics. Strength of materials. Design of shafting. Plain, roller and ball bearings. Lubricants. Keys and keyways. Clutches and couplings. Cam design and cam milling. Spur, bevel, worm, and helical gearing. Planetary gearing. Ratchet gearing. Belts and pulleys. Transmission chain and chain drives. Speeds and feeds for machine tools. Tool grinding. Helical milling. Indexing. Jigs and fixtures. Grinding, polishing and lapping. Screw machine tools. Thread cutting and rolling. Tapping. Oils and compounds for machining operations. Allowances and tolerances. Gages and gaging methods. Bolts, nuts, screws, and machine details. Screw thread systems and thread measurements. Small cutting tools. Heat-treating processes. Standard steels. Welding. Properties and weights of materials. Electric motor standards and motor characteristics. Pipe and pipe fittings. Weights and measures. Standards for drawings.

Note: A standard reference book on machine design and shop practice for the mechanical engineer, draftsman, toolmaker, and machinist. The twelfth edition includes the features of earlier editions together with data on important recent developments in engineering and shop standards and in manufacturing practice. The rules, formulas, and general data are presented in readily usable form, often as tables.

SHOOP, CHARLES FRANKLIN, AND GEORGE L. TUVE

Mechanical engineering practice; a laboratory reference text. Third edition. New York: McGraw-Hill Book Company, Inc., 1941. 506 p. illus. 23 cm. \$4.00. 3529

Contents: Introduction. Mechanical measurements; methods and instruments. Laboratory exercises. Oils, friction and lubrication. The transfer of heat. Properties of gases, vapors, and mixtures. Fluid flow and fluid dynamics. Pumps and compressors. Steam power generating units and auxiliaries. Refrigeration and cooling. Internal-combustion engines.

Note: The primary purpose of this work is to provide a thorough reference text which, in addition, will serve as a manual of laboratory procedure. In the present edition increased attention is given to fundamental principles and to equations, definitions, calculations, and the interpretation of test results.

SMALLWOOD, JULIAN CHASE, AND FREDERIC W. KEATOR

Mechanical laboratory methods; the testing of instruments and machines in the mechanical engineering laboratory and in practice. Fourth edition. New York: D. Van Nostrand Company, Inc., 1931. 386 p. illus. 25 cm. \$3.50. 3530

Contents: Part I, The testing of instruments—weights and forces; Pressure thermometry. Heat of steam, calorimetry, sampling. Angular velocity. Time. Irregular areas and mean heights. Power. The engine indicator. Reducing motions. Fluid meters. Part II, The analysis of combustion—the constituents of fuels: The heat values of fuels. Products of combustion. Theoretical reactions of fuels. Calculations for exhaust gas analysis.

Specific heats. Energy and enthalpy of gases. Part III, The testing of power plant units—prime movers: Steam boilers. Auxiliary equipment. Complete plant testing. Tests of refrigerating machinery. Part IV, Miscellaneous tests—test of lubricating oils: Hygrometry. Electrical machinery. Appendices.

Note: This college textbook describes and explains the methods of testing and standardization of a wide range of engineering equipment. It includes the methods of checking and calibrating instruments used to indicate and record pressure, temperature, rate of flow of gases and vapors, engine cycles, and other important phenomena. The methods of checking boiler and combustion efficiencies cover every step in computing a thermal balance sheet, from determining the calorific value of the fuel to checking the heat lost in exhaust steam or flue gases. Finally, the mechanical tests include methods for measuring cylinder clearance, power consumption in pumps, efficiencies of prime movers, auxiliary equipment, refrigerating machinery, and other engineering equipment.

STANIAR, WILLIAM

Mechanical power transmission handbook. New York: McGraw-Hill Book Company, Inc., 1936. 488 p. illus. 23 cm. \$5.00. 3531

Contents: Power belting. Fastening of power belting. Power transmission by belting. Flat belt pulleys. Steel shafting. Bearings. Clutches, couplings, collars. Short-center driving methods. Chain driving. Mechanical transmission systems. High starting-torque devices. Infinitely variable speed control. Gear-reduction units. Lubrication of mechanical power equipment. Motors and miscellaneous data.

Note: The purpose of this book is to furnish definite information to plant superintendents, engineers, mechanical designers, draftsmen, sales engineers, and students on the selection and application of mechanical power transmission equipment. In scope, it contains engineering information so arranged that the usual search through literature furnished by manufacturers of mechanical power equipment is avoided. The recommendations for the selection, use, and installation of transmission appurtenances is based on the author's twenty years' experience in this field of engineering.

TANGERMAN, ELMER JOHN, EDITOR

Power operator's guide (1001 practical helps) A compilation of ideas, methods and tools for saving time, labor, and money in the power plant and along the line of power services. New York: McGraw-Hill Book Company, Inc., 1935. 568 p. illus. 23 cm. \$4.00. 3532

Contents: Fuels, firing, furnaces, and combustion. Feed water—handling, treating, and heating. Boilers, superheaters, soot blowers, air preheaters, blowdown. Engines. Turbines and condensers. Electricity. Oil and gas engines. Pumps. Air compressors. Gages and meters. Mechanical transmission. Bearings and lubrication. Piping, valves, and fittings. Building services—heating; ventilating; air conditioning; hot water. Refrigeration. Water power. Elevators. Tools. Miscellaneous.

Note: A selection of items which appeared in the periodical, *Power*, during the years 1928 to 1934.

Mechanism

ALBERT, CALVIN DODGE, AND F. S. ROGERS

Kinematics of machinery. New York: John Wiley & Sons, Inc., 1931. 527 p. illus. 24 cm. \$4.50. 3533

Contents: Fundamental conceptions. Transmission of motion. Analysis of plane motion. Velocity and acceleration vector diagrams. Cams, rolling curves and friction gearing. Straight and helical spur gears. Cutting of straight and helical spur gears. Straight and spiral bevel gears—cutting of bevel gears. Helical and hyperboloidal gears—cutting of helical gears. Linkwork and miscellaneous mechanisms. Belt, rope, and chain transmission. Trains of mechanism. General references. Questions and problems. Index.

Note: An advanced treatment of the relative motions and parts of mechanisms and machines for engineers and designers. In view of high-speed machinery prevalent in modern industry, the book emphasizes certain aspects of cam and gear design and in-

cludes a general method of determining the linear velocity and acceleration of any point in a mechanism and the angular velocity and acceleration of any link. Considerable attention is given to the form of mathematical developments, the convenience of the notation used, and the suitability of the illustrations, many of which are drawn to scale.

BILLINGS, JOHN HARLAND

Applied kinematics for students and mechanical designers. Second edition. New York: D. Van Nostrand Company, Inc., 1943. 320 p. illus. 23 cm. \$3.25. 3534

Contents: Motion in machines. Mechanisms and centros. Inversion in mechanisms. Parallel and straight-line mechanisms. The photograph—a device for finding velocities in mechanisms. Centro and component methods for velocity. Accelerations in mechanisms. Cams. Spur gearing. Bevel and helical gearing. Gear combinations. Flexible connectors. Miscellaneous mechanisms. Appendix. Index.

Note: This college textbook teaches the principles that govern the motion and design of machine elements, and the application of those principles to practical design problems. Extensive use has been made of graphical methods in preference to mathematical methods, although the latter have been used whenever they are necessary to clarify the subject. Pictures and diagrams of the important types of machines accompany the kinematic drawings of their basic mechanisms.

BRADFORD, LOUIS JACQUELIN, AND GEORGE L. GUILLET

Kinematics and machine design. New York: John Wiley & Sons, Inc., 1943. 357 p. illus. 20 cm. \$3.00. 3535

Contents: Part I, Kinematics of machines: General considerations. Velocities in mechanisms. Slider-crank mechanisms. Rolling contact. Cam mechanisms. Miscellaneous mechanisms. Part II, Machine design: Fundamental definitions and considerations. Friction, lubrication, and bearings. Friction clutches and brakes. Shafts and couplings. Screws and screw fastenings. Gears and gear trains. Belts and chains. Springs. Flywheels. Flat plates, cylinders, welded construction. Drafting room problems. Tables. Index.

Note: This volume is intended to train the reader quickly in the language of machine design and the standard methods of designing the ordinary machine elements, as well as in the fundamentals of kinematics. Kinematics and machine design both receive thorough treatment, without sacrifice of the essentials of either. Extensive mathematical proofs are not given.

BUCKINGHAM, EARLE

Manual of gear design. Section I: Mathematical tables. 183 p. Section II: Spur and internal gears. 168 p. Section III: Helical and spiral gears. 172 p. New York: The Industrial Press, 1937. 3 v. illus. 28 cm. \$7.00 set; or \$2.50, each section, plus foreign postage. 3536

Contents: Section I, Table of trigonometrical functions to eight decimal places and to degrees and hundredths of a degree. Converting degrees into radians. Involute functions. Table for converting minutes into decimals of a degree. Gear ratios and decimal equivalents. Factors of all numbers up to 6000. Section II, Terms and definitions. Plane trigonometry. Involute trigonometry. Spur gears—14½ degree composite system. 14½ degree full-depth involute system. 20-degree full-depth involute system. 20-degree stub involute system. Internal gear drives. Differential gears. Planetary gears. Internal gear type clutches. Backlash. Gear tooth loads. Non-metallic gears. Clock and instrument gears. Section III, Terms and definitions. Helical gear mathematics. Teeth for helical gears. Internal helical gears. Planetary drives. End thrust and bearing loads. Herringbone gears. Backlash. Speed reducers. Helical gear-tooth loads. Efficiency of helical gears. Spiral gears. Milled and hobbled spiral gears. Load capacity and efficiency.

Note: These books are for anyone who designs or produces cut gears. Formulas are accompanied by practical examples worked out in detail to show the solutions and the way each formula is actually applied in gear-designing practice. The books have been approved by the American Gear Manufacturers' Association.

BUCKINGHAM, EARLE

Principles of interchangeable manufacturing; a treatise on the basic principles involved in successful interchangeable manufacturing practice. Second edition. New York: The Industrial Press, 1941. 258 p. illus. 23 cm. \$3.00, plus foreign postage. 3537

Contents: Terms used in interchangeable manufacturing. Machine design in interchangeable manufacturing. Purpose of models. Principles in making component drawings. Practice in making component drawings. Economical production. Equipment for interchangeable manufacturing. Gages in interchangeable manufacturing. Inspection and testing. Manufacturing for selective assembly. Small quantity production. Service factor in interchangeable manufacturing.

Note: A treatise on the basic principles involved in successful interchangeable manufacturing practice in the machine and metal-working fields, covering design, tolerances, drawings, manufacturing equipment, gaging and inspection. The author has gathered the information on which this book is based from a study of many manufacturing plants, both large and small, in the United States and Canada, and every method described has been seen in successful operation. In this second edition the chapter on gages in interchangeable manufacturing has been enlarged.

COLVIN, FRED HERBERT, AND FRANK A. STANLEY

Gear cutting practice; methods of producing gears for commercial use, including Wartime data supplement. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 369 p. illus. 23 cm. \$3.00. 3538

Contents: Gears and gear cutting practice. Spur gears and circular cutters. The shaping method of cutting gears. Helical and herringbone gears. Hobs and cutters. Bevel gears. Worms and worm gears. Internal gears. Burnishing, shaving, lapping and grinding gear teeth. Heat treatment of gears. Inspection methods.

Note: A practical manual of exact data on many aspects of gear-cutting practices. The new material in this edition is all in the included supplement, which describes some of the new developments that have become important in the U.S.A. since the beginning of World War II.

CORNETET, WENDELL H., AND DANIEL W. FOX

Applied fundamentals of machines. Bloomington, Ill.: McKnight & McKnight, 1944. 323 p. illus. 25 cm. Paper, \$2.50. 3539

Contents (abridged): Properties of materials. Measurement. Precision instruments. Theory of machines. Pulley systems. Gears and gearing. Hydraulics. Elasticity. Viscosity. Surface tension. Lubrication. Solutions and emulsions. Internal combustion engines. Forces. Heat. Refrigeration. Chemistry of combustion. Petroleum.

Note: A beginner's textbook and laboratory manual suitable for use in vocational schools. The treatment is designed for students who are taking short courses in preparation for, or along with, work in industry. The work is well illustrated and is supplemented with questions for the student to answer and lists of related material.

FAIRES, VIRGIL MORING

Design of machine elements. Revised edition. New York: The Macmillan Company, 1941. 490 p. illus. 23 cm. (Engineering science series, edited by E. R. Hedrick) \$4.00. 3540

Contents: Materials and their properties. Stress analysis, simple and bending stresses. Tolerances and allowances. Fatigue and stress concentrations. Screw fastenings. Riveting and thin-shell cylinders. Shafts in torsion, keys and couplings. Flat belts and pulleys. Rope, V-belt, and chain drives. Spur and helical gearing. Bevel and worm gearing. Combined stresses, columns, and power screws. Shaft design for combined stresses. Journal and plane-surface thrust bearings. Ball and roller bearings. Springs. Brakes,

friction clutches, and friction drives. Cams. Welding. Miscellaneous problems.

Note: This introductory textbook for engineering students deals with the fundamental principles of the subject. The second edition contains new material on variable stresses and stress concentrations, additional data on the properties of materials, more details for computing stresses in welded connections, force analysis of pivoted motor drives, flywheel design, and the American Leather Belting Association rating tables. The design of all types of gearing is based on the dynamic load, and the design of thick film journal bearings is presented in accordance with hydrodynamic theory. The author and Roy M. Wingren have prepared for use with this text *Problems on the design of machine elements*, revised edition, New York: The Macmillan Company, 1941, 147 p., \$1.40.

GUILLET, GEORGE LEROY

Kinematics of machines. Fourth edition.
New York: John Wiley & Sons, Inc., 1940. 300 p.
illus. 22 cm. \$3.00. 3541

Contents: General considerations. Displacement, velocity and acceleration. Instant centers. Velocity and acceleration in plane motion. Slider-crank mechanisms. Cam mechanisms. Rolling contact. Toothed gearing. Gear trains. Flexible connectors. Miscellaneous mechanisms. Drafting-room problems. Index.

Note: Emphasis in this book is on the practical aspects of the subject. As in earlier editions, the fundamental analysis of motion in machines and useful graphical constructions are stressed, rather than purely descriptive matter. The fourth edition offers: extensive alterations in the chapter on gears, to bring it into line with present practice and to incorporate existing standards of gear manufacturers; numerous additions to the problems, not only those given at the ends of chapters but those which have been worked out and those designed for drafting-room use; inclusion of up-to-date symbols; descriptions of newer mechanical devices; and clarification of many portions of the book, in both text and illustrations.

HAM, CLARENCE WALTER, AND E. J. CRANE

Mechanics of machinery. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 476 p. illus. 23 cm. \$4.00. 3541a

Contents: Preface. Part I, Mechanism; Introductory considerations. Linkwork. Cams. Toothed gearing—spur gears. Bevel, helical, and worm gearing. Gear-tooth systems and production methods. Belts, ropes, and chains. Intermittent-motion mechanisms. Trains of mechanism. Part II, Kinematics and dynamics of machinery: Velocities in machines. Accelerations in machines. Static forces in machines. Inertia forces. Balancing of machinery. Appendix: Force analysis of a gasoline engine. Problems. Index.

Note: This is a college textbook for the study of masses, motions, and forces in machines. Its first edition was published in 1927. The second edition has been completely reset, changes in wording, arrangement, and content having been made throughout. Some material has been eliminated, new material has been included, and a large number of problems have been added. The book presupposes a knowledge of analytical mechanics, although Part I may be studied without this requirement.

HELDT, PETER MARTIN

Torque converters or transmissions, for use with combustion engines in road and rail vehicles, tractors and locomotives; mechanical, hydraulic, electric, pneumatic, differential; stepped and continuously-variable, hand-controlled, automatic and semi-automatic. Second edition. Nyack, N.Y.: P. M. Heldt, 1944. 423 p. illus. 21 cm. \$4.50. 3541b

Contents (abridged): Friction, automatic, hydraulic and over-running clutches. Toothed gearing. Sliding-gear and constant-mesh transmissions. Bearing loads in geared transmissions. Planetary, hydrostatic, inertia-type, variable-throw and pneumatic transmissions. Geared transmissions for different services.

Note: A description and explanation of the various transmission mechanisms from the early friction clutches to the automatic and power-controlled types. The text is restricted to an explanation of the operating principles of the latter, while designs of the more conventional transmissions are treated in detail. With this edition a sixteen-page appendix has been added which touches on such

topics as: determining torque-converter efficiency, efficiencies of geared transmissions, electric couplings, and methods of gear finishing. The volume is intended for the use of designing engineers and service mechanics.

HYLAND, PATRICK HENRY, AND J. B. KOMMERS

Machine design. Third edition. New York: McGraw-Hill Book Company, Inc., 1943. 562 p. illus. 23 cm. \$4.50. 3542

Contents: General considerations and procedure affecting design. Metalworking and shop processes. Materials of construction. Linkwork, instant centers, and velocity diagrams. Cams. Fundamental mechanics. Bearings, friction, and lubrication. Friction as a useful agent. Riveted joints. Screw fastenings and power screws. Shafting and shaft couplings. Keys. Toothed gears. Design of various machine elements. Machine frames. Appendix. Index.

Note: A college textbook, stressing fundamental principles rather than specific applications, arranged especially for the instructor and student. Reference material has been intentionally omitted in order to devote space to theory. A treatment of the subject of kinematics is also included as part of the text. The third edition contains new material including new problems (with answers) and new data on gears and endurance limits.

JONES, FRANKLIN DAY

Gear design simplified; a series of gear-designing charts illustrating by simple diagrams and examples the solutions of practical problems relating to spur gears, straight-tooth bevel gears, spiral-bevel gears, helical gears for parallel shaft drives, helical (spiral) gears for angular drives, herringbone gears, and worm gears. Second edition. New York: The Industrial Press, 1940. 139 p. illus. 22 cm. \$3.00, plus foreign postage. 3543

Contents: Gear-tooth standards. Spur gears—full depth teeth. Spur gears—stub teeth. Internal gearing. Bevel gears for right-angle drives. Bevel gears—acute and obtuse angles. Straight-tooth bevel gears—Gleason system. Spiral bevel gears—Gleason system. Bevel gears of parallel-depth type. Helical gears. Herringbone gears. Worm gearing. Gearing ratios and speeds. Power-transmitting capacity. Definitions of gear terms. Checking spur gears by chordal measurement. Steels for industrial gearing. Index.

Note: A book of working rules and formulas in gear design for shop men and designers. Gear problems are presented in simple chart forms, and worked-out examples of gear design illustrate the application of rules in obtaining the essential dimensions, angles, or other values. Material new in this edition includes definitions of gear terms, a table for spur gear sizes, and a discussion of steels for industrial gearing.

JONES, FRANKLIN DAY, EDITOR

Ingenious mechanisms for designers and inventors. New York: The Industrial Press, 1930-36. 2 v. illus. 23 cm. \$8.00. 3544

Contents (abridged): Cams and their applications. Special cam designs. Intermittent motions. Tripping or stop mechanisms. Reversing mechanisms for rotating parts. Overload relief mechanisms and automatic safeguards. Interlocking devices. Driving mechanisms for reciprocating parts. Reciprocating motions derived from cams, gears, levels, and special mechanisms. Quick-return motions for tool slides. Speed-changing mechanisms. Differential and straight-line motions. Hydraulic transmissions for machine tools. Automatic feeding mechanisms and hopper design. Design of magazine feeding attachments, carriers and slides. Special transmissions and over-running clutches. Self-centering pivoted levers and sliding members. Multiple-lever mechanisms. Valve diagrams. Index.

Note: The purpose of this treatise is to place before inventors and designers concise, illustrated descriptions of many of the most ingenious mechanical movements ever devised. These mechanisms have been selected because they are ingenious, and because they have stood the test of practical use. They have been used on many different classes of automatic machines. This title replaces the author's *Mechanisms and mechanical movements*, New York, 1918.

KIMBALL, DEXTER SIMPSON, AND JOHN H. BARR

Elements of machine design. Third edition, thoroughly revised and enlarged. New York: John Wiley & Sons, Inc., 1935. 476 p. illus. 23 cm. \$4.00. 3545

Contents: Introductory. Definitions and fundamental principles of machine design. The energy and force problem. Consideration of machines as a means of modifying energy. Straining actions in machine elements. Fundamental formulas for strength and stiffness. Friction, lubrication and efficiency. Constraining surfaces—thrust bearings, roller and ball bearings. Axles, shafting, and couplings. Springs. Tubes, pipes, flues, and thin plates. Riveted fastenings. Screws and screw fastenings. Keys and cotter. Machine fits—force and shrinkage fits. Toothed gearing, spur, bevel, and screw gears. Belt and rope transmission. Chains and chain transmission. Applications of friction. Friction wheels, friction brakes, and clutches. Flywheels, pulleys, and rotating disks. Machine frames and attachments. Balancing of machine parts. Index.

Note: The fundamental principles of design are explained in this book. It presupposes a knowledge of mechanism and mechanics of engineering. Illustrative numerical examples are introduced throughout the work to suggest proper treatment of practical problems in design. Revision from the second edition (1923) includes 30 pages of additional discussion of lubrication, of axles, shafts and shaft couplings, welded joints, and screws and screw fastenings, but the text remains substantially the same. Additional references have been supplied.

MALEEV, VLADIMIR LEONIDAS

Machine design. Scranton, Pa.: International Textbook Company, 1939. 579 p. illus. 23 cm. (International texts in mechanical engineering; C. F. Taylor, consulting editor) \$4.50. 3546

Contents: Introduction. Stresses in machine parts. Properties of materials. Machine design calculations. Screw fastenings. Keys, pins and cotter. Press, shrink, and friction joints. Riveted joints. Welded joints. Design of castings. Chains and ropes. Brakes. Screws for power transmission. Cylinders, heads, and cover plates. Packings and seals. Leaf springs. Helical springs. Shafts. Couplings and positive clutches. Friction clutches. Bearings with sliding contact. Bearings with rolling contact. Crankshafts. Flywheels. Belt drives. Chain drives. Friction gearing. Toothed spur gearing. Toothed bevel gearing. Worm gearing. Screw gearing. Appendixes. Index.

Note: This work takes into account the results of modern engineering research in the characteristics of engineering materials and the influence of loads and other working conditions on the stresses set up in machine parts. The author has endeavored to give a better and more complete basis for design calculations in the form of tables and diagrams containing experimental data, particularly with regard to the elastic and endurance limits of various engineering materials. In the treatment of machine design calculations, the safety factor is referred for static loads to the elastic limit or yield point, and for repeated dynamic loads to the endurance limit. The book is intended to serve as a textbook in college engineering courses as well as a reference for practicing engineers.

NORDENHOLT, GEORGE FRED, AND OTHERS

Handbook of mechanical design, by George F. Nordenholt, Joseph Kerr and John Sasso. New York: McGraw-Hill Book Company, Inc., 1942. 277 p. illus. 28 cm. \$4.00. 3547

Contents: Preface. Charts and tables. Materials. Beams and structures. Latches, locks, and fastenings. Springs. Power transmission elements and mechanisms. Design data on production methods.

Note: A handy, ready-reference manual of design data for the draftsman and designer of industrial equipment. Prepared for use at the drafting board, the book offers a concise source of data that may be readily adapted to a wide number of applications. Contains tables, drawings of typical design details, nomograms, and charts for quick design calculations. Presents standard procedures in design and includes basic designs for fastenings, mechanisms, drives and controls, etc. This material is a compilation of data sheets previously published in *Product engineering*, now re-edited and condensed for quick reference.

NORMAN, CARL ADOLPH, AND OTHERS

Fundamentals of machine design, by C. A. Norman, E. S. Ault and I. F. Zarobsky. New York: The Macmillan Company, 1938. 486 p. illus. 23 cm. (Engineering science series) \$4.25. 3548

Contents: Design procedure and standardization. Strength of materials. Engineering materials. Manufacturing processes. Riveted pressure vessels and riveted joints. Welding. Screw threads. Cylinders, pistons and stuffing boxes. Linkages. Cams and ratchets. Shafts, keys and permanent couplings. Plain bearings and their lubrications. Ball and roller bearings. Flywheels and highspeed rotors. Belts and pulleys. Brakes and clutches. Chains. Spur gears. Helical gears. Bevel gears. Worm gears. Methods of forming and finishing gear teeth. Wire rope and hoisting. Springs. Vibratory stresses. Index.

Note: In this text for students and practicing engineers, the emphasis has been placed on the fundamental principles of machine design, but attention is also directed toward the need for modifications in theoretical designs, due to practical limitations. The practical aspects are illustrated by the problems and data within the text and practice problems at the end of each chapter.

PAGE, RAY M.

14000 gear ratios. New York: The Industrial Press, 1942. 404 p. illus. 28 cm. \$5.00 plus foreign postage. 3549

Contents: Common fractional ratios and decimal equivalents. Decimal ratios, logs and equivalent pairs of gears. Total number of teeth with equivalent gear pairs and ratios. Numbers from 20 to 14400 and equivalent gear factors.

Note: This book contains 14,000 two-gear and millions of possible four-gear combinations. Tabulated ratios are presented in common fractional and decimal forms and in differently arranged sections to facilitate the solution of all classes of gear-ratio problems.

PRAGEMAN, IRVING HENRY

Mechanism. Scranton, Pa.: International Textbook Company, 1943. 296 p. illus. 21 cm. (International texts in mechanical engineering; C. F. Taylor, consulting editor) \$3.00. 3550

Contents: Linkwork and displacements. Velocities in machines. Static forces in machines. Accelerations in machines. Cams. Gears and gear teeth. Gear proportions and manufacturing methods. Gear trains. Flexible transmission. Intermittent motion, reversing, clutch, and brake mechanisms. Diverse types of mechanisms. Appendix. References. Index.

Note: This condensed treatment is intended for students in any branch of engineering who are beginning a study of motions of machine parts. A review of physics and elementary mechanics is included in the initial chapter. Problems are placed at the close of sections.

SCHWAMB, PETER, AND OTHERS

Elements of mechanism, by Peter Schwamb, Allyn L. Merrill, and Walter H. James. Fifth edition. New York: John Wiley & Sons, Inc., 1938. 400 p. illus. 23 cm. \$3.50. 3551

Contents: Introduction. Motion. Vectors. Velocity analysis. Acceleration analysis. Linkages. Transmission of motion by direct contact. Bodies in pure rolling contact. Gears and gear teeth. Wheels in trains. Cams. Inclined plane, wedge, screw. Belts, ropes, and chains. Miscellaneous mechanisms. Index.

Note: The fifth revised edition follows in the main the same general treatment as in previous editions. As heretofore, it is designed to give familiarity with the application of the fundamental principles of kinematics in the field of mechanical movements. A large number of devices are not described, the authors preferring to select the relatively more common and more fundamental machine elements and to study their motions when combined in certain definite ways. Both graphical and algebraic methods of analysis are employed. The present edition affords a more thorough discussion of the general laws of motion, with special attention to acceleration.

SLOANE, ALVIN

Engineering kinematics. New York: The Macmillan Company, 1941. 310 p. illus. 23 cm. \$4.00. 3552

Contents: Preface. Introduction. The rigid body of mechanics. Vectors. Motion. Displacement. Velocity. Acceleration. Index.

Note: This text departs from the traditional division of the subject into chapters based on the machine elements and is instead constructed on the bases of displacement, velocity, and acceleration, the common kinematic background which these elements share. A thorough discussion of vectors and of absolute and relative motion lays the foundation for the following discussion of displacement, velocity, and acceleration and their applications. There is a large number of graded problems, and instruction is given for proper technique for precise drafting in graphical method.

TAYLOR, FRANK A.

Catalog of the mechanical collections of the Division of Engineering, United States National Museum. Washington, D.C.: The Smithsonian Institution, 1939. 203 p. illus. 23 cm. (Smithsonian Institution. United States National Museum. Bulletin no. 173) \$0.50. 3553

Contents: Introduction. Mechanical elements. Animal power. Power from the wind. Water power. The steam engine. Rotary steam engines. Steam-engine valves and valve gears. Inventions of George H. Corliss. Engine governors. Condensers. Engine indicators. Miscellaneous steam-engine accessories. Air and hydraulic engines. Mechanical transmission of power. Steam boilers, accessories and burners. Boiler feed-water pumps and injectors. Steam pumps. Fire engines. Miscellaneous pumps. Internal-combustion engines. Carburetors. Internal-combustion engine accessories. Caloric or hot-air engines. Air-and-steam ("aerator") engines. Refrigerating machines. Selected bibliography. Index.

Note: A descriptive catalogue of the mechanical devices and inventions, roughly designated as prime movers with their accessories and auxiliaries, which are in the collections of the United States National Museum. Each object is briefly described. Patent office models include date of submission and application of patent, purpose of the design, actual functioning, and, in some instances, a short historical note on the later commercial development of the device. Many of the objects are illustrated in photographs and there are 74 bibliographic entries.

TRAUTSCHOLD, REGINALD

Standard gear book; working formulas and tables in gear design. New York: McGraw-Hill Book Company, Inc., 1935. 314 p. illus. 23 cm. \$3.00. 3554

Contents: Tooth forms. Speeds and powers. Gear proportions and design. Spur-gear calculations. Straight-tooth bevel gears. Helical and herringbone spur gears. Spiral gearing. Worm gearing. Spiral-bevel, skew-bevel and hypoid gears. Internal gearing. Epicyclo-gear trains. Gear units. Methods of gear production. Materials and heat treatment. Measurement of gear teeth. Rolled gearing. Appendix: Working formulas and tables in gear design.

Note: A treatment of the principles and practice of gear design, with emphasis on the commercial production of toothed gearing and the methods of attaining present high transmission efficiencies. Discusses all recognized standard forms of toothed gearing, and test measurement and inspection of gear teeth, and includes working formulas and tables used in gear design.

VALLANCE, ALEX, AND VENTON LEVY DOUGHTIE

Design of machine members. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 559 p. illus. 22 cm. (Product development series) \$4.00. 3555

Contents: Introduction. Engineering materials. Stresses in elementary machine members. Design stresses and factor of safety. Riveted joints. Welded joints. Bolts and screws. Keys, cotters, and knuckle joints. Shafts. Couplings and clutches. Brakes. Springs. Sliding bearings. Roller and ball bearings. Belts and belt conveyors. Rope drives. Hoisting and power chains. Spur gears.

Bevel, worm, and spiral gears. Cylinders, pipes, and tubes. Flat plates and cylinder heads. Metal fits and tolerances. Miscellaneous machine members. Index.

Note: Using kinematics, mechanics, and factory processes as a foundation, this book explains the theory involved in the design of the elements of operating machines, and points out the variations from theory required by practical applications. The second edition contains additional information on non-ferrous materials, plastics, synthetics, and rubber substitutes.

VALLANCE, ALEX, AND MARSHALL E. FARRIS

Principles of mechanism. New York: The Macmillan Company, 1933. 335 p. illus. 22 cm. \$3.75. 3556

Contents: Introduction. Vectors. Motion of a body in space. The four-bar linkage. Velocities in linkwork. Instantaneous centers. Centros and combined velocity methods. Acceleration and acceleration diagrams. Applications of the four-bar linkage. Cams. Flexible transmission. Rolling contact. Gears. Cycloidal gears. Involute gears. Twisted and bevel gears. Trains of mechanism. Miscellaneous mechanisms.

Note: This college text contains over 300 figures and 400 exercises. In general, highly mathematical theory has been avoided, but enough derivations are included to develop the student's ability to apply mathematical analysis in practical engineering work. The treatment of the use of vectors, the discussions of cams and gears, four-bar linkage, acceleration, and centros are particularly notable. Much of the material included will be useful in industrial work.

WAHL, ARTHUR MUNZENMAIER

Mechanical springs. Cleveland, O.: Penton Publishing Company, 1944. 435 p. illus. 23 cm. (Machine design series) \$6.00. 3557

Contents: List of symbols. General considerations in spring design. Helical round-wire compression and tension springs. Open-coiled helical springs with large deflection. Static and fatigue tests on helical springs and spring materials. Helical springs under static loading. Fatigue or variable loading of helical springs. Practical selection and design of helical compression springs. Other design considerations for helical compression springs. Buckling of helical compression springs. Helical springs for maximum space efficiency. Tension springs. Square and rectangular-wire compression springs. Vibration and surging of helical springs. Initially-coned disk (Belleville) springs. Initially-flat disk springs. Flat and leaf springs. Helical torsion springs. Spiral springs. Ring springs. Volute springs. Rubber springs and mounts. Energy-storage capacity of various springs. Spring materials.

Note: This book presents the fundamental principles underlying the design of mechanical springs and brings together for the designer of machines the more important recent developments in spring theory and testing.

WINSTON, STANTON EDWIN

Machine design. A text presenting those fundamentals of theory and analysis which are basic to the field of machine design. Chicago: American Technical Society, 1939. 333 p. illus. 21 cm. \$3.00. 3558

Contents: Simple and compound stresses. Bolts and screws. Cylinders and riveted joints. Shafting and keys. Couplings and clutches. Wrapping connectors and their pulleys, sheaves or sprockets. Friction drives and spur and bevel gears. Miscellaneous details of design. Index.

Note: Fundamentals of theory and analysis basic to the field of machine design are treated in this text for beginners. The calculus is not resorted to, as several rational formulas are included for which no derivations are given. Practical examples are furnished with detailed solutions.

WINSTON, STANTON EDWIN

Mechanism; fundamental theory of the modification and transmission of motion. Chicago: American Technical Society, 1941. 372 p. illus. 21 cm. \$3.50. 3559

Contents: Mechanisms. Machines. Frame. Constrained motion. Links. Driver and follower. Higher and lower pairing. Turning and sliding pairs. Incomplete pairing. Graphic solutions. Layouts.

Motion. Instant centers and instantaneous motion. Relative velocities in link work. Velocity diagrams. Wrapping connectors. Direct-contact mechanisms. Toothed wheels or gears. Trains of mechanism. Cams. Index.

Note: Intended as a companion volume to the author's *Machine design*, this book emphasizes the fundamental theory of the subject. An elementary knowledge of trigonometry and some ability in mechanical drawing are assumed.

Mechanical Drawing

BABBITT, ARTHUR BRADFORD, AND DAVID J. SWARTZ

Mechanical drawing, including blueprint reading. New York: Henry Holt and Company, Inc., 1942. 217 p. illus. 19 cm. \$1.50. 3560

Contents: Material. Preparation and use of material. Layout of the sheet. Use of instruments in straight line work. Use of triangles. Use of instruments in curved work. Orthographic projection working drawings. Objects with oblique surfaces. Isometric drawing. Blueprint reading. Assembly drawings. Cylindrical work. Scaled drawings. Sectional views. Partial sections. True length. Developments. Lettering. Geometrical definitions. Geometrical problems. Industrial sketching. Index.

Note: This textbook is adaptable to either one- or two-year elementary courses. The scope is general and there is no attempt to treat specialized branches of drawing, such as architectural, in detail. About one-third of the book consists of practical problems. Nearly five hundred diagrams are included.

BARTLETT, FRANK WILLIAM, AND THEODORE W. JOHNSON

Engineering descriptive geometry and drawing. Revised edition. New York: John Wiley & Sons, Inc., 1941. 572 p. illus. 23 cm. \$4.50. 3561

Contents (abridged): Part I, Drawing-room equipment. Instruments. Free-hand lettering for mechanical drawings. Standard processes in drafting. Layout for drawing sheets. Pencil drawing the first drawing sheets. Inking the first drawing sheets. Shading in mechanical drawing. Tracing and blueprinting. Part II, Nature of orthographic projection, the finite straight line. The true length of a line in space. Plane surfaces and their intersections and developments. Intersecting prisms and pyramids. Simple curved lines and surfaces. Intersections of curved surfaces, cylinders, cones and spheres. Surfaces of revolution. The helix and helicoidal surface. Development of curved surfaces. Straight lines of unlimited length and their traces. Planes of unlimited extent: their traces. Various applications. Descriptive geometry without axes. Part III, Describing and dimensioning. Elements of machine design. Sketching in engineering drawings. The elements of isometric sketching. Procedure in sketching small machine parts. Standard fastenings. Representation of bolts, nuts, rivets and springs. Standard pipe fittings. Detail drawings. Assembly drawing. Tables of standards. Index.

Note: The material in this comprehensive volume is arranged progressively, beginning with the rudiments of the subject and leading by easy stages into instruction in the preparation of quite complicated working drawings. The book is the outcome of a long period of evolution in the drawing courses at the United States Naval Academy.

BISHOP, CARLTON THOMAS

Structural drafting. New York: John Wiley & Sons, Inc., 1941. 287 p. illus. 23 cm. \$3.50. 3562

Contents: Introduction. The engineering department of a structural company. The manufacture of structural steel. The fabrication of structural steel. The structural drawing. Conventional methods of representation. Conventional methods of billing. Conventional methods of dimensioning. Drafting technique. Notes and titles. Working lines. Rivet spacing. Welding. Clearance. Layouts. Marking systems. Plate girders. Roof trusses. Latticed girders. Beams. Columns. Bridge trusses. Bracing and miscellaneous members. Skew work. Erection plans and diagrams. Material order bills. Miscellaneous drawings and lists. Checking and correcting drawings. Reinforced-concrete construction. Timber construction. Glossary of engineering terms. Index.

Note: This book corresponds in scope to the duties of the structural-steel draftsman in the preparation of detailed working drawings for members of steel structures. Drawings for con-

crete and timber structures are also discussed, and billing practice is covered. There are many detailed illustrations, and the glossary of engineering terms includes almost 500 items.

BRODIE, HAROLD J.

Engineering drawing and mechanism. New York: Harper & Brothers, 1942. 241 p. illus. 28 cm. (Rochester technical series) \$2.50. 3563

Contents: Lettering. Use of instruments. Applied geometry. Orthographic projection. Developed surfaces and intersections. Working drawings. Isometric pictorial representation. Technical sketching. Machine drafting and mechanism; lettering. Levers. Cams. Spur gearing. Bevel gearing. Worm gearing. Helical gearing. Chains and sprockets. Motions and linkages. Quick return mechanisms. Drill press mechanism. Glossary of terms. Decimal equivalents. Index.

Note: This volume provides the basic knowledge and skill in drafting essential for training draftsmen and workers on machine tools. The emphasis is on practice rather than theory. Sixty-three plates of drawings are included.

CARTER, ISAAC NEWTON, AND H. LOREN THOMPSON

Engineering drawing; practice and theory. Second edition. Scranton, Pa.: International Textbook Company, 1943. 462 p. illus. 28 cm. (International texts in mechanical engineering, C. F. Taylor, consulting editor) \$3.00. 3564

Contents: Introduction. Lettering. Use and care of drawing equipment. Geometrical elements of structures. Theory of drawing. Principal views. Section drawing. Auxiliary views. Revolution. Dimensioning. Fasteners. Point, line, and plane problems. Surfaces, intersections, and developments. Pictorial drawing. Working drawings. Machine elements. Welding drawings. Pipe and fittings. Sketching. Perspective drawing. Architectural drawing. Structural drawing. Reproduction of drawings. Appendix. Index.

Note: A textbook for engineering students covering the fundamentals of engineering drawing, including lettering, descriptive geometry, and architectural and structural drawing. The theory of drawing is presented in terms of descriptive geometry, and its application or practice worked out simultaneously, thus eliminating duplication in classroom work and also the need for separate texts in descriptive geometry and engineering drawing. A feature of the book is its large page size (11 x 8½ inches) which permits the use of a larger-than-usual scale in the reproduction of drawings. The second edition contains new chapters in welding drawings, perspective drawings, and other subjects as well as many additional illustrations and new appendix material. For use with this book the authors have prepared *Engineering drawing problems*, second edition, Scranton, Pa.: International Textbook Company, 1943, 160 plates, \$2.25.

FRENCH, THOMAS EWING

A manual of engineering drawing for students and draftsmen. Sixth edition, revised and enlarged. New York: McGraw-Hill Book Company, Inc., 1941. 622 p. illus. 24 cm. (French drawing series) \$3.00. 3565

Contents: Introductory. The selection of instruments. The use of instruments. Lettering. Applied geometry. The theory of projection drawing. Orthographic projection. Auxiliary projection. Sections and conventions. The drawings and the shop. Dimensions and notes. Bolts, screws, keys, rivets and springs. Piping drawings. Working drawings. Welding drawings. Gears and cams. Jigs and fixtures. Technical sketching. Developed surfaces and intersections. Pictorial representation. Pictorial sketching. Perspective drawing. Aircraft drawing. The elements of architectural drawing. The elements of structural drawing. Map and topographic drawing. Charts, graphs and diagrams. Duplication and drawing for reproduction. Shade lines and line shading notes on commercial practice. Bibliography of allied subjects.

Note: This textbook for courses of college grade has been widely used in its various editions for many years. The present edition has been thoroughly revised and completely reset. The page size has been increased to permit larger illustrations. There is a wealth of new problem material. New chapters have been added on aircraft drawing, jigs and fixtures, etc., and there is new material on dimensioning, bolts and screws, auxiliary views,

cams, gears, and piping. A simpler, less comprehensive book is Thomas E. French and C. L. Svensen, *Mechanical drawing*, fourteenth edition, New York, McGraw-Hill, 1940, 300 p., \$1.60.

GIESECKE, FREDERICK ERNEST, AND OTHERS

Technical drawing, by Frederick E. Giesecke, Alva Mitchell, and Henry C. Spencer. Second edition. New York: The Macmillan Company, 1940. 687 p. illus. 23 cm. (Engineering science series, edited by E. R. Hedrick) \$3.00. 3566

Contents: Introduction. Instruments and materials. Instrumental drawing. Geometry of technical drawing. Lettering. Projections. Multi-view projection. Auxiliary views. Revolutions. Sectional views. Axonometric projection. Oblique projection. Perspective. Intersections and developments. Dimensioning. Fasteners. Shop processes. Working drawings. Gearing and cams. Pipes, fittings, and valves. Welding representation. Technical sketching. Shading. Patent office drawing. Graphs. Architectural drawing. Structural drawing. Topographic drawing. Reproduction of drawings. Appendices.

Note: The second edition includes a chapter on shop practices and special chapters on each of the following: gearing and cams; pipes, fittings, and valves; welding representation. Instruments and materials, instrumental drawing, lettering, multi-view projections, and pictorial drawing are treated fully, and there are improved and expanded chapters on the geometry of technical drawing, intersections and developments, dimensioning, and fasteners. Many new problems have been added to the chapter on working drawings, as well as to other chapters. The complete American Standard Association *Drawings and drafting room practice* (ASA Z 14.1-1935) are included in the Appendix. The authors have prepared *Technical drawing problems*, New York: The Macmillan Company, 1936, 93 sheets, \$2.25, for use with this book.

HOBART, DEAN ESTES

Engineering drawing. Boston: D. C. Heath and Company, 1941. 430 p. illus. 24 cm. \$2.75. 3567

Contents: Introduction. Selection and use of equipment. Lettering. Applications of geometry. Orthographic projections. Sectional views; conventions. Dimensioning. Fastenings, springs, and piping. Working drawings. Pictorial representations, developments and intersections. Freehand sketches. Charts for graphic presentation and computation. Maps. Construction drawing. Appendix. Index.

Note: For college students, this text anticipates some of the usual student difficulties by covering many small items that formerly, when classes were smaller, were handled by the instructor. The method of presentation of orthographic projection is intended to make clear to the student that descriptive geometry is the basis of the methods of representation used by the engineering draftsman. The academic and theoretical treatment of the representation of objects is supplemented with material on the practices of industry in the production of working drawings. The appendix contains a classified bibliography and glossaries of shop and structural shop terms.

HOELSCHER, RANDOLPH PHILIP, AND OTHERS

Industrial production illustration for students, draftsmen and illustrators, by Randolph Philip Hoelscher, Clifford Harry Springer, and Richard F. Pohle. New York: McGraw-Hill Book Company, Inc., 1943. 172 p. illus. 28 cm. \$3.50. 3568

Contents: Uses of pictorial drawing. Lettering. Orthographic projection. Orthographic sketching. Axonometric projections. Axonometric sketching. Oblique projection. Oblique sketching. Perspective. Engineering delineations. Shading. Problems.

Note: Provides the necessary instructional material for those who wish to engage in production illustration in the aircraft, shipyard, or ordnance fields, and in illustration in the servicing and maintenance fields of any machine or automotive industry. Both freehand and instrumental layouts are discussed. Isometric, dimetric and trimetric drawing are treated in the conventional way, and a new method of making axonometrics is presented for the first time in any text.

JOHNSON, WILLIAM HARDING, AND LOUIS V. NEWKIRK

Modern drafting. New York: The Macmillan Company, 1944. 197 p. illus. 21 cm. (Industrial arts education series) \$1.72. 3569

Contents: Draftsman's language and tools. Lettering and techniques. Reading drawings. Working drawings. Pictorial drawing and freehand sketching. Geometric constructions. Sheet-metal drafting and surface development. Machine drafting. Aircraft drafting. Architectural drafting. Graphs and maps. Tracing, blue-printing, and duplicating.

Note: A simple text designed for students of the high school level and for older beginners desiring an introduction to the subject. It deals with the fundamental procedures of drafting and their industrial applications. The volume is well illustrated and there is an index.

KENISON, ERVIN

Mechanical drawing. Fourth edition. Revised by Edward B. Waite and James McKinney. Chicago: American Technical Society, 1942. 330 p. illus. 21 cm. \$2.00. 3570

Contents: Instruments and materials. Drafting techniques. Lettering. Geometric definitions. Geometric problems. Symbols and conventions. Drawing instruments, how to hold. Don'ts in draft work. Projections. Intersections. Development of surfaces. Isometric projection. Oblique projection. Line shading. First angle projection. Index.

Note: This book is a practical manual of self instruction in drafting, lettering, and reproducing plans. It deals with rules of geometric construction; the methods of representing plans and elevation of objects, and the principles of orthographic and isometric projection and precision work. The studies are illustrated with diagrams and plates, and the student is carried from the simplest drawing problems to those which, in difficulty, border on the architectural and engineering fields.

LUZADDER, WARREN JACOB

Fundamentals of engineering drawing for technical students and professional draftsmen. New York: Prentice-Hall, Inc., 1943. 568 p. illus. 23 cm. \$4.00. 3571

Contents (abridged): Drawing materials and equipment. Engineering geometry. Technical lettering. The theory of projection. Multi-view drawing. Orthographic drawing. Dimensioning. Screw threads and fasteners. Shop processes. Working drawing. Welding. Machine elements. Developments and intersections. Free-hand drafting. Structural drafting. Topographic and engineering drawing. Reproduction and duplication of engineering drawings. Patent Office drawing.

Note: Primarily for college engineering drawing course students, but sufficiently comprehensive for practical draftsmen. Numerous illustrations with detailed explanatory comments are included, with problems at the end of each chapter. The appendix includes American Standards drawing and drafting room practice, graphical symbols, tables, glossary, visual aids, and bibliography. It is suitable also for use as a self-teaching text. The author and others have prepared for use with this book *Problems in engineering drawing*, New York, Prentice-Hall, Inc., 1943, 204 p., \$3.25.

OBERG, ERIK VALDEMAR

Draftsman's mathematical manual, including principles of algebra, use of equations, and a selected collection of engineering and drafting-room problems with methods of analysis and solution, for the use of draftsmen and others requiring the aid of practical examples as a guide in solving similar problems. Second edition. New York: The Industrial Press, 1941. 265 p. illus. 28 cm. \$2.00, plus foreign postage. 3572

Contents: Principles of algebra. Use of equations in solving problems. Problems involving unknown angles. Solution of triangles to determine linear dimensions. Calculating unknown

diameters or radial dimensions. General engineering and designing problems. Miscellaneous problems.

Note: Deals with the principles of algebra and the use of equations, but consists chiefly of selected mathematical and drafting-room problems. The problems were supplied to the publishers generally by draftsmen or designers out of their daily experiences, hence they represent the kinds of problems which are of particular interest and importance to those engaged in machine and tool design.

SAHAG, LEON MARR

Engineering drawing. New York: The Ronald Press Company, 1942. 394 p. illus. 26 cm. \$2.75. 3573

Contents: Part I, Elementary: Introduction. Engineering lettering. Drawing outfit. The use of the drawing instruments. Geometrical drawing. Orthographic projection. Auxiliary and sectional views. Dimensioning and elementary working drawing. Axonometric and oblique projections. Part II, Intermediate: Technical sketching. Fastenings. Piping. Working drawing. Steel structural drawing. Process of duplication. Manufacturing methods. Materials of construction. Part III, Advanced: Developments, sections, and intersections of solids. Perspective projection. Charts, diagrams, and graphs. Jigs and fixtures. Elementary machine design. Patent drawing. Part IV, Drawing room problems. Includes 360 practice illustrations; 150 assignments.

Note: A distinctive purpose of the text is maximum training in minimum time and space. Nonessentials are eliminated, expositions are brief, and illustrations demonstrate theory. Stress is on accurate reasoning, solving problems unaided, translating theory into practice. Technique follows industrial procedure and students should be qualified to go into more advanced design. Many original problems, designs, and layouts are included.

SCHUMANN, CHARLES HENRY

Technical drafting; a text and reference book on graphics. New York: Harper & Brothers, 1940. 793 p. illus. 24 cm. \$3.50. 3574

Contents: The graphics of space. Instruments and materials. The use of the drafting equipment. Technical lettering. Geometrical constructions. The theory of graphic representation. Engineering drawings. Auxiliary views. Revolved views. Sectional views and conventional representations. Machine parts; materials and manufacture. Dimensioning. Fastenings. The intersection and development of surfaces. Pictorial drawing. Perspective. Technical sketching. Mechanical engineering drafting. Machine elements. Civil and mining engineering drafting. Welding. Chemical engineering drafting. Electrical engineering drafting. Engineering and scientific graphs. Industrial engineering drafting. Architectural drafting and design. Shading. Topographic drafting. Duplication of engineering drawings. The slide rule. Appendix. Index.

Note: A comprehensive text, covering not only the usual topics in engineering drawing, but also containing extensive material on commercial practice in the various branches of engineering. Nearly a thousand reproductions of drawings are used as illustrations. Hundreds of problems for the student are included.

SMITH, WILLIAM GRISWOLD

Engineering drafting. New York: McGraw-Hill Book Company, Inc., 1934. 236 p. illus. 23 cm. \$2.25. 3575

Contents: Part I, Fundamentals: Engineering lettering. Drafting tools. Geometry used in engineering drafting. Orthographic projection. Intersections and developments. Part II, Applications—machine drafting, airplane drafting, pictorial drafting: Introduction. Machine drafting—fastenings. Details. Gears, cams and bearings. Assembly drafting. Airplane drafting. Pictorial drafting. Useful tables. Index.

Note: This brief text has been written to develop the student's ability to think and to use initiative in connection with drafting problems. Most of the figures have been drawn out of scale so that the student will have to rely on the dimensions given and other devices have been adopted to prevent mere routine copying.

SVENSEN, CARL LARS

Drafting for engineers; a textbook of engineering drawing for colleges and technical schools. Second edition. New York: D. Van Nostrand Company, Inc., 1935. 554 p. illus. 23 cm. \$3.00. 3576

Contents: Engineering drawings. Equipment and materials. Use, care, and testing of equipment. Geometrical constructions. Engineering lettering. The graphic language. Orthographic projections. Revolution. Auxiliary views. Sectional views. Theory and practice of dimensioning. Engineering sketching. Screws, bolts, and other fastenings. Machine elements. Working drawings. Piping drawings. Development of surfaces. Intersecting surfaces. Axonometric projection. Oblique projection. Perspective. Pictorial sketching. Architectural drafting. Structural drafting. Electrical drafting. Topographic drafting and mapping. Graphic charts. Technical illustrations and data. Examinations. Problems. Aircraft drafting practice. Dimensioning aircraft drawings. Aircraft drawings. Index.

Note: This college textbook of engineering drafting explains the fundamental operations in detail, and outlines special teaching devices which will enable the student to acquire proficiency in the use of instruments, the positioning of dimension lines, and other criteria of professional workmanship. The number of chapters in this edition has been increased from nineteen to thirty and it now includes material on the use, care, and testing of equipment, axonometric projection, perspective drawing, graphic charts, and topographic drafting. A large number of graded problems are included, presented by definite layouts. The author's *Essentials of drafting*, third edition, New York: D. Van Nostrand Company, Inc., 1943, 295 p., \$2.35, is a shorter book designed for short courses in engineering colleges.

THAYER, HORACE RICHMOND

Industrial drawing. Prepared under the direction of the Division of Engineering Extension, the Pennsylvania State College. New York: McGraw-Hill Book Company, 1942. 195 p. illus. 23 cm. (The Pennsylvania State College. Industrial series) \$1.75. 3577

Contents: Introduction. Drawing straight lines with the pencil. Drawing curved lines with the pencil. Views. Surveying, scale protractor. Objects described by views in combinations. Dimensioning. Lettering and drawing in ink. Sections. Special sections. Symmetry. Reversals or rights and lefts. Auxiliary views. Special auxiliary views. The double auxiliary. The line view. Simple revolution. Double revolution. Oblique drawings. Isometric drawings. Perspective drawings.

Note: A brief text for beginning students who wish only to acquire a facility in sketching and an ability to interpret drawings. It has been planned to cover the principles of engineering drawing as an introduction to the study of typical blueprints common to the various branches of industrial production and building construction.

TOZER, ELIOT F., AND HARRY A. RISING

Machine drawing; a textbook with problems for students and draftsmen. New York: McGraw-Hill Book Company, Inc., 1934. 317 p. illus. 23 cm. \$3.00. 3578

Contents: Methods of machine production. Materials of machine production. Principles and materials of drawing. General drafting-room practice. Dimensioning. Fastenings. Bearings. Belts and pulleys. Gears. Clutches. Cams. Piping. Jigs and fixtures. Machine sketching. Problems. Index.

Note: This approach to machine drawing traces the production of a machine from the conception of the idea to the finished product, thus providing a progressive approach to machine design. Nearly 300 problems are included, presented as they would come up in the commercial drafting room.

Blueprint Reading

DICK, ARTHUR A.

Blueprint reading, a visualized method of instruction. New York: The Ronald Press Company, 1942. 157 p. illus. 26 cm. \$2.40. 3580

Contents: Introduction. Abbreviations and symbols for blueprint reading. Part I, Information: Blueprint terminology. Layout form. Title forms. Geometric surfaces. Geometric solids. Conventional symbols. Welding symbols. Picture drawings. Orthographic projection. Conventional lines. Methods of dimensioning. Comparison of scaled sizes. Conventional sections. Use of the assignments. Rectangular block—sample assignment and answers. Part II, Problems and assignments.

Note: A visualized method of instruction for use in high schools, vocational schools, adult evening schools, and teacher training institutions. The problems, each included for a specific reason and having an objective assignment for the student, are formulated from both classroom experience and industrial practice. For instructors there are numerous suggestions for teaching material and outlines, and an answer book is available to ease labor of checking work sheets. Problems are provided for free-hand sketching experience.

DWIGHT, CARLTON

Reading blueprints in the machine industries. New York: McGraw-Hill Book Company, Inc., 1943. 144 p. illus. 31 cm. (A McGraw-Hill practical manual) \$2.25. 3581

Contents: Introduction. Shape description—orthographic projection. Shape description—cylinders and curved surfaces. Visualization. Mathematics essentials. Size description—dimensions and notes. Scale. Blueprint reading procedure. Sectional views. Auxiliary views—enlarged views. Conventional breaks—alternate positions—repeated detail. Threads and thread representation. Violations of theory. Manufacturing processes and material specifications. Shop terms. Titles and notes—revision or change charts—drill tables. Detail and assembly drawings. Development of a machine—reproduction and duplication of drawings. Gears—cams—eccentrics. Technical sketching. Tables.

Note: A practical book designed to teach blueprint reading quickly and efficiently to men and women in industry. Assuming no previous knowledge of blueprint reading, it introduces the learner to the subject step by step. All information has been selected for its practical character. The projects, including 23 full-page simulated blueprints, as well as the subject matter conform to modern industrial practice in all cases.

HEINE, GILBERT M., AND CARL H. DUNLAP

How to read electrical blueprints. Chicago: American Technical Society, 1942. 318 p. illus. 21 cm. \$3.00. 3582

Contents: General information on blueprints. How to read architectural blueprints, diagrams for bell and signal wiring, housewiring blueprints, administration building blueprints, automobile wiring diagrams, diagrams of generators and motors, symbols for control diagrams, motor control diagrams and power station blueprints. Index.

Note: An introductory book designed for workers and practical students.

IHNE, RUSSEL W., AND WALTER E. STREETER

Machine trades blueprint reading. Chicago: American Technical Society, 1941. 148 p. illus. 28 cm. \$2.00. 3583

Contents (abridged): Glossary of shop terms. Decimal equivalent chart. Problems in shop arithmetic. Title blocks and bills of materials. American standard drafting room practice. Alphabet of lines. Relation of views. Scales. Standard symbols for section lining. Thread forms. Dimensions. Problems in orthographic projection. Rules and formulas for internal spur gears. Bevel gear terms and rules and formulas for calculating. Rules and formulas for calculating miter bevel gearing. 43 production blueprints with questions and answers. Graph paper.

Note: The first part of the book covers information basic to interpretation of prints. The use of different lines and application of shop arithmetic to checking of dimensions are treated. The blueprints for interpretation are taken from industrial applications. For use in vocational and trade schools.

NICHOLSON, FREDERICK SAMUEL, AND FRED JONES

Blueprint reading. Understanding shop practices. New York: D. Van Nostrand Company, Inc., 1944. 141 p. illus. 25 cm. \$2.25. 3583a

Contents: Preface. Working drawings. Plates 1-50. Appendix. Index.

Note: The main body of this work consists of 50 lessons and 50 blueprints for study. For most lessons the student has before him pictorial illustrations of a machine tool, an expository text on its uses, a reproduction of a blueprint requiring the use of the tool, and questions pertaining to the blueprint. The volume is intended as an introductory textbook for classroom use. It can also be used for self-instruction.

SVENSEN, CARL LARS, AND WILLIAM EZRA STREET

A manual of blueprint reading for study and practice in reading prints of all kinds, with questions and exercises. New York: D. Van Nostrand Company, Inc., 1944. 98 p. illus. 25 cm. \$1.90. 3583b

Contents: The engineering and industrial language. How views describe parts. Sketching as an aid to reading prints. Lettering on prints. Basic constructions and forms. Kinds of lines used on prints. Print reading practice. Computation of weights of parts from prints. Pictorial sketching as an aid in reading prints. Reading exercises. Reading dimensions from prints. Reading sectional views on prints. Reading fastenings on prints. Reading auxiliary views, etc., on prints. Reading sheet metal prints. Welding symbols used on prints. Reading detail prints. Reading pulley and gear prints. Reading assembly prints. Reading aircraft prints. Reading engineering prints. Appendix.

Note: Not limited to any particular industry, this elementary text aims to provide an understanding of the principles of print reading from which the beginner may develop the ability to read prints with various applications. There are vocabulary drills, reading exercises, questions, and answers.

THAYER, HORACE RICHMOND

Blue print reading and sketching. Prepared under the direction of the Division of Engineering Extension, the Pennsylvania State College. Second edition. New York: McGraw-Hill Book Company, Inc., 1942. 135 p. illus. 23 cm. (Pennsylvania State College. Industrial series) \$2.25. 3584

Contents: Introduction. Details: The single orthographic view. Plans and maps. Object described by views in combination. Sections. The representation of fastenings. Architectural working drawings. Plumbing. Heating. Oblique drawings. Isometric drawings. Symmetry. Reversals or rights and lefts. Drafting in the electrical field. Electrical wiring. Mechanical details. Drawings of miscellaneous objects. Structural steel. Assembly drawings. Bills and orders. Reinforced concrete. A motor generator. Plate 23—a bench drill. Structural steel and reinforced concrete.

Note: Presents a course of twenty lessons in elementary engineering drawing in which the fundamental theories and techniques are simply explained with a minimum of technical language. Many problems formerly solved by descriptive geometry are solved here by simple drawing. Emphasis is laid on a proper coordination of theory and practice. Two new chapters on orthographic projection have been added in the second edition. A number of illustrations found in the first edition have been replaced in this edition by blueprints.

WEIR, JOHN J.

Blueprint reading for the machine trades. New York: McGraw-Hill Book Company, Inc., 1941. 82 p. illus. 28 cm. \$1.25. 3585

Contents: Blueprint reading. More complicated objects. Cylinders, curves, and combination. Measurements. Dimensions. Titles and notes. Sections. Threads. Detail and assembly prints. Machine operations and finishes. Screws, rivets, keys, keyways, and pins. Fits, limits, tolerances, and allowances. Auxiliary views. Gears and gearing. Reading commercial prints.

Note: An elementary text offering a complete course in blueprint reading as applied to the machine trades. Gives step-by-step instruction in principles and methods and practical problems of the type constantly encountered in shop and industry.

Lubricants

AMERICAN SOCIETY FOR TESTING MATERIALS

Symposium on lubricants (1937). Philadelphia: The American Society for Testing Materials, 1937. 89 p. illus. 23 cm. Paper, \$1.25.

3585a

Contents: Engine deposits—causes and effects, by W. A. Gruse and C. J. Livingstone. Automotive bearings—effect of design and composition on lubrication, by Arthur F. Underwood. Addition agents for motor oils, by George M. Maverick and R. G. Sloane. How to select a motor oil from the standpoint of the consumer, by W. S. James.

Note: This symposium is a sequel to the American Society for Testing Materials, *Symposium on motor lubricants*, 1933, described below, and the papers are limited to motor car engine lubricants. There is no duplication of material in the earlier symposium. Discussions follow each paper.

AMERICAN SOCIETY FOR TESTING MATERIALS

Symposium on motor lubricants. Philadelphia: The American Society for Testing Materials, 1933. 121 p. illus. 22 cm. Paper, \$1.25. 3585b

Contents: Carbon deposits in gasoline engines, by W. A. Gruse. Present concepts of the relation of A.S.T.M. pour test to service requirements of oils, by J. L. McCloud. Viscosity of automobile crankcase oils as related to service requirements, by E. W. Upham. Service changes in crankcase lubricating oils, by M. A. Dietrich. Oil consumption in motor car engines, by W. H. Graves. Factors in engine design which affect oil performance, by A. L. Clayden. Aircraft engine lubrication, by Arthur Nutt.

Note: Four of these papers are followed by discussions and there is one bibliography. Additional papers on this subject are contained in the A.S.T.M.'s *Symposium on lubricants* (1937), Philadelphia, 1937, described above.

CLOWER, JAMES IRA

Lubricants and lubrication. New York: McGraw-Hill Book Company, Inc., 1939. 464 p. illus. 23 cm. \$5.00. 3585c

Contents: Crude petroleum. Petroleum refining. Petroleum products. Fixed oils and fats. Solid lubricants. Grease. Lubricating-oil tests. Fundamentals of lubrication. Lubricating appliances and systems. Oil-purification methods. Lubrication of ball and roller bearings. Lubrication of steam turbines. Lubrication of steam engines. Lubrication of air compressors. Lubrication of refrigeration machines. Lubrication of internal-combustion engines. Storing and handling of lubricants.

Note: A guide to the best methods of selecting and using lubricants, designed for all who are concerned with the purchase, sale, or application of them to specific purposes. The book deals with the types, sources, and properties of lubricants, lubrication systems, and fundamentals of lubrication. There is also a treatment of methods of selecting and using lubricants for major types of machinery important to industry.

FORBES, WILLIAM GORDON

Lubricants and cutting oils for machine tools. New York: John Wiley & Sons, Inc., 1943. 90 p. illus. 22 cm. \$1.50. 3585d

Contents: Tests and specifications. Greases. Types of machine tools. Lubrication of machine tools. Metal cutting. Composition of cutting oils. Compounds and blends of cutting oils. Application of cutting oils. Skin infections with cutting oils. Appendix. Index.

Note: Provides in brief form an explanation of the fundamental principles of lubrication in relation to metal cutting, and the application of various types of cutting oils to machine-tool operation. The principles of machine-tool lubrication are also discussed. The book provides practical information for the solution of problems that arise in metal cutting.

FORBES, WILLIAM GORDON

Lubrication of industrial and marine machinery. New York: John Wiley & Sons, Inc., 1943. 319 p. illus. 22 cm. \$3.50. 3585e

Contents: Distillation. Distillation of lubricating oils. Chemistry of petroleum. Refining light distillates and lubricating oils. Blending. Dewaxing and the effect of wax in lubricating oils. Compounding. Tests and specifications. Purchase specifications. Effect of heat and pressure on lubricating oils. Effect of metals on lubricating oils. Bearing lubrication and the formation of oil films. Methods for applying lubricants. Ball and roller bearings. Steam engines. Steam turbines. Hydraulic turbines. Air compressors and vacuum pumps. Pneumatic tools. Refrigerating machines. Gas compressors. Internal combustion engines. Gasoline engines. Diesel engines. Reduction gears. Machine tools. Steel mills. Heat-treating oils. Paper mills. Textile machinery. Wire ropes and cables. Hot oil circulating systems. White oils. Oil purification and reclaiming. Greases. Rust prevention with petroleum products. Appendix. Index.

Note: General principles of lubrication are developed in clear and not-too-technical terminology. The book provides a working knowledge of distillation, refining, blending, cracking, and petroleum chemistry, as well as a description of the various laboratory tests carried out on new and used oils. The major portion of the book is devoted to practical discussions on the lubrication of prime movers and machinery.

HERSEY, MAYO DYER

Theory of lubrication. Second printing. New York: John Wiley & Sons, Inc., 1938. 175 p. illus. 23 cm. \$2.50. 3585f

Contents: Historical introduction. Viscosity and its relation to friction. The classical hydrodynamic theory. Dimensional theory, with applications. Temperature rise in bearings. The problem of oiliness. Summary. Recent developments. Index to mathematical notation. Name index. Subject index.

Note: This volume is based upon a series of public lectures on the mechanics of lubrication given by the author in 1934 and repeated in 1935. It is addressed to physicists, engineers, investigators, and teachers of engineering rather than directly to the undergraduate and aims to give the scientific background of modern lubrication, so that the problems arising in practice may be better understood. The revised edition contains a new chapter outlining recent developments in the field through 1938.

NORTON, ARTHUR EDWIN

Lubrication. Edited by J. R. Muenger. New York: McGraw-Hill Book Company, Inc., 1942. 244 p. illus. 23 cm. \$3.00. 3585g

Contents: Introduction. Fluid friction and viscosity. Thin-film friction and oiliness. Properties of lubricants. Hydrodynamic theory for slider bearings without leakage. Bearing with variable viscosity. Full journal bearing without side leakage. Partial bearings and fitted bearings without side leakage. Slider bearings with side leakage. Journal bearings with side leakage. Thermal equilibrium. Bearing loads, and design practices. Grooving, application of lubricants, and materials for bearing construction. Ball, roller, and needle bearings.

Note: An authoritative manual that offers students and practicing engineers the information they need for a thorough understanding of the proper lubrication of machine bearings. The book develops the hydrodynamic theory of bearings from the simple concepts of viscosity and laminar flow, and authoritatively discusses viscosity measurement, the properties of lubricants, and the practical considerations of bearing design.

Tools

CHASE, HERBERT

Die castings; their design, composition, application, specification, testing and finishing. New York: John Wiley & Sons, Inc., 1934. 264 p. illus. 23 cm. \$3.50. 3586

Contents: Why die castings? Typical and specialized applications. Alloys for die casting. Design of die casting. Specifications, inspection and tests. Finishes for die castings.

Note: Detailed, authentic information on the various phases of the subject, of interest to the die caster, the designer, and the engineer. The book deals primarily with the product, its composition, uses, and design, rather than with methods followed in production, although some of the latter are outlined briefly.

COLE, CHARLES BRADFORD

Tool design; fundamental principles of design as applied to tooling for production. Chicago: American Technical Society, 1941. 498 p. illus. 21 cm. \$4.50. 3587

Contents: Practice and procedure. Materials. Jig, fixture and tool design standards. Commercial standards. Cutting tools. Tooling for production. Drill jigs. Fixtures. Dies. Gages. Appendix. Common abbreviations for the tool designer, symbols for welds. American and National screw threads, terminology relating to threads, screw-thread fits. Index.

Note: This text on tool making stresses design of fixtures and tools rather than the method of making them. The style is simple and direct. Questions at the end of chapters make the book valuable for home study or school work.

COLE, CHARLES BRADFORD

Tool-making; toolroom tools and equipment, machine tools, heat-treating processes, production methods, production tools. Chicago: American Technical Society, 1939. 413 p. illus. 21 cm. \$3.50. 3588

Contents: Personal tools. Toolroom tools and equipment. Measuring and layout tools. Cutting tools. Machine tools and equipment. Heat treating methods and equipment. Blueprints and sketches. Detailed working drawings for production tools. Appendix. Index.

Note: A practical manual, suitable for the beginning tool-maker as well as for the more advanced worker. Typical jobs are presented, leading from simple to complicated design and making of tools. The illustrations are reproductions of photographs and working drawings showing production tools, dies, jigs, and fixtures.

COLVIN, FRED HERBERT, AND LUCIAN L. HAAS

Jigs and fixtures; a reference book showing many types of jigs and fixtures in actual use, and suggestions for various cases. Third edition. New York: McGraw-Hill Book Company, Inc., 1938. 354 p. illus. 23 cm. \$3.50. 3589

Contents: Introduction. Designing jigs and fixtures. Advantages of tool-design standards. Drill-jig bushings. Types of drill jigs and fixtures. Machine vises and vise jaws. Details of fixture design. Locating schemes for drill jigs and fixtures. Clamps and clamping methods. Drilling jigs and fixtures. Milling machine fixtures. Grinding machine fixtures. Welded, cast-iron, and light metal fixtures. Pneumatic fixtures for holding work. Fixtures for inspection work. System in the toolroom. Wartime data supplement.

Note: A manual covering the design and use of jigs and fixtures, with emphasis on their economical use and the principles of their design and construction. Typical jigs and fixtures in actual use are shown, with cost and other data to help machine shop men in adapting them to many specific purposes. In this third edition the material has been rearranged and considerable information added.

DONALDSON, CYRIL, AND GEORGE H. LECAIN

Tool design. New York: Harper & Brothers, 1943. 443 p. illus. 24 cm. (Rochester technical series) \$3.75. 3590

Contents: Drafting room practice. Manufacturing processes as they affect the designer. Properties of materials. Tolerances and allowances. Springs. Welding. Cutting tools. Punch and die design. Gage and gage design. Elementary jigs and fixtures. Practical design of jigs and fixtures. Construction of Brown and Sharpe automatic screw machine. Tools used on Brown and Sharpe automatic screw machine. Cam design. Turret lathes. Index.

Note: This is a practical work for both students and experienced workers in the tool designing, tool engineering, tool making and drafting fields, intended to meet specific problems in industry. Concise but practical units deal with manufacturing processes, materials, and welding. Illustrated with 536 line drawings and halftones.

GILL, JAMES PRESLEY, AND OTHERS

Tool steels, by J. P. Gill, R. S. Rose, G. A. Roberts, H. G. Johnston and R. B. George. Cleveland: American Society for Metals, 1944. 577 p. illus. 23 cm. \$6.00. 3590a

Contents (abridged): Manufacture of tool steel. Classification of tool steels. Testing of tool steels. General properties and selection of tool steels. General principles of heat treatment of tool steels. Purpose and effect of alloying elements on tool steels. Carbon, chromium and silicon tool steels. Tungsten finishing steels. Chromium die steels for cold work. Die steels for hot work. High speed steels.

Note: Intended for the users of tool steels rather than the metallurgist, this work offers theoretical and practical information concerning the more commonly manufactured tool steels. There is an extensive bibliography and an index.

HERB, CHARLES OLIVER

Die-casting. The die-casting process and its application in modern manufacture, die-casting machines, design of different types of dies, composition and properties of die-casting alloys and the die-casting of zinc, aluminum, brass, other non-ferrous alloys, and cast iron. New York: The Industrial Press, 1936. 300 p. illus. 23 cm. \$3.00, plus foreign postage. 3591

Contents: Die-casting process and its applications. Die-casting machines and their development. Alloys for die castings. Die-casting dies and their operation. Two or more castings at each "shot." Dies with auxiliary slides for exterior cores. Sliding cores in movable and stationary dies. Standards for designing die-casting dies. Adjustable dies for parts of different dimensions. Steels used for die-casting dies. Die-casting with machines of simple design. Die-casting thin sections. Brass die-casting process. Die-casting aluminum bronze by vacuum process. Unit system of die-casting. Die-casting cast iron.

Note: This book deals with die-casting machines from the earliest to the latest types, with the design of dies from the simplest to the most highly developed, with die-designing standards, and with various die-casting alloys. It contains illustrated descriptions of a large number of die-casting operations, including brass and cast iron.

HERBERT D. HALL FOUNDATION

The machine tool primer. Newark, N.J.: Herbert D. Hall Foundation, 1943. 277 p. illus. 26 cm. \$1.50. 3591a

Contents: Part I, What machine tools are used for: Things machine tools make. Metal-working processes in general. Mass production explained. Skills in the machine shop. Fits, gaging and inspection. Organizing for production—tooling up. Efficiency—time and motion study. Part II, What machine tools are: Drills and drilling machines. The metal-working lathe. Turret lathes and automatic lathes. Planing and shaping. Milling machines. Grinding machines. Press working of metals. Index.

Note: A broad introduction to the subject of machine tool use and operation, written in clear and simple language. It is intended as an aid to learners in technical schools and in specialized machine shop training courses, as well as a guide to adult workers who wish to improve their knowledge of machine shop technique. Part I is a general discussion of metal-working processes and the various uses to which machine tools are put. Part II, while not a detailed explanation of the operation of all types of machine tools, does describe tools utilizing the basic operations of drilling, turning, and boring; planing and shaping; milling and grinding. The book is well illustrated with photographs and diagrams.

HINMAN, CHAUNCEY WEED

Die engineering layouts and formulas, a reference book illustrating and describing the key designs of punches and dies based on precept and formulas. New York: McGraw-Hill Book Company, Inc., 1943. 497 p. illus. 23 cm. \$5.00. 3592

Contents: Sheet metal economy in the pressroom. Types of blanking dies. Progressive dies. Bending and forming dies. "Cut-and-carry" progressive dies. Laying out dies in consecutive order. Perforating and piercing. Methods of feeding. Drawing shells. Calculating shell blank sizes. Fabricating aircraft parts. Hydrostatic dies. Forging, coining, swaging, extruding. Welding. Miscellaneous pressroom equipment and materials. Tables and charts.

Note: A practical guide and reference for the tool engineer explaining the basic mechanical principle of assembled die designs and describing clearly their attendant operating details. The book includes all the necessary mathematical formulas for laying out the assembled dies in a clearly rendered drafting technique. Nearly 400 drawings and photographs are shown representing about 90 per cent of the key designs used in tools for presswork.

HINMAN, CHAUNCEY WEED

Pressworking of metals; a reference book illustrating and describing practical application of the principles used in the design of punches and dies. New York: McGraw-Hill Book Company, Inc., 1941. 443 p. illus. 23 cm. \$4.00. 3593

Contents: Introduction. Types of presses and their selection. Stamping and forming mild steels. Stamping and forming non-ferrous metals. Specifications for ordering sheet materials. Pressworking nonmetallic materials. Press accessories and attachments. Chutes, magazines, hoppers, roll feeds, and dials. Preliminary steps in die engineering. Automatic stops. Blanking and cutting dies. Two-step die operations. Progressive dies. Developing the blank and scrap strip. Shaving, burnishing, broaching, and trimming. Sectional dies and inserts. Bending, forming, embossing, and folding. Assembling dies. Coining, swaging, cold sizing, and extruding. Drawing dies. Low-cost tools for limited production. Special dies and novel operations. Mathematics for press tools and presses.

Note: A manual to aid in the more economical and effective production of all types of press work, covering methods, practical designs, and reference data for the designer. Shows how to select presses, covers workability of materials, gives many basic tool designs demonstrating principles that may be adapted to a wide variety of specific presswork problems. Includes use of press accessories and attachments, short-cut calculations and designs, drawing of cartridge shells, practical mathematics of press work, and other features.

JONES, FRANKLIN DAY, EDITOR

Die design and diemaking practice; a treatise for die designers and die-makers, containing illustrated descriptions of a large variety of selected dies for all kinds of power press operations, with practical information and data on approved designing practice and die construction. Second edition. New York: The Industrial Press, 1941. 956 p. illus. 23 cm. \$6.00, plus foreign postage. 3594

Contents: Dies for cutting blanks from flat stock. Methods of determining blank diameters. Laying out blanking dies and general diemaking practice. Punch and die details. Stops for controlling position of stock. Sectional punch and die construction. Blanking dies for rotor and stator laminations. Piercing and perforating dies. Sub-press or self-guiding dies. Action of metal in shearing and wear of cutting edges. Bending and forming dies. Classes of drawing dies and general designing information. Dies for drawing shallow cups or shells. Dies for drawing deep shells. Dies for drawing shells having wide flanges. Drawing dies for conical or tapering forms. Deep-drawing operations on conical-shaped parts. Drawing dies for spherical and oval shapes. Drawing square and rectangular shapes. Expanding dies of rubber and hydraulic types. Dies for special operations. Index.

Note: A guide and general reference work for those who design, make, or use dies for blanking, forming or drawing sheet-metal parts. Descriptions and drawings of a variety of dies are given, with data on die construction and use. The chapter on dies for specific operations has been expanded in this edition, and a new chapter included on the designing of dies for inclinable presses.

JONES, FRANKLIN DAY, EDITOR

Jig and fixture design; a treatise covering the

principles of jig and fixture design, the important constructional details, and many different types of work-holding devices used in interchangeable manufacture. Third edition. New York: The Industrial Press, 1942. 382 p. illus. 23 cm. \$3.00, plus foreign postage. 3595

Contents: Principles of jig design. Design of open drill jigs. Design of closed or box jigs. Jig bushings. Locating points and adjustable stops. Jig clamping devices. Examples of drill jig design. Boring jigs. Milling and planing fixtures. Adjustable fixtures for turret lathes and vertical boring mills. The floating principle as applied to fixture work. Application of the three-point principle in fixtures. Special jig and fixture mechanisms. Providing for upkeep in designing jigs and fixtures. Arc welded jigs and fixtures. Jigs of the automatic type.

Note: A discussion of the principles underlying the development of various classes of jigs and work-holding devices. Illustrations are given of designs used in modern shops, including jigs for drilling, boring, planing, and milling. New chapters in this edition cover the design of universal drill jigs and plastic jigs and their application.

KARASH, J. I.

Analysis of drill-jig design. New York: McGraw-Hill Book Company, Inc., 1944. 333 p. illus. 22 cm. \$3.00. 3596

Contents: Outline of design practice. Gathering information. Analysis of drilling operations. Machine decision. Principles of locating. Clamping. Secondary-operations jig features. Positioning features. Chip control. Principles of interchangeability. Justification. Index.

Note: This book for students and practicing engineers aims to create an orderly and systematic perspective of sound thinking for drill-jig design. The scope of the work is limited to a discussion of the mental processes involved in tool design, and the problems of design are presented in terms of a list of desirable objectives based on the purpose the drill-jig is to serve. Numerous examples are given of the method of analyzing each problem by breaking it down into phases based on the sequence of standard operations in machine shops.

MARSHALL, EDWIN GEORGE

Practical die design and die making. New York: McGraw-Hill Book Company, Inc., 1937. 144 p. illus. 23 cm. \$2.00. 3597

Contents: Introduction. Blanking dies. Piercing dies. Progressive dies. Compound dies. Shaving dies. Broaching dies. Forming dies. Trimming dies. Drawing dies. Extruding dies. Swaging dies.

Note: Offers a practical treatment such as will help drafting room and machine shop men to secure a broad view of dies and to acquire practical skill in handling a variety of these jobs. Gives descriptions and illustrations of a number of different die-making jobs, presenting only tested methods that have been worked out successfully in shop practice.

ROE, JOSEPH WICKHAM, AND CHARLES W. LYTLE

Factory equipment. Second edition. Scranton, Pa.: International Textbook Company, 1937. 517 p. illus. 21 cm. (International texts in mechanical engineering, C. F. Taylor, consulting editor) \$4.00. 3598

Contents: Building and manufacturing. The drafting department. Pattern making and woodworking. Smelting and remelting. Metals used in industry. Foundry molding. Hand and power forging. Die forging and casting. Pressing, stamping and spinning. Welding, soldering and brazing. Heat treating. The tool room: gauges and inspections. Tools for cutting metals. Turning. Boring mills and boring machines. Drilling. Planing, shaping, slotting and broaching. Milling. Gear cutting. Screw thread cutting. Grinding. Selecting equipment. Designing jigs and fixtures. Materials handling. Appendixes. Index.

Note: The essential principles of machine tool operation are stressed in this text and reference work for the practicing engineer and student. Production machinery is studied from the point of view of its selection and with reference to its applica-

tion for economic production. A comprehensive treatment of detail operation is not attempted. Sample questions and a list of references are added to each chapter. The appendixes include such details as the trade designation of metals, effects of alloying elements on steel, classification of stainless steels, and other data. The only changes in the second edition are additions to the list of references.

STANLEY, FRANK ARTHUR

Punches and dies; layout, construction and use, including Wartime data supplement. Third edition. New York: McGraw-Hill Book Company, Inc., 1943. 509 p. illus. 23 cm. \$4.00. 3599

Contents: Preface to the third edition. Preface to the first edition. Types and applications of press tools. Production of metal blanks. Dies for piercing and blanking. Principles of compound die construction. Tools for cutting-off operations. Shaving dies and shaving allowances. Trimming tools. Dies for trimming and shaving. Side-operating tools. Drawing dies and drawing methods. Combination dies and compound dies. Methods of bending and forming. Further bending and forming applications. Horn dies and miscellaneous tools. Dies for embossing, riveting and swaging. Indexing and transfer dies. The sub press and its dies. Large dies for automobile and other work. Punch and die standards. Finding the size of blanks for shells and other drawn work. Laying out and making templets and dies. Locating holes accurately in die work. Making a set of shaving dies. Some hardening principles applied to dies. List of references. Index. Wartime data supplement. Index to Wartime data supplement.

Note: A manual on punch and die work intended for practical workers, die makers, tool makers, and tool draftsmen, showing the layout and construction of punches and dies for specific types of work. Revision to second edition (1936) consists of a thirty-two page Wartime data supplement, including current methods in airplane press work, shell stripping, and tool making.

WAGENER, ALBERT M., AND HARLAN R. ARTHUR

Hand tools. New York: D. Van Nostrand Company, Inc., 1943. 174 p. illus. 21 cm. \$1.75. 3600

Contents: Rules and scales. Dividers and calipers. Combination square. Screw and wire gages. Miscellaneous semi-precision tools. Micrometers. Vernier gages. Specialized precision tools. Indicators. Hand shaping, forming, and marking tools. Turning and gripping tools. Tools for holding work at the bench. Miscellaneous holding devices used at machines. Hole-forming tools. Machine cutters and their holders. Miscellaneous tools. Types of fasteners.

Note: This reference manual discusses in detail the many hand tools found in the machine shop of the large factory. The use of each tool is explained, with close-up photographs that show how it is held and manipulated. These illustrations and directions have been prepared to instruct the novice, but, at the same time, they are sufficiently detailed to serve the special needs of the experienced machinist and home craftsman.

Machine Shop Practice

AMERICAN SOCIETY OF MECHANICAL ENGINEERS

Manual on cutting of metals, single-point lathe tools, prepared by A. S. M. E. Committee on Metal Cutting Data. New York: The American Society of Mechanical Engineers, 1939. 319 p. illus. 22 cm. \$5.00. 3601

Contents (abridged): Part I, Factors influencing the cutting of metals. Part II, Tabular data on cutting speeds and horsepower for various feeds and depths of cut when cutting steel and cast iron. Part III, Methods of calculating cutting speed, chip pressure, horsepower, and economic tool life for any given conditions. Bibliography. Index.

Note: This volume is designed for the mechanical engineer, production executive, machine designer, or shop mechanic. It is based on a comprehensive survey of all data available at the time of preparation, both published and unpublished, and experiments made under the direction of the Committee. A considerable

portion of the information included is presented in tabular form. The bibliography is international and includes 104 references.

AMERICAN SOCIETY FOR METALS

Surface treatment of metals. This book contains the papers and discussions constituting the symposium on the surface treatment of metals presented before the twenty-second annual convention of the American Society for Metals held in Cleveland, October 21 to 25, 1940. Cleveland: American Society for Metals, 1941. 427 p. illus. 23 cm. \$5.00. 3602

Contents: Anodic treatment of aluminum, by Junius D. Edwards. The passivation and coloring of stainless steel, by G. C. Kiefer. The surface treatment of magnesium alloys, by H. W. Schmidt and others. Corrosion resistance of tin plate—influence of steel base composition on service life of tin plate containers, by R. R. Hartwell. Zinc coatings—unit operations, costs and properties, by J. L. Bray and F. R. Morral. Diffusion coatings on metals, by Frederick N. Rhines. Surface reactions and diffusion, by J. E. Dorn and others. Heat treating with induction heat, by Edmund Blasko. Inherent characteristics of induction and hardening, by M. A. Tran and H. B. Osborn, Jr. Flame pretreatment of structural steel surfaces for painting, by J. G. Magrath. Shot blasting and its effect on fatigue life, by F. P. Zimmerli. Effect of surface conditions on fatigue properties, by O. J. Horger and H. R. Neifert. Chip formations, friction, and high quality machined surfaces, by Hans Ernst and M. Eugene Merchant. Observations on the tarnishing of stainless steels on heating in vacuo, by Vernon C. F. Holm. The tracer method of measuring surface irregularities, by Ernest J. Abbott.

Note: The papers in this volume are for specialists. Most of them are accompanied by bibliographies and all of them are accompanied by discussion.

AMISS, JOHN M., AND OTHERS

Shop mathematics and shop theory, by John M. Amiss, Gordon Keith Shurtleff, and Hughitt G. Moltzau. New York: Harper & Brothers, 1943. 360 p. illus. 20 cm. \$2.00. 3603

Contents: Preliminary mathematical processes. Logarithms. Mensuration. Geometry. Trigonometry. Application of shop mathematics. Blueprint problems. Safety and fire protection. Manufacturing methods. Gages and measuring instruments. Cutting tools. Composition and heat treatment of cutting tools. Gearing. Machine tools. Handbook projects. Special subjects. Appendix. Index.

Note: A manual for shop men, worked out by the Chrysler Corporation for use in their apprentice-training system. It provides complete instructions for using the enormous amount of standard data contained in shop handbooks, and enables shop workers to solve problems with speed and accuracy and to check their answers. It is designed for use with any standard handbook.

AXELROD, AARON

Machine shop mathematics. New York: McGraw-Hill Book Company, Inc., 1942. 368 p. illus. 23 cm. \$2.50. 3604

Contents: Measuring tools of the machine shop. Weights and measures. Practical measurements. Graphical charts. Geometric constructions. Shop trigonometry. Belting. Speeds of pulleys and gears. Speeds and feeds. Lathe work. Gears. Milling-machine work. Tables.

Note: Presents fundamental mathematical facts and procedures which will enable the apprentice and mechanic in the trade to solve mathematical problems of the everyday jobs of the shop.

BARRITT, JOHN W., AND E. T. LARSON

Machine shop operations. Chicago: American Technical Society, 1942. 867 p. illus. 28 cm. \$6.00. 3605

Contents: Measuring tools. Bench work. Layout work. The drill press. The lathe. The shaper. The planer. Horizontal boring mill. Vertical boring mill. The slotter. The milling machine. Floor work. Grinder.

Note: A loose-leaf volume made up of twelve leaflets, prepared by the former supervisor of apprentices of the Westinghouse Electric & Manufacturing Company. Each section, which is complete in itself, describes in detail typical jobs which a skilled mechanic must be able to perform, the construction and operation of machine tools, and their uses. Numerous diagrams and illustrations supplement the textual material; there is a detailed table of contents but no index.

BEGEMAN, MYRON LOUIS

Manufacturing processes. New York: John Wiley & Sons, Inc., 1942. 579 p. illus. 23 cm. \$4.50. 3606

Contents: Foundry practice. Pattern work. Metal casting. Die casting. Plastic molding. Heat treatment of steel. Welding, soldering, and hard surfacing. Hot and cold forming of metals. Inspection—measuring instruments and gages. Lathes, lathe work, and lathe tools. Threads and thread cutting. Shapers and planers. Drilling and boring machines. Milling machines and cutters. Gears and gear-cutting machines. Metal sawing. Broaching machines and tools. Turret and automatic lathes. Abrasives, grinding wheels, and grinding machines. Appendixes: Classification of SAE steels. Suggested laboratory projects. Index.

Note: This book presents the technical fundamentals of manufacturing processes, engineering materials, and modern equipment necessary for processing these materials. The first half of the book is devoted to the characteristics of materials most commonly used in production and the methods used in working them to the desired shape. The latter part of the book describes the various production machines, accessories, and cutting tools, and discusses their range of application and limitations. Photographs and line drawings illustrate the text.

BENEDICT, OTIS, JR.

Manual of machine shop practice. New York: McGraw-Hill Book Company, Inc., 1944. 249 p. illus. 19 cm. \$1.75. 3606a

Contents: Preface. Chisels and files. Cutting speeds. Time for machining. Screw threads. Tapers. The spiral head. Tolerances and allowances for machine parts. The use of common precision measuring devices. Press tools. Typical standard die sets. Machine tool analysis. Experiments: Hand tools and their use. The lathe. Drilling machines. The milling machine. The shaper. The planer. Small tools and precision measuring instruments. The spiral head. Gauges and gauging. Precision methods of locating holes. Appendix.

Note: Based on courses given at the Pratt Institute, School of Science and Technology, this manual is intended to provide a collection of useful information for the student of machine shop practice. Ten experiments which can be performed in the shop and which will further acquaint the student with his tools are briefly outlined. The appendix includes tables and information relating to screw threads, gauges, A.S.M.E. standards for metal fits, blanking die data, etc.

BLOMMEL, WILLIAM R., AND OTHERS

Elementary rivet theory, by William R. Blommel, Lt. Benjamin W. Wheatley, and Edwin L. Johnson. New York: D. Van Nostrand Company, Inc., 1943. 57 p. illus. 23 cm. \$1.00. 3606b

Contents: Safety. Fractions and scale. Layout procedure. Drilling procedure. Rivet computations. Riveting procedure. Aluminum and its alloys. Rivets. Inspection and repairs. Special forms of riveting. Formulas. Code in decimal equivalents.

Note: A beginner's text for students who have no previous knowledge of riveting. Directions and practical suggestions for the various operations in riveting are given, and illustrations show how the tools are held and used.

BLUM, WILLIAM, AND GEORGE B. HOGABOOM

Principles of electroplating and electroforming (electrotyping). Second edition. New York: McGraw-Hill Book Company, Inc., 1930. 424 p. illus. 24 cm. \$4.50. 3606c

Contents: Methods of expressing conditions of operation. Principles of chemistry. Elementary principles of chemical analysis. Principles of electricity. Principles of electrochemistry. Factors governing the character of the deposits. Selection, specification and inspection of electrodeposits. Preparation for electroplating.

Preparation for electroforming. Electrical equipment. Tanks and their equipment. Copper deposition. Nickel deposition. Cobalt and iron deposition. Chromium deposition. Deposition of zinc and cadmium. Lead and tin deposition. Silver deposition. Gold and platinum deposition. Deposition of alloys. Experiments in electrodeposition. Appendix. Index.

Note: This book is intended to instruct platers in some of the chemistry of their subject and to inform chemists of some of the techniques of plating. Although parts of the book are elementary, the treatment in most of the text is for specialists rather than beginning students. This edition contains new material on chromium plating.

BOSTON, ORLAN WILLIAM

Metal processing. New York: John Wiley & Sons, Inc., 1941. 630 p. illus. 23 cm. \$5.00. 3607

Contents: An introduction to the study of machines, tools, and processes. Lathes. Shapers. Planers. Nomenclature and materials for single-point tools. Cutting fluids. Machinability—single-point tools. Milling. Sawing. Drilling, boring, reaming, and threading. Turret lathes, screw machines, and hand-operated production turning machines. Automatic turning machines. Broaching. Gears and their manufacture. Grinding, polishing, buffing, honing, and lapping. Presses, punches and dies, and formed parts. Die casting and molding. Measuring and gaging. Machine tool drives. Accounting and costs. Index.

Note: A practical and technical presentation of information and instructions relating to all aspects of the subject. Emphasis is placed upon the classification of machines into various types and subgroups. The objective is to acquaint the reader with machines, accessories and tools, so that he may plan for production. Accordingly the book correlates design, metals (metallurgy and fabricated forms), and manufacture. Engineering specifications and standards are given. Lists of questions and pertinent reading references appear at the end of each chapter. The book represents a modern and revised form of the author's *Engineering shop practice*, New York, 1933-35, 2 v., condensed into a single volume.

BROEMEL, LOUIS

Sheet metal workers' manual: a complete, practical instruction book on the sheet metal industry, machinery and tools, and related subjects, including the oxy-acetylene welding and cutting process, with a special course in elementary and advanced sheet metal work and pattern drafting for technical and trade school instructors and students; also for reference and study by sheet metal workers and apprentices, by J. S. Daugherty. Chicago: F. J. Drake & Co., 1941. 542 p. illus. 18 cm. \$2.00. 3608

Contents: The sheet metal industry: Sheet metal working machinery. Sheet metal working tools. Sheet metal working school shop equipment. Course in elementary and advanced sheet metal work and pattern drafting. Outline course in sheet metal work—emergency war training. Oxy-acetylene welding and cutting. Electric welding. Hand forging and welding. Course in forge practice. Outline course in hand forging and welding—emergency war training. Brazing. Pipe bending. Properties of metals and their alloys. Practical geometry and mensuration. Useful tables. Stainless steel. Index.

Note: A manual for practical workers and vocational students. Courses in sheet metal work and pattern drafting, forge practice, and hand forging and welding are presented in outline form, with special emphasis on training for war work.

BUELL, CLAYTON E.

Mathematics for the sheet metal worker in general and aircraft shops. New York: Pitman Publishing Corporation, 1943. 199 p. illus. 21 cm. \$2.00. 3609

Contents: Common fractions and decimals. Layout of angles, lines, and figures. Use of formulas. Measurement of lengths. Bend allowance. Measurement of areas and weights. Measurement of surface area and volume. Graphs. Template development from tables. Shop trigonometry. Bend allowance by set-back method. Measurement of irregular areas and volumes. Strength of ma-

terials. Ventilation of compartments. Appendix—Tables and formulas. Answers to problems. Index.

Note: A well-planned text for vocational and apprentice schools as well as for home study. Emphasis throughout is upon practical application.

BURDEN, WILLIAM WILSON

Broaches and broaching. New York: Broaching Tool Institute, 1944. 97 p. illus. (part col.) 28 cm. \$3.00. 3610

Contents: Sponsoring members of Broaching Institute. Foreword. Broaching is at least 90 years old (historical sketch). Advantages, applications, and limitations of broaching. Types of broaches. Broach cutting action. Material to be broached. Broach design. Broach cost factors. Information needed for design, manufacture, and quoting broaches. Handling broaches. Sharpening broaches. Broaching machines. Setting up the broaching machine. Fixtures. Cutting fluids. An open letter to broach users. Index.

Note: A brief handbook presenting the broaching technique or process of metal cutting which combines both roughing and finishing and which removes stock to precision limits faster than any other known metal cutting process. Information is presented on the most effective practices current as of 1944. The work is not only intended as a guide to the machine operator but also summarizes the advantages and applications of broaching for industrial engineers and plant owners. There are a large number of photographs showing broaching machines and tools.

BURCHARDT, HENRY D.

Machine tool operation. New York: McGraw-Hill Book Company, Inc., 1937-41. 2 v. illus. 19 cm. Vol. I, \$2.25; Vol. II, \$2.75. 3611

Contents: Volume I, The lathe, bench work and work at the forge. Volume II, Drilling machine, shaper and planer, milling and grinding machines, hydraulic power transmission, gears.

Note: An introductory text for the practical machinist on the construction and operation of machines used in his work. Volume I represents the third edition and volume II the second edition of the work. In these revisions new material has been added on hand forging operations, including a discussion of the principles, the names and uses of the tools, and the correct methods of heating, holding, and hammering a piece of wrought iron or steel.

BURNHAM, REUBEN WESLEY

Mathematics for machinists. Second edition. New York: John Wiley & Sons, Inc., 1943. 253 p. illus. 18 cm. \$2.00. 3612

Contents: Common fractions. Decimal fractions. Percentage. Blueprints. Measurements. Constructions. Powers, square root. Lathe work. Threads. Thread cutting. Planer, shaper, drill press. Simple machines. Work, power, ratio. Gear calculations. Milling machine. Volume and weight. Shop trigonometry. Materials and processes. Appendix. Answers to problems. Index.

Note: A book on mathematics as applied to machine shop operations which is simple enough to be understood by the machinist with even a limited knowledge of simple arithmetic, yet is designed to give him a good working knowledge. In revising the book for this edition the author recognized the fact that although the fundamentals of mathematics and machine shop practice do not change, new ways of applying principles are constantly being developed. Outmoded portions of the book have been rewritten. New problem material has been added, as well as a brief discussion of safety methods and motion and time study.

BURNS, ROBERT MARTIN, AND A. E. SCHUH

Protective coatings for metals. New York: Reinhold Publishing Corporation, 1939. 407 p. illus. 23 cm. (American Chemical Society monograph series. No. 79) \$6.50. 3612a

Contents: Preface. Foreword. Protective coatings and the mechanism of corrosion. Surface preparation for the application of coating. Types of metallic coatings and methods of application. Zinc coating by hot-dipping process. Zinc coating by electroplating and cementation. Protective value of zinc coatings. Cadmium coatings and their protective value. Tin coatings. Nickel and chromium coatings. Coatings of copper, lead, aluminum and miscellaneous metals. Coatings of noble and rare metals. Methods of testing metallic coatings. Composition of paints and mechanism of film formation. The durability and evaluation of paints. Paint practices. Miscellaneous coatings. Author index. Subject index.

Note: This work is written primarily for persons concerned with the selection of protective metal coatings. Although considerable information is included on the techniques of processes, the book is not designed for electroplaters or technicians specializing in other types of coatings. There are extensive footnote references to pertinent literature, including patents. The book originated when the authors undertook a revision of Henry S. Rawdon's *Protective metallic coatings*, New York 1928. However, this is essentially a new book. It is 128 pages longer than the older one, and a large proportion of the subject matter deals with developments since 1928.

CLAPP, WILLIAM HOWARD

Engineering materials and processes; metals and plastics. Scranton, Pa.: International Textbook Company, 1938. 543 p. illus. 21 cm. (International texts in mechanical engineering, C. F. Taylor, consulting editor) \$4.50. 3613

Contents: Materials. Engineering materials. Structure of metals and alloys. Cooling curves and equilibrium diagrams. Metallurgy, properties, and uses of ferrous metals. Alloys, I: The manufacture of iron and steel. Metallurgy, properties, and uses of ferrous metals. Alloys, II: Control of properties. Metallurgy, properties and uses of ferrous metals. Alloys, III: The alloy steels and cast-irons. Metallurgy, properties and uses of non-ferrous metals and alloys. Plastics and plastic molding. Processes. Production of castings. Hot working of metals. Cold forming of metals. Joining of metals. Machine shop production methods. Lathes, boring mills and screw machines. Milling and drilling operations. Shapers, slotters, planers, broaching machines, and saws. Gears, gear cutting and gear cutting processes. Abrading, grinding, and finishing processes. Index.

Note: A treatment of physical properties and uses of principal engineering materials—metals and plastics—together with a description of methods by which these materials are processed. The book was developed from material used in a sophomore engineering course at the California Institute of Technology.

COLVIN, FRED HERBERT, AND FRANK A. STANLEY

American machinists' handbook and dictionary of shop terms; a reference book of machine-shop and drawing-room data, methods and definitions. Seventh edition, revised and enlarged. New York: McGraw-Hill Book Company, Inc., 1940. 1366 p. illus. 17 cm. \$4.00. 3614

Contents: Screw threads. Pipe and pipe threads. Drilling. Reamers and reaming. Taps and tapping. Files and work benches. Babbitting, brazing, soldering and welding. Gearing. Turning and boring. Milling machine speeds and feeds. Grinding, honing and lapping. Screw machine tools, speeds, and feeds. Punch press tools. Broaches and broaching. Bolts, nuts, and screws. Measuring and fitting. Tapers and dovetails. Shop and drawing room standards. Wire gages and stock weights. Horse-power, belts and shafting. Metals and other materials. Machine forgings. Knots and slings. General reference tables. Automotive data. Railroad shop data. Shop trigonometry. Dictionary of shop terms. Index.

Note: This handbook presents in convenient form the data necessary to practical men in various branches of machine work, including methods and definitions for apprentices, machinists, draftsmen, designers, and all others connected with shop and drafting-room practice in the metal-working and allied industries. Hundreds of tables of data are presented. The seventh edition contains new material on jig bushings, lathe spindles and chucks, milling machine spindles, machine fits, and new materials and cutting tools. A *Wartime data supplement* of 154 pages is available in paper cover from the same publisher for \$1.00. It covers changes which have been found advisable to secure increased production and includes certain wartime specifications.

COLVIN, FRED HERBERT, AND FRANK A. STANLEY

Drilling and surfacing practice; drilling, reaming, tapping, planing, shaping, slotting, milling, and broaching, including wartime data supplement. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 476 p. illus. 23 cm. \$4.00. 3615

Contents (abridged): Section I, Drilling: Drills and drilling machines. Drill points and troubles. Drill shanks, speeds, and feeds. General drilling information. Deep-hole drilling. Various drilling operations. Types of drilling machines. Section II, Reaming and tapping: Design, construction and use of reamers. Taps and screw threads. Section III, Planers and shapers: Planers, shapers and slotters. Care of planers. Planer tools. Methods of driving planers. Planers and their work. Shapers. Shaper tools and work. The slotting machine. Section IV, Milling: Primary milling operations. General milling operations. Types of milling machines. Planetary milling machines. Universal indexing centers. Milling-machine attachments. Cutting helices on the milling machine. Section V, Milling cutters: Milling cutters. Milling cutters and their uses. Cutters for milling large plain surfaces. High-speed and other milling cutters. Care of milling cutters. Section VI, Broaching: General information about broaching. Commercial broaching. External or surface broaching.

Note: A practical training book in the various operations performed in drilling and surfacing materials. The book covers the cutting of materials, the care of tools, methods of production, in a plain, understandable, well-illustrated treatment, according to practice followed in leading shops of the country.

COLVIN, FRED HERBERT

Gages and their use in inspection. New York: McGraw-Hill Book Company, Inc., 1942. 157 p. illus. 19 cm. \$1.50. 3616

Contents: Gages and how they are used. Measuring instruments in common use. Types of gage. Gage tolerances and gage wear. Gage blocks and dial gages. Reed and air gages. Threads and thread gages. Special types of gages. Interchangeable manufacture and inspection. Salvaging and selective assembly. Kinds of fit.

Note: A practical introduction to gages of all types, designed especially for those who wish to become inspectors. The various types are described, with information on their manufacture and use in different kinds of work.

COLVIN, FRED HERBERT, AND FRANK A. STANLEY

Grinding practice; typical machines and methods used in a wide variety of work, including Wartime data supplement. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 350 p. illus. 23 cm. \$3.00. 3617

Contents: The grinding machine in industry. Typical grinding machines. Cylindrical grinding in general. The centerless grinder. Centerless-grinding operations. External and internal grinding. Size control in precision grinding. Examples of precision grinding. Automatic and semiautomatic equipment. Surface grinders and their work. Grinding crankshafts and other motor work. Grinding heavy rolls. Cutter and tool grinding methods. Types and uses of grinding wheels. Mounting and dressing wheels. Lapping and honing machines. Polishing and buffing. The magnetic chuck. Index. Wartime data supplement. Index to supplement.

Note: This textbook for students in vocational schools is adaptable for use in adult training programs as well. The volume gives a broad, general view of the machines and methods used in modern grinding practice, with typical examples of the more widely used types of machines and details of the average grinding operation. Tables of data are given throughout the text and there are detailed drawings and photographs of machine parts and assemblies. The second edition is a reprint of the first with the addition of a "wartime data supplement" giving special features of grinding work applicable to the production of gun barrels, propellers, engine cylinders, and the like.

COLVIN, FRED HERBERT

Planing, shaping and slotting. New York: McGraw-Hill Book Company, Inc., 1943. 125 p. illus. 19 cm. (A McGraw-Hill practical manual) \$1.25. 3618

Contents: Planers. Shapers and slotters. Cutting tools for planers, shapers, and slotters. Clamping work for planing and shaping. Setting up work on the planer. Shapers. Ways of holding work. Examples of shaper work. Slotting machine.

Note: A manual presenting the essentials of the use, setting-up, and operation of planers, shapers, and slotters for beginners in this branch of machine shop work. Examples are taken from some of the best known machines of each class, with illustrations of the machines and names of the principal parts, kinds of work done, recommended tools, work-holding methods, etc.

COLVIN, FRED HERBERT

Running an engine lathe; practical suggestions which will give the young machinist or apprentice the foundation principles of engine lathe work. New York: McGraw-Hill Book Company, Inc., 1941. 117 p. illus. 19 cm. \$1.25. 3619

Contents: The engine lathe. Centering lathe work. Driving the work. Tools and turning. Steady and follower rests. Face-plate work. Chucks and chucking. Boring tools. Taper turning. Cutting screw threads. Test indicators and their use. Three types of centering mandrels. Care of the lathe.

Note: This book gives the beginner an introduction to machine-shop work by explaining the practical operation of one of the most fundamental and useful machines—the engine lathe. It covers the lathe and its care, tells how to prepare work and hold it in the lathe, how to set and use the tools, how to do taper work and thread-cutting, etc.

COLVIN, FRED HERBERT, AND FRANK A. STANLEY

Running a machine shop. New York: McGraw-Hill Book Company, Inc., 1941. 449 p. illus. 23 cm. \$3.50. 3620

Contents: Modern machine-shop practice. Planning a shop. Shop equipment. Shop transport and materials handling. Tool-rooms and tool cribs. Work in the shop. Estimating. Apprenticeship and training. Management. Foremen and personnel relations. Inspection systems.

Note: Gives owners and managers of machine shops, both large and small, management pointers for more efficient and profitable operation. Covers various topics from shop layout to inspection methods—how to equip the shop, how to route and handle work, how to estimate, how to train workers, etc.—with workable methods and suggestions taken from the practice of leading shops of all types and sizes.

COLVIN, FRED HERBERT

Running a milling machine. New York: McGraw-Hill Book Company, Inc., 1941. 157 p. illus. 19 cm. \$1.50. 3621

Contents: Introduction. Examples of milling machine work. Milling cutters. Speeds and feeds of milling cutters. Setting cutters for different kinds of work. Milling vises and fixtures. The dividing head. A wide-range dividing head. Cutting helices, sometimes called spirals.

Note: A simply written book for beginning machinists. It is intended to give the reader enough understanding to enable him to set up work on any of the common U.S.A. makes of milling machine.

COLVIN, FRED HERBERT, AND FRANK A. STANLEY

Turning and boring practice; modern machines, tools, and methods used in representative plants, including wartime data supplement. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 496 p. illus. 23 cm. \$4.00. 3622

Contents (abridged): Modern machine-shop practice. The lathe. Chucks and chucking. Tapers—turning and boring. Thread cutting. Fundamentals of lathe accuracy. The turret lathe. Semi-automatic lathes. Automatic screw-machine work. Setting up and operating automatic-screw machines. Multiple-spindle automatic-screw machines. Collets, chucks, and tools. Screw-machine taps, dies and forming tools. Boring machines. Single-point tools. Cemented-carbide tools. Speeds and machineability. Suggestions for machining various metals. Machining nonmetallic materials. Functions of cutting oils. Index. Wartime data supplement. Index to wartime data supplement.

Note: A practical guide for everybody, from shop executives to apprentices, interested in the operation of machines used in turning and boring practice. After presenting the essential principles and major problems involved in the different operations, the book describes the more important varieties of machines and the methods of operating them, including data on speeds and feeds, new cutting alloys and materials, and use of coolants.

CORRINGTON, MURLAN S.

Applied mathematics for technical students. New York: Harper & Brothers, 1943. 360 p. illus. 22 cm. (Rochester technical series) \$2.80 with tables; \$2.20 without tables. 3623

Contents (abridged): Arithmetic with applications. Fundamentals of algebra. Logarithms. Quadratic equations. Simultaneous equations. Trigonometry with applications. Index.

Note: A textbook combining fundamental theory and applications, designed for use in trade schools, factory training courses, pre-engineering studies, and for home study. No previous mathematical knowledge is assumed, but enough advanced material is included so that either a long or a short course can be given by proper selection of the material. Emphasis is placed on solving problems by clear thinking rather than mere substitution of formulas, and problems are selected from the standpoint of their practical application to engineering and shop practice. No equations higher than quadratic are used.

CRANE, EDWARD VILLEROY

Plastic working of metals and non-metallic materials in presses. Third edition. New York: John Wiley & Sons, Inc., 1944. 540 p. illus. 22 cm. \$5.00. 3624

Contents: Mass production. Essential metallurgy. Shearing metal in dies. The shearing group of press operations. Bending operations. Expanding, contracting and curling. Cold-working of plastic metals. The drawing group of press operations. Drawing speed, lubrication, annealing. Cold operations of the squeezing group. Extrusion. Hot press forging. Press characteristics and modifications. Automatic production. Diversified production. Plastic states, metallic and non-metallic. Molding and forming. Appendixes: Problems. Index.

Note: In earlier editions this book was entitled *Plastic working of metals and power press operations*. It constitutes a handbook of the mass methods of press working modern materials, telling how and why metals move and are moved, for use in planning operations, dies, and molds, and in making them function. In this edition the original discussion of sheet metal working and forging has been expanded to include powdered metals, synthetic plastic powders, ceramics, papers, sheet plastics, and laminated materials of many types. Illustrations are given of tools, equipment, and methods.

DICK, ARTHUR A.

Shop mathematics, with basic and functional applications. New York: The Ronald Press Company, 1943. 230 p. illus. 21 cm. \$2.40. 3625

Contents: Arithmetic fundamentals: Fractions and decimal fractions. Review of fundamentals. Addition of tabulations. Scales and spacing problems. Conversion of decimals and fractions. Reading the micrometer. Square root, using square and cube root tables. Algebraic equations: Addition type of equation. Subtraction type. Division type. Multiplication type. Combination types. Illustrative problem using the algebraic equation. Geometrical constructions: Areas, volumes, surfaces, arcs, flats, sides, of rectangle, square, trapezoid, cube, circle, ellipse, sphere, triangle, hexagon, octagon, cone prism, cylinder, etc. Applications to floor areas, lumber measure, rings, composite figures, hollow cylinders, balls, sectors, etc. The right triangle principles, with applications. Mechanical applications: Tapers, belts, pulley speeds, threads, spur gears, introducing proper terminology. Practical trigonometry: Sine and cosine formulas.

Note: A textbook for shop mathematics courses and vocational subjects of high school equivalence. The predominant philosophy of the book is that mastering basic fundamentals is not in itself sufficient, but must be correlated and integrated with practical applications.

DOANE, FOSTER BAIRD

Principles of Magnaflux inspection. Second edition. Chicago: Photopress, Inc., 1942. 288 p. illus. 23 cm. \$2.50. 3625a

Contents: Introduction. Magnetism. The Magnaflux method. Magnetizing methods. Magnetizing current characteristics. The inspection medium. Detectable defects. Non-detectable defects. False indications. Weld inspection. Demagnetization. Interpretations of indications. Subject index.

Note: This volume, copyright by Magnaflux Corporation, Chicago, was written by the vice president of Magnaflux Corporation to set down the basic principles of the Magnaflux method of in-

specting steel products. It is an improved and enlarged edition of the edition published in 1940. Magnaflux operating technique for aircraft inspection is covered in a companion volume, *Magnaflux aircraft inspection manual*, by F. B. Doane and W. E. Thomas (see Index).

DODGE, HAROLD FRENCH, AND HARRY G. ROMIG

Sampling inspection tables: single and double sampling. New York: John Wiley & Sons, Inc., 1944. 106 p. illus. 22 cm. \$1.50. 3625b

Contents: Introduction. A method of sampling inspection. Single sampling and double sampling inspection tables. Using double sampling inspection in a manufacturing plant. Sampling inspection tables. Index. Charts.

Note: A reprint of three articles which appeared originally in the *Bell System technical journal*. The purpose of the papers is to outline sampling inspection methods for the use of manufacturers, which will be satisfactory to both producer and consumer from the points of view of inspection costs and the elimination of defective products.

ELECTROCHEMICAL SOCIETY

Modern electroplating. New York: The Electrochemical Society, Inc., 1942. 399 p. illus. 23 cm. \$5.50. 3625c

Contents: General principles and methods of electroplating, by William Blum, A. O. Beckman and W. R. Meyer. Alloy plating, by C. L. Faust. Brass plating, by H. P. Coats. Cadmium plating, by Gustaf Soderberg and L. R. Westbrook. Chromium plating, by George Dubpernell. Cobalt plating, by Gustaf Soderberg, W. L. Pinner and E. M. Baker. Acid copper electroplating and electroforming, by J. Homer Winkler. The high efficiency cyanide copper bath, by H. L. Benner and C. J. Wernlund. Rochelle copper plating, by A. Kenneth Graham and Harold J. Read. Gold plating, by Louis Weisberg and A. Kenneth Graham. Iron deposition, by C. T. Thomas. Lead plating, by Allen G. Gray and William Blum. Nickel plating, by W. L. Benner, Gustaf Soderberg and E. M. Baker. Electrodeposition of the metals of the platinum group, by K. Schumpelt. Silver plating, by N. E. Promisel and Donald Wood. Electrodeposition of tin from acid solutions, by Paul R. Fine. Alkaline tin plating, by F. F. Oplinger and Fred Bauch. Acid zinc plating, by Ernest H. Lyons, Jr. Cyanide zinc plating baths, by R. O. Hull and C. J. Wernlund. Appendix. Index.

Note: A comprehensive reference book for electroplaters which presents tested methods of electroplating. Each paper is preceded by an abstract and followed by a discussion. References to source material are given in footnotes. Technical in presentation.

FELKER, CHARLES AURAND, AND H. W. PAINE

Milling-machine indexing. New York: The Bruce Publishing Company, 1942. 88 p. illus. 23 cm. \$1.50. 3626

Contents: Direct indexing. Simple indexing. Differential indexing. Block indexing. Compound indexing. Graduating. Index.

Note: Five accepted types of indexing are presented, with explanations and sample problems to show practical applications. Mathematical procedure is accompanied by trade information. May be used as a machinists' reference book or for engineering machine shop classes.

FELKER, CHARLES AURAND

Shop mathematics. Milwaukee: The Bruce Publishing Company, 1941. 380 p. illus. 23 cm. \$2.20. 3627

Contents: Common fractions. Decimal fractions. Square root. Percentage and its application. Applied algebra. Measuring instruments. Applied geometry—mensuration—weights. Logarithms. Shop trigonometry. Taper and taper turning. Screw threads. Pulley and gear speeds. Thread cutting on a lathe. Speeds and feeds. Gears. Indexing. Cutting spirals. Computations on work, power, and energy. Belting. The slide rule. Tables. Index.

Note: A text for use in vocational schools and vocational departments of general high schools. Shop mathematics is correlated with shop practice by means of practice material, questions on shop practice, and descriptive matter.

FREY, CHRIS J., AND STANLEY S. KOGUT

Metal forming by flexible tools. New York:

Pitman Publishing Company, 1943. 193 p. illus.
23 cm. \$3.00. 3628

Contents: Introduction. Press equipment. The rubber die. Forming. Flanging. Spring-back. Blanking. Types of drop hammers. Die manufacture. Hammer operation. The power brake. Appendix. Index.

Note: Flexible production methods to accommodate changes in design, particularly in aircraft, are discussed, such as the rubber press for shaping metal, drop hammer versatility, and the stretch press. The appendix deals with classification, nomenclature, and mechanical properties of aluminum.

GIACHINO, JOSEPH WILLIAM, AND JOHN L. FEIRER

Basic bench-metal practice and precision measuring. Peoria, Ill.: The Manual Arts Press, 1943. 160 p. illus., 26 cm. Paper, \$1.84; cloth, \$2.75. 3629

Contents: Fields of metal work. Finding size of stock for cutting. Cutting metal. Scribing a layout. Chiseling metal. Filing metal. Drilling metal. Reaming holes. Grinding, sharpening, and buffing metal. Bending, twisting, and forming metal. Decorating and finishing metal. Joining metal. Caliper and gauge reading. Producing, processing, and identifying iron and steel. Safety in the shop. Tabular appendix. Index.

Note: The material in this textbook for industrial education courses consists of 51 job units presented in the form of a controlled and detailed guide to the exploration, study, and mastery of the fundamental operations of the metalworking field. The work is divided into two parts, first, what a student must be able to do, and second, what a student must know in order to perform successfully the given tasks. The methods are fully illustrated with step-by-step drawings and photographs.

HAGBERG, SHERMAN B., AND OTHERS

Machine shop practice. By Sherman B. Hagberg, in collaboration with Murlan L. Corrington and Raymond M. Biehler. New York: Harper & Brothers, 1942. 311 p. illus. 28 cm. (Rochester technical series) \$2.75. 3630

Contents: Measuring instruments. Drill press operations. Bench and engine lathes. Milling machine practice. Shaper. Bench work. Tools. Punches and dies. Tables. Index.

Note: A shop workbook of exercises for use in advanced trade school courses in machine shop practice, covering the fundamental processes and skills involved in the use of various machine and hand tools. Emphasis is placed on learning to work within specified tolerances and on hand work without mechanical aids. Each problem is accompanied by a full-page shop drawing showing all tolerances and specifications. The text is bound in notebook format for use alongside the machine.

HARPER, HERBERT DRUERY

General shop mathematics. Second edition. New York: D. Van Nostrand Company, Inc., 1936. 190 p. illus. 23 cm. \$1.50. 3631

Contents: Essential operations in fractions, decimals, measurements, etc. Percentage with applications. Ratio and proportion. Practical measurements. Formulas. Powers and roots. Trigonometry. Slide rule. Working drawings. Definitions. Tables. Index.

Note: This textbook for high schools and vocational schools teaches the more elementary and general shop calculations, especially those used in the machine shop. It applies fundamental arithmetic to shop practice, and shows the general utility of percentage calculations. It explains problems in ratio and proportion, the finding of powers and roots, the geometrical measurement of areas, and the use of formulas. A chapter has been devoted to working drawings, and the book is illustrated with blueprints and drawings throughout.

HENRY FORD TRADE SCHOOL, DEARBORN, MICH.

Shop theory. Revised edition. Prepared by the Shop Theory Department, Henry Ford Trade School, Dearborn, Michigan. New York: McGraw-Hill Book Company, Inc., 1942. 267 p. illus. 27 cm. \$1.50. 3632

Contents: Decimal equivalents. Formulas. Small tools. Rules. Micrometers. Vernier gages. Chisels and chipping. Hack saws

and sawing. Files and filing. Soldering. Shop review. Drilling and drilling operations. Tapers. Threads. Gearing. Cutting tools. Shaper. Planer. Lathes. Turret lathes. Milling machine. Gages and gage blocks. Heat treatment. Abrasives and grinding wheels. Grinding machines. Routing of bench tool work.

Note: Planned to give quickly a working knowledge of basic tools, machines, instruments, and operations of machine shop work, this work is suitable for use in high schools, colleges, industrial, and vocational schools. Safety rules are stressed. Changes from the 1941 edition are mainly in format, and in improved illustrations which are used liberally. No index is provided.

HERB, CHARLES OLIVER

Machine tools at work; applications of modern machine tools of various types illustrated by selected examples from actual practice in many different shops, accompanied by close-up action photographs and condensed descriptions including outstanding features of each job, with speed, feed, and other practical shop data. New York: The Industrial Press, 1942. 552 p. illus. 23 cm. \$4.00, plus foreign postage. 3633

Contents (abridged): Operations on lathes. Lathes designed for turning duplicate parts. Typical machining operations on turret lathes. Automatic machines which turn parts from bar stock; those which turn parts held in chucks. Cutting external screw threads with dies. Milling external and internal screw threads. Grinding screw threads. Tapping with single- and multiple-spindle machines. Drilling holes with machines of single-spindle and multiple-spindle type. Boring with standard and special machines. Rifling gun barrels. Preliminary cutting operations on bars and plates. Punching and riveting sheets and plates. Planing, shaping and slotting operations. Milling with machines of horizontal-spindle type; with vertical machines and attachments. Multiple-spindle milling operations. Milling irregular forms by reproducing a model. Broaching with vertical and horizontal machines. Grinding external surfaces of circular cross-section. Grinding holes or internal surfaces. Centerless grinding operations. Grinding flat or plane surfaces. Honing and superfinishing processes. Examples of gear cutting and gear-tooth finishing. Index.

Note: A selection of standard and special machine tools are shown, and such information as the order of operations, speed, feed, production, and other data from actual practice are included in many cases. All shop operations of the same general type are grouped together, thus showing many different and unusual applications of whatever type of machine tool is applied to the job in that group. This book is for apprentices or students of machine shop practice, for machinists, and for machine shop executives.

HEYWOOD, JOHNSON

Abrasive grains and their uses. Cleveland, O.: The Penton Publishing Company, 1943. 72 p. illus. 22 cm. Paper, \$1.00. 3634

Contents: The abrasive materials. Materials used for polishing, flexible grinding and buffing. Polishing, flexible grinding and buffing methods. Lapping with abrasive grain. Abrasive grain in the glass and optical industries. Miscellaneous uses of abrasive grain. Glossary of trade names. Index.

Note: This booklet describes in condensed form certain modern methods of using the abrasive grains of emery, diamond dust, silicon carbide, and aluminum oxide for various grinding, buffing, and polishing purposes. A few typical examples of the effective use of abrasive grain in various jobs are described in detail as a guide in the solution of similar problems.

HEYWOOD, JOHNSON

Grinding wheels and their uses; a handbook and textbook on modern grinding practice and theory. Under the auspices of the Grinding Wheel Manufacturers Association. Second edition. Cleveland, O.: The Penton Publishing Company, 1942. 436 p. illus. 23 cm. \$3.00. 3635

Contents: The abrasive materials. How grinding wheels are made. Theory of grinding. Surface qualities and finishes. Selecting the right wheel for the job. Wheel shapes and sizes. Truing, dressing and balancing. Use of grinding fluids. Tool and cutter sharpening. Sharpening cemented carbide tools. Cylindrical grinding. Grinding cams and other out-of-round surfaces. Roll grind-

ing. Internal grinding. Surface grinding. Disk grinding. Thread grinding. Gear grinding. Grinding dies and molds. Lapping. Honing. Superfinishing. Preparing metallographic specimens. Cutting off with abrasive wheels. Use of abrasives in non-metal-working industries. Grinding castings, welds and billets. How to cut costs and increase production. Some tips for product designers. Appendixes. Index.

Note: Intended primarily as a handbook on the subject for shop executives, but useful also as a textbook for workmen engaged in or studying grinding machine operations, with material arranged for use as a text in vocational or trade school courses. Modern tools and apparatus are described and illustrated, together with current methods and time-saving techniques. The second edition incorporates changes in practice developed between 1938 and 1942.

JANSSON, MARTIN E.

Handbook of applied mathematics. Second edition. Revised and enlarged by Herbert Druery Harper with a section on business mathematics by Peter L. Agnew. New York: D. Van Nostrand Company, Inc., 1936. 1010 p. illus. 20 cm. \$6.00. 3636

Contents: Introduction—How to use this book. Arithmetic—slide rule. Algebra. Geometry. Trigonometry. Mechanics. Weights and measures. Excavation and foundations. Concrete. Brickwork. Carpentry and building. Lathing and plastering. Paint, paper-hanging and glazing. Plumbing. Heating. Machine shop work. Automobile shop work. Sheet metal work. Electricity. Radio. Print shop. Business mathematics. Accounting. Index.

Note: This is a reference book of the simple mathematical methods used by mechanics in shop work and in the various building trades. The use of the methods and formulas is demonstrated by means of sample problems that are worked out in detail. The problems solved in these pages have been chosen from those most commonly encountered in practical mechanical work.

JENKINS, ROLLAND

Fundamentals of mechanical inspection for trainees and junior inspectors. New York: McGraw-Hill Book Company, Inc., 1944. 179 p. illus. 20 cm. \$1.75. 3637

Contents: Mechanical inspection; what and why. The basis of measurement. Mechanical drawing or blueprint. Tolerances, limits, and allowances. The nonprecision tools. The micrometer. The vernier instruments. Gages and gaging. Screw threads. Dial instruments and mechanical comparators. Air gages. Accessory equipment for inspection. Checking concentricity. Assembly inspection. The use and care of tools and instruments. Inspection procedure. Metals and materials. Machining operations. The mathematics of inspection. Definitions of terms generally associated with mechanical inspection. Appendix. Attainment test.

Note: After a review of the purpose and function of inspection, the principles and uses of fine tools and precision instruments are fully discussed and explained. The approach is the result of the author's extensive practical experience, supplemented by a long period as classroom instructor in the subject.

JOHNSON, CARL GUNNARD

Forging practice; a practical treatise on hand forging of wrought iron, machine steel, and tool steel; drop forging; and heat treatment of steel, including annealing, hardening, and tempering. Chicago: American Technical Society, 1938. 136 p. illus. 21 cm. \$1.50. 3638

Contents: Introduction. Workable metals. Structure of iron and steel. Cast ingot steel. Hot and cold working of metals. Hand forging. Welding by forging. Tool forging. Hammer forging. Drop-forging. Bulldozers. Upset-forging. Hydraulic forging presses. Hot rolling. Cold rolling. Roll piercing. Roll forging. Cold swaging. Cold pressing. Cold drawing. Extrusion of metals. Spinning of metals. Defects in forging. Heat treatment of steel forgings. Identification of steel. Index.

Note: An enlarged and partially revised edition of *Forging* by John Lord Bacon (revised by Carl G. Johnson), Chicago, 1933. The treatment of forging furnaces is expanded, and advances in machine and hand tools are shown. An elementary book for advanced vocational students and practical metal workers.

JOHNSON, JAMES FRANCIS

Applied mathematics. Milwaukee: The Bruce

Publishing Company, 1939. 438 p. illus. 21 cm. \$1.60. 3639

Contents: Fractions. Decimal fractions. Money. Percentage. Linear measure. Board measure. Square measure. Cubic measure. Shop formulas. Summary of tables and formulas.

Note: A text for home study, high schools, vocational and trade schools, and apprenticeship courses. The book deals with the practical applications of mathematics to everyday problems in industrial activities, manufacturing, and trade work. Illustrations and drawings are used to provide training in the interpretation of shop sketches and working drawings.

JONES, FRANKLIN DAY

Machine shop training course; a comprehensive treatise on machine shop practice, including fundamental principles; methods of adjusting and using different types of machine tools, with typical examples of work; measuring instruments and gages; cutting screw threads by different processes; thread grinding; gear cutting; precision toolmaking methods; typical shop problems with solutions; and miscellaneous facts relating to the art of machine construction. Third edition. New York: The Industrial Press, 1944. 2 v. illus. 23 cm. \$6.00, plus foreign postage. 3640

Contents (abridged): Volume I. Principles underlying all metal-cutting operations. Lathes and their principal mechanical features. Single-point tool forms and tool grinding. Principles governing speeds and feeds. Cooling and lubricating fluids. Screw thread standards and their application. How to calculate change gears. Turret lathes and machines of automatic type. Vertical boring and turning machines. General practice in drilling and reaming holes. Calipers, micrometers and other measuring instruments. Fixed gages for checking the sizes of duplicate parts. Precision gage-blocks and their application. Engineering standards applied in machine building. Miscellaneous rules and formulas. Volume II. Cutting threads in holes by tapping. Forming screw threads by milling and grinding. Planing process and its general application. Milling flat, curved and irregular surfaces. Milling irregular contours by reproducing shape of model. Cutting spur gears by milling with formed cutters. Milling bevel, helical and worm-gears. Grinding cylindrical and tapering parts. Surface grinding and types of machines used. Grinding milling cutters and reamers. Lapping and other precision finishing processes. Chipping, filing, scraping and hand grinding. Tool steels and other metal-cutting materials. Definitions of shop terms in general use.

Note: A treatise on machine-shop practice, including fundamental principles, use of machine tools, examples of work, and typical shop problems. Designed for shop men, designers, mechanical engineering students, and technical and trade schools. In this edition a section of miscellaneous rules and formulas has been added.

KEAL, HARRY MORTON, AND CLARENCE J. LEONARD

Technical mathematics. Second edition. New York: John Wiley & Sons, Inc., 1938. 3 v. illus. 18 cm. Vol. I, \$1.25; Vol. II, \$1.50; Vol. III, \$1.25. 3641

Contents: Volume I, The equation, the formula, and the graph. The equation. Formulas. Positive and negative numbers. Fractions. Ratio, proportion, and variation. Cutting speed, pulleys, and gears. Powers and roots. Right triangle. Radicals. Quadratic equations. Simultaneous equations. The graph. Index. Volume II, Geometric proof, and use of the natural functions. Triangles. Parallel lines. Similar polygons. Right triangulation. Circles. Areas. Plane figures not all in the same plane. Shop problems involving solids. Area ratios. Miscellaneous constructions. Volumes. Surfaces and solids of revolution. Appendix. Index. Volume III, Trigonometry, applied problems, and the slide rule. Right triangles. Logarithms. Trigonometric equations, identities, and formulas. Oblique triangles. Miscellaneous applications. Slide rule. Appendix. Formulas for reference. Index.

Note: A work designed to demonstrate to the student the connection between the mathematics class and the shops, laboratories, and drawing rooms. The series is so arranged that it may be used as a whole or in individual units. Problems have been selected with a view to their practicality. This second edition presents

a general revision of the text to parallel the changes made between 1922 and 1938 in such fields as aeronautics, air conditioning, refrigeration, and radio engineering. The treatment of the geometry of the sphere in Volume II is new in this edition.

KING, LEWIS E.

Lathe operations. New York: The Macmillan Company, 1944. 119 p. illus. 21 cm. \$1.75. 3642

Contents: The design and features of a modern back geared screw cutting lathe. Lathe tool grinding. The speed, feed, and depth of cut in lathe work. Methods of holding work to be machined in a lathe. Facing and centering. Straight turning between centers. Shoulder turning. Form turning. The knurling of work in a lathe. Taper work: taper turning with a taper attachment. Method used to check a taper. Taper turning by offsetting the tailstock. Cutting national form screw threads. Cutting an acme screw thread. Boring in a lathe. Reaming in a lathe. Cutting off or parting in a lathe. The steel rule. The micrometer caliper. Index.

Note: An introductory book intended for home study and also for use as a textbook in classes in technical schools and in industry.

KING, LEWIS E.

Milling machine operations. New York: The Macmillan Company, 1944. 123 p. illus. 21 cm. Paper, \$1.75. 3643

Contents: Milling machine and attachments. Cutting speed and feed. Plain milling. End milling. Sawing. Index centers. Form milling. Angular milling. Spiral and helical milling. Drilling, reaming, and boring work. Tables: Brown & Sharpe standard tapers. Morse standard tapers. Milling machine standard tapers. Index.

Note: A companion book to the author's *Lathe operations* (see above). This beginner's book is intended both for classroom use and for home study. Illustrations, many of them reproductions of photographs, and concise, practical instructions are designed to increase the student's proficiency in the shortest possible time. Problems and answers are included.

LAYING OUT FOR BOILER MAKERS AND PLATE FABRICATORS, revised by George M. Davies. Fifth edition. New York: Simmons-Boardman Publishing Corporation, 1944. 522 p. illus. 29 cm. U.S. and Canada, \$8.00; other countries, \$8.50. 3644

Contents: The subject of laying out. Triangulation. Cones and spheres. The tubular boiler. Laying out the locomotive boiler. Constructing the locomotive boiler. Laying out and computing boiler patches. Laying out for welded construction. Elbows. Lay-out and construction of steel stacks and tanks. Transition pieces and breechings. Pipe and pipe connections. Chutes, conveyors and hoppers. Index.

Note: The fifth edition contains new chapters on locomotive boiler construction, boiler patches, and layout for welding. Heavy plate problems are featured. Many new problems in sheet metal have been added. The material is arranged from simple to complex and is illustrated with more than 700 clear scale drawings. Layout problems by triangulation and orthographic projection are solved without resort to higher mathematics. Boiler layout includes not only the materials but all calculations which must be made to determine size of different parts. The beginner can use the book as a home study text. A cross-index facilitates its use as a journeyman's shop reference.

LUCAS, CLARENCE WILLIAMS

Press work pressures. New York: McGraw-Hill Book Company, Inc., 1935. 128 p. illus. 28 cm. \$4.00. 3645

Contents: Coining. Drawing. Embossing. Forging. Forming. Hook seaming and curling. Punching, shearing, hollow cutting and sprue cutting. Riveting. Miscellaneous. Index.

Note: Written to guide the mechanical engineer in estimating the size of press required for a given job. Presents test data, classified according to the operation, material, shape and size of the piece, so that ready comparison with work in hand may be made. Explanatory material shows methods of determining the test pressures, and how these pressures may be adapted by the reader, explaining the conditions of each test and showing how the conditions peculiar to a certain test affected the pressure.

LUDWIG, OSWALD A.

Metalwork, technology and practice. Bloomington, Ill.: McKnight & McKnight, 1943. 397 p. illus. 26 cm. \$4.00. 3646

Contents: Planning the job. Bench work and power saw. Getting acquainted with metals. Care of equipment. Drill press work. Threads, dies, taps. Fitting and assembling. Work with sheet metal. Heating metal. Tool sharpening. Finishing and inspecting. Machine tools.

Note: A manual containing a large amount of elementary information on tools, materials, and operations relating to metal work in many fields. The style of writing and language used are easily understood, and new terms as they occur are defined at the bottom of each page. Because of the arrangement of the material it can be used either as a text for shop courses or as a reference tool. Numerous illustrative diagrams and photographs and an extensive index add to the usefulness of the book.

MCMACKIN, FRANK JOSEPH, AND JOHN H. SHAVER

The mathematics of the shops. New York: D. Van Nostrand Company, Inc., 1942. 444 p. illus. 22 cm. \$2.50. 3647

Contents: Measurement. Common fractions. The micrometer and decimal fractions. Measuring surfaces and finding volumes and capacities. Formulas, and important ideas from algebra. Computation, accuracy, and the use of the slide rule. Pulleys, belts, and gears. Some ideas from geometry. Screws, bolts, nuts. Work, power, energy, and stresses. Some ideas from trigonometry. The mathematics of the building trades. Mathematics of the machine shop.

Note: This high school and vocational school textbook describes and illustrates many of the calculations required in the machine shop, the electrical shop, and the various building trades. Brief reviews of the methods of arithmetic, algebra, geometry, and trigonometry are distributed throughout the book, immediately preceding the use of these mathematical methods in solving technical problems.

MICHELON, LENO C.

Industrial inspection methods. New York: Harper & Brothers, 1942. 389 p. illus. 28 cm. \$3.50. 3648

Contents: Dimensional control. Nonprecision measurement. Precision measurement of length. Plug, ring, and snap gages. Precision gage blocks. Dial indicators. Precision angle measurement. Screw threads and thread gages. Gears and their inspection. Comparator and electro-limit gaging. Optical measuring instruments. Special gaging techniques. Surface plates and toolroom specialties. Layout and tool inspection. Statistical methods of product sampling. Hardness testing. Destructive testing. X-ray inspection. Magnaflux inspection. Surface inspection. Organization of an inspection department. Appendixes. Index.

Note: A comprehensive presentation of the standard material on the many inspection methods and devices used by industry and by the United States Army's Ordnance Inspection Service. An important feature is the inclusion of more than 300 illustrations, mostly photographs of actual inspection set-ups, showing the principles and applications of precision measuring instruments.

MOLLARD, WESLEY

Essentials of precision inspection. New York: McGraw-Hill Book Company, Inc., 1944. 207 p. illus. 28 cm. (A McGraw-Hill practical manual) \$3.00. 3649

Contents: Inspection tools and gages. Rules. Micrometer calipers. Vernier gages. Checking holes. Knurling—carburezing—sand-blasting. Gage blocks and attachments. Sine bar. Milling cutters—key slots. Threads. Problems. Gears.

Note: This book, written for the author's National Defense classes in Detroit, presents easily understood and well-illustrated information concerning the important points of precision inspection. The material is so arranged that the student or machine shop worker gradually goes from the elementary to the advanced problems, meanwhile acquiring skill in reading and in using the different precision tools. Inspectors will find many pointers leading to special advanced precision inspection.

NAUJOKS, WALDEMAR, AND DONALD C. FABEL

Forging handbook. Cleveland, O.: The Amer-

ican Society for Metals, 1939. 630 p. illus. 23 cm. \$7.50. 3650

Contents: Forging industry. Forge plant equipment. Die block and process operations steels. Forge dies and tools. Forging practice. Finishing operations. Heat treatment of forgings. Cleaning forgings. Testing and inspection of forgings. Materials handling. Forge plant design. Forge plant maintenance. Furnaces and furnace design. Designing the forged part. Forging materials. Job estimating. Costs and cost engineering. Forge shop safety. Forging definitions.

Note: Much of the information and data contained in this volume has been obtained directly from manufacturers and is based on their actual experience. Except for a brief history of the forging industry, attention is directed entirely towards the practical aspects of the subject—forging materials and processes, and the design and operation of forging equipment. Some attention is given to the design of the plant, maintenance routines, and job estimating. The final section contains a collection of useful tables, such as weights of metals and alloys, melting points, and die block weights. There is a glossary of terms in general use in the forging industry and an index.

NEUBECKER, WILLIAM

Sheet metal work; a manual of practical self-instruction in the art of pattern drafting and construction work in light- and heavy-gauge metal, including skylights, roofing, cornice work, patterns for forced-air fittings, etc. Second edition. Chicago: American Technical Society, 1938. 360 p. illus. 21 cm. \$2.50. 3651

Contents: Tools and methods of obtaining patterns. Developments by triangulation. Workshop problems. Problems for light gauge metal. Coopersmith's problems. Problems for heavy metal. Skylights. Roofing. Cornice work. Patterns for forced air fittings. Practical problems in mensuration for sheet metal workers. Index.

Note: A standard book for practical sheet-metal workers which first appeared more than thirty years ago. In this new edition some of the older text has been revised, a new section on forced air fittings has been added, and other changes have been made. The book is adapted to the needs of the beginner in the trade and contains also much information of value to the experienced worker.

O'ROURKE, FRANK JOSEPH

Sheet-metal pattern drafting. Edited by James A. Moyer. New York: McGraw-Hill Book Company, Inc., 1942. 189 p. illus. 23 cm. \$2.00. 3652

Contents: Introduction. Elbows. Pipe joints. Cornices. Radial-line developments. Classification of intersections. Intersections of frustums of cones with cylinders. Development of scaline cones. Triangulation methods. Methods of design. Horizontal Y branches. Clustered Y branches. Parallel-line methods (advanced). Designing transitional elbows. Airplane sheet-metal drafting. Skylights. Definitions and construction methods.

Note: A practical manual of instruction in sheet-metal pattern drafting, presenting typical problems in pattern drafting and demonstrating methods in pattern layout used in practice today. Explicit, simplified directions follow each problem, indicating clearly the successive steps to be followed in laying out the pattern accurately from start to finish.

REAMS, CLINTON A.

Modern blast cleaning and ventilation. Cleveland, O.: The Penton Publishing Co., 1939. 213 p. illus. 23 cm. \$4.00. 3653

Contents (abridged): Development of blast cleaning. Abrasives. Principles of compressed air blast cleaning. Abrasive recovery and separation. Nozzles. Abrasive lines. Pressure, compressed air-blast cleaning. Moisture in compressed air. Manual type blast equipment protective devices. Blast rooms. Barrel type blast equipment. Table type blast equipment. Automatic blast equipment. Installation of compressors and accessory equipment. Low pressure blasting. Centrifugal blasting. Centrifugal wheel blast machines. Increase fatigue resistance of metal by surface blasting. Ventilation. Reduction of industrial hazards. Hydroblasting. Maintaining blast cleaning equipment. Foreign blast cleaning developments. Selecting blast cleaning equipment. Various factors aid blast cleaning. Blast cleaning rolled steel. Blast finishing cold

mill rolls. Blast cleaning of forgings. Blast cleaning in the porcelain enameling industry. Railway car blast cleaning. Blast cleaning special alloys and tools. Preparation of metal surfaces for metal coating. Appendix. Index.

Note: A text and reference book for the contractor, the purchaser and manufacturer of equipment, and the designer. Practical applications to specific problems are discussed in detail, and there are analyses of cleaning costs according to the type of work, the materials and abrasives used, and the motivating power employed, i.e., compressed air or centrifugal wheel blast. Charts and diagrams of specific installations are included.

ROSENBERGER, WILLIAM A.

Impact cleaning. Cleveland, O.: The Penton Publishing Co., 1939. 466 p. illus. 23 cm. \$7.00. 3654

Contents (abridged): Part I, Nozzle blast cleaning equipment: Direct-pressure principle. Repose angle of abrasive. Sliding of materials on surfaces. Gravity-feed, suction-feed, steam-blast and water-blast equipment. Technical data. Means for moving work. Cleaning of pipes. Quick diagnosis data. Abrasives. Nozzles. Accessories. Compressed-air lines. Part II, Mechanical impact cleaning: General types of wheels. Effect of rebounding abrasive. Batter-type and slider-type wheels. Testing of wheels. Housings. Balancing wheel parts. Centrifugal versus airblast cleaning. Power requirements on centrifugal wheels. Maintenance of airless cleaning equipment. Applications to existing equipment. Abrasive consumption and recovery. Part III, Ventilation of impact cleaning equipment: Adequate dust removal. Resistance in a ventilating system. Balancing pipe lines. Ventilation of rooms. Fan laws and electrical data. Appendix. Index.

Note: This work is essentially designed for the buyer and user of sandblast equipment, not as a handbook but rather as a guide and general discussion on the most important phases of the art. No attempt has been made to teach sandblasting methods to the beginner, the primary purpose being to aid the designer, engineer, salesman, purchaser, and contractor by presenting a general summary of the theoretical principles and general technique involved. A considerable amount of mathematical theory is presented for the use of the engineer or specialist, and the work as a whole is considerably above the level of a practical handbook.

SCHAAF, WILLIAM LEONARD

Mathematics for mechanics. Garden City, N.Y.: Garden City Publishing Company, Inc., 1942. 298 p. illus. 22 cm. \$1.00. 3655

Contents (abridged): Weights and measures. Common fractions. Decimal fractions. Measuring instruments. Percentage. Ratio and proportion. Numbers and symbols. Formulas and equations. Square root. Logarithms. Slide rule. Triangles and polygons. Circles and tangents. Measurement of areas. Similar figures. Using trigonometric functions. Solution of oblique triangles.

Note: An introduction to arithmetic, geometry, algebra, and trigonometry, with a view to their application by mechanics and workmen in the mechanical trades. In order to demonstrate the actual application of mathematical principles and processes, illustrative material has been drawn from the fields of physics, mechanics, drafting, woodworking, and electrical trades. The book is a reprint of the mathematical section of the author's *Practical outline of mechanical trades*, Garden City, N.Y.: Garden City Publishing Company, 1942.

SCHWARZKOPF, ERNST

Plain and ornamental forging. Second edition. New York: John Wiley & Sons, Inc., 1930. 281 p. illus. 20 cm. \$2.25. 3656

Contents: General properties of iron. The forge. The blacksmith's tools. Practice exercises. Upsetting, offsetting, shouldering, drawing, forming, and bending. Welding. Forging exercises. The properties of steel. Annealing, hardening, and tempering. Tool making. Advanced forging. Art forging. Tables. Index.

Note: Covers the theory and practice of forge work. It is easy to understand, as it leads by detailed steps through the processes of plain and art metal forging. Detailed drawings illustrate each important operation, and the descriptive material is free from difficult technical terms. This edition takes note of additional compositions of metal and alloying materials and the use of the acetylene torch.

SHUMAN, JOHN THEODORE, AND OTHERS

Machine shop work; a comprehensive treatise on approved shop methods, including construc-

tion and use of tools and machines, details of their efficient operation and a discussion of modern production methods by John T. Shuman in collaboration with Horace H. Lowell, Lewis H. Brado, J. O. Corbin. Chicago: American Technical Society, 1942. 499 p. illus. 21 cm. \$3.50. 3657

Contents: Common hand tools. Chipping, filing and scraping. Hand threading. Linear measurement. Fixed gages and their uses. Layout tools and how to use. Drilling machines. Engine lathes. Grinding. Planers, shapers, milling machines. Gearing. Broaching. Turret lathes. Index.

Note: A practical book with emphasis on the fundamental use of tools, especially the operation of standard tools. Questions supplement each chapter.

SIMONDS, HERBERT RUMSEY

Finishing metal products. New York: McGraw-Hill Book Company, Inc., 1935. 337 p. illus. 23 cm. \$3.50. 3658

Contents (abridged): Part I, Commercial aspects of finish and appearance: Sales value of attractive finish. The problem of selection. Plating characteristics. Importance of color. Prefinished raw metals. Part II, Preparation for the finish of metal products: Cost and value of cleaning. Cleaning as a production process. Pickling for better finish. Selecting the pickling equipment. Abrasive cleaning. Part III, Polishing and buffing: Wheels and materials. Technical considerations. Designing products to reduce polishing expense. Design of polishing and buffing fixtures. Part IV, Plating and spray coating: Cadmium plating. Chromium plating. Copper plating. Nickel, zinc, and other metallic coatings. Spray coating. Part V, Painting: Preparation for paint. Painting for protection. Enameling and lacquering. Part VI, Special finishes: Coloring aluminum. Porcelain enamel. Novelty coatings and synthetics.

Note: Besides describing shop technique, this book coordinates metal finishing processes and finishing problems with the overall problem of manufacture. The usual types of finish, such as galvanizing, polishing, plating, lacquering, and painting are thoroughly treated, as well as many new finishes of a specialized nature. An important feature of the book is the section on cleaning and descaling.

STARRETT, L. S., COMPANY

The Starrett book for student machinists. Athol, Mass.: The L. S. Starrett Company, 1941. 184 p. illus. 18 cm. \$0.75. 3659

Note: A simple reference book designed to assist the student machinist in familiarizing himself with the fundamentals of good machine shop practice and to provide him with a broad knowledge of the principles and methods involved. Some of the subjects treated are: how to read working drawings, how to make measurements, the micrometer and the vernier, bench work, use of tools, toolmaking, lathe operations, spark testing of metals, grinding, jigs, and fixtures. The descriptive text on each topic is brief and is illustrated by drawings and photographs. There is a short summary of elementary mathematics and mechanics. The present edition replaces the two volumes previously published, volume I, *The Starrett book for machinists' apprentices*, Athol, Mass., 1929, and volume II, *The Starrett data book for machinists*, Athol, Mass., 1923.

TAYLOR, LOUIE S.

Successful soldering. Introduction by Emanuel E. Ericson. New York: McGraw-Hill Book Company, Inc., 1943. 76 p. illus. 19 cm. (A McGraw-Hill practical manual) \$1.00. 3660

Contents: The soldering method. Kinds of solder. Sources of heat. Soldering black iron. Soldering zinc, galvanized and galvanized steel. Soldering tin andterne plate. Soldering stainless steel. Soldering copper and copper alloys. Soldering aluminum and its alloys. Soldering tin, pewter, and britannia metal. Soldering lead.

Note: How to solder all kinds of metals is explained for the amateur and professional craftsman. The book covers the fundamentals of the process, then takes up in detail the various types of soldering coppers, solders, and fluxes, showing the purposes and correct uses of each, then covers the special problems of soldering various materials.

TURNER, WILLIAM PAYSON

Machine tool work; fundamental principles. New York: McGraw-Hill Book Company, Inc., 1932. 424 p. illus. 23 cm. \$3.00. 3661

Contents: Preface. To the student. General shop instructions. Tool shapes for cutting metal. Cutting speeds and feeds. Metals commonly used in machine tool work. The lathe and lathe work. Tapers and taper turning. Boring and facing. Kinds of fits and fitting. Screws and screw threads. The shaper and the planer. Their work. The milling machine and its uses. Gears and gear cutting. The turret lathe and turret-lathe work. Drilling machines and drilling. Keys and keyways. The grinding machine and grinding methods. Miscellaneous problems in machine tool work. Index.

Note: A systematic and detailed introductory text. The author has stressed basic principles upon which the highly specialized art of machine tool work is founded. Methods have been selected which illustrate correct principles and insure safety for the beginner.

VAN LEUVEN, EDWIN PERRY

Cold metal working; an introductory course to the metal trades. New York: McGraw-Hill Book Company, Inc., 1931. 275 p. illus. 24 cm. (McGraw-Hill industrial arts texts) \$2.25. 3662

Contents: Part I, Shop hints and regulations. Sketching and reading drawings. Stock calculations and layouts. Jobs of general application. Shop tools and equipment. Household equipment and furniture pieces. Appendix. Tables and useful information.

Note: A progressive series of jobs in cold metal working, emphasizing the correct use of hand tools and including much useful related trade and technical information. The job sheets include enough detailed information on materials, tools, procedure, and related facts to enable the user to follow them with little or no outside help. Primarily for vocational schools.

VAN LEUVEN, EDWIN PERRY

General trade mathematics. New York: McGraw-Hill Book Company, Inc., 1942. 575 p. illus. 23 cm. \$3.50. 3663

Contents: Whole numbers. Common fractions. Decimal fractions. Rules and formulas. Powers and roots. Percentage. Vocational finance. Ratio and proportion. Graphs. Surface measurement. Volume. Constructing geometric figures. Direct measurement. Lumber measure. Plastering and protective coatings. Pulley speeds and diameters. Velocity or surface speed. Tapers. Screw threads. Milling machine work. Mechanics. Electricity. Machines. Efficiency. Tables. Index.

Note: A textbook for courses of instruction for vocational students. Owing to the diversity of interest and aptitude among student artisans, the text is designed to permit each student to proceed at his own level of achievement. Basic explanations are set off from the rest of the text in ruled squares not only for emphasis but to serve as a quick reference. Practical applications to shop machinery and familiar subjects are widely used, and there are about 3,000 exercises and problems selected from shop situations. For vocational or technical school courses as well as for home study by the employed workman.

VOSS, LEO A.

The modern metalsmith; a manual on the working of metal sheets and tubes. A revised and enlarged edition of The modern copper-smith. New York, N.Y.: Sheet Metal Publication Company, 1943. 415 p. illus. 18 cm. \$4.00. 3664

Contents: Sheets, tubes, solders, flux. Tools and fixtures. Joining. Copper riveting. Sheet seaming, brazing, and welding. Varnish kettle. Jacket kettle. Dome-shaped top. Expansion joints. Air chamber. Bends. Ship ventilator. Sheet forming and finishing. Pipe connections. Pipe fitting. Copper pipe unions. Cup joints. Branches. Pipe reducing. Pipe bending. Jacketed pipe. Assembled and finished work. Working various metals. Useful information. Index.

Note: A comprehensive exposition of practice in the average metalsmithing shop, written primarily for the apprentice and mechanic, but useful to the engineer and designer as well. The possibilities and limitations of copper and non-ferrous metal

working are set forth with examples chosen to demonstrate typical operating technique. All of the material of the earlier volume mentioned in the title is included, plus new data on the electric welding of copper, and new chapters on the working of various non-ferrous metals such as bronze, nickel, nickel alloys, aluminum, monel metal, and stainless steel, which are replacing copper in certain industries but which are worked by essentially the same methods.

WAGENER, ALBERT M., AND HARLAN R. ARTHUR

Machine shop theory and practice. New York: D. Van Nostrand Company, Inc., 1941. 306 p. illus. 28 cm. \$2.28. 3665

Contents: Rules and scales. Semi-precision and common precision tools. Shaper—planer—slotter. Lathe. Tool room lathes. Lathe work. Milling machines. Mill operation. Dividing head work. Vertical mill. Grinding machines—cylindrical grinders. Internal grinders. Surface grinders. Cutter grinding. Grinding wheels. Bench hand tools and their operation. Bench: materials—routing—inspection. Bench: layout—drilling—threading—scraping—heat treating. Formulas and tables. Index.

Note: This textbook is designed to teach the elements of shop work to beginners, including both adults who are being trained to do mechanical work and also high school and vocational students. These methods were developed by the authors in their teaching activities at the Henry Ford Trade School and the neighboring Naval Training School. They show the most efficient practices of progressive manufacturers, with examples that are worked out in detail, both from a job analysis and a mathematical point of view. The same authors have written *Workbook on machine shop: theory and practice*, New York: Van Nostrand, 1942, 188 p., paper, \$1.00, for use with their and other texts on the subject.

WEIR, JOHN J.

Elementary mathematics for the machine trades. New York: McGraw-Hill Book Company, Inc., 1943. 193 p. illus. 21 cm. \$2.00. 3666

Contents: Fundamental operations. Fractions. Decimals. Squares, cubes, square root. Algebra. Angles. The geometry of common figures. Ratio, proportion percentage. Pulleys, belts and gear trains. The lathe. Screw threads. Shaper, planer, drill press, grinder, and milling machine. Indexing. Trigonometry. The use of tables.

Note: Presents the mathematics—arithmetic, algebra, geometry, and trigonometry—needed for machine shop work and for the solution of everyday problems of the machinist. Problems are drawn from actual shop situations; mathematical formulas are simplified; sketches are drawn in approved blueprint style; and difficult terms are avoided.

WHITTINGTON, EDWARD N.

Industrial inspection and assembly. New York: McGraw-Hill Book Company, Inc., 1943. 202 p. illus. 21 cm. \$2.25. 3667

Contents: General factory rules. Common tools; identification, care and use. Filing, burring, scraping, grinding, and lapping. Drilling, hand and machine. Tapping and reaming. Shop mathematics. Precision measuring instruments in general. Fundamentals of blueprint reading. Inspection with gages. Bench assembly. Soldering. The bench lathe. General organization breakdown of a fair-sized corporation. Appendix: Useful tables. Index.

Note: A text for vocational or trade schools or individual study, treating of factory procedures and description and use of tools. Actual instruction in inspection and assembly is subordinate to instruction in specific tools and their use. Illustrations add much to the book. The appendix includes tables of twist drill dimensions, gage sizes, data on high speed drills, data on threads and tapers.

WILLIAM HOOD DUNWOODY INDUSTRIAL INSTITUTE, MINNEAPOLIS

Dunwoody series: machine shop training jobs. Chicago: American Technical Society, 1942. 7 v. illus. 28 cm. Unit I, \$1.35; II, \$1.35;

III, \$1.25; IV, \$1.25; V, \$1.25; VI, \$1.25; VII, \$0.75.

3668

Contents: I, Lathe job training units. II, Drill press job training units. III, Milling machine job training units. IV, Grinder job training units. V, Shaper and planer job training units. VI, Bench work unit. VII, Instructor's guide.

Note: These volumes consist of a series of six manuals for job training on different machine tools, plus an instructor's guide which covers the organization and devices for efficient shop control and recommended methods of teaching the material contained in each manual. The work is arranged in a series of job projects graded progressively and accompanied by job instruction sheets which tell the learner what to do, what materials and tools are required, give questions to be answered upon completion of the job, and refer the student to specific textbooks for advanced study. A job check-sheet also accompanies each job unit and serves to estimate the student's aptitude and proficiency. Each unit may be purchased separately.

WOLFE, JOHN H., AND EVERETT R. PHELPS

Practical shop mathematics. Revised edition. New York: McGraw-Hill Book Company, 1939. 2 v. illus. 20 cm. \$2.00 each. 3669

Contents: Volume I, Elementary shop mathematics. Volume II, Advanced shop mathematics.

Note: Presents the mathematics that constantly confront the tool maker, die maker, draftsman, etc., in a treatment adapted to the needs both of vocational schools, including high school grades, and of home students. Several hundred practical problems are included covering such subjects as plane geometry, trigonometric functions, planetary gearing, compound angle problems, etc. Developed from the course as taught at the Henry Ford Apprentice School.

WOLFE, JOHN H., AND OTHERS

Simplified industrial mathematics, by John H. Wolfe, William F. Mueller and Seibert D. Mullikin. New York: McGraw-Hill Book Company, Inc., 1942. 281 p. illus. 20 cm. \$2.00. 3670

Contents: Common fractions. Addition and subtraction of decimals. Multiplication and division of decimals. Square root. Precision instruments. Grouping symbols and formulas. Ratio and proportion. Tapers. Percentage. Geometry. Trigonometry: right triangles. Trigonometry: oblique triangles. Screw threads. Gears. Table of trigonometric functions. Greek alphabet. Answers. Index.

Note: Presents an abundance of practical problems of the type found in the everyday activities of industry. The chapter on precision instruments and measurement contains illustrations and drawings that aid the student in reading the rule, micrometer, vernier caliper, and vernier protractor. Screw threads and standard types of gears are fully treated. A special feature is the series of original formulas which simplify the solution of many shop problems.

YOUNG, JAMES FREDERICK, EDITOR

Materials and processes. New York: John Wiley and Sons, Inc., 1944. 628 p. illus. 22 cm. (General Electric series) \$5.00. 3671

Contents: The nature of pure metals. Alloys. Mechanical properties of metals. Iron and steel. Nonferrous metals and alloys. Heat treatment. Corrosion. Magnetic properties of materials. Electrical properties of materials. Electrical insulation. Plastics and their molding. Casting processes. Powder metallurgy. Hot working processes. Cold working processes. Welding and allied processes. Machining. Gaging, inspection, and quality control. Cleaning, plating, and finishing of metals. Index.

Note: For engineers, designers, draftsmen—an over-all engineering (rather than manufacturing) picture of materials and processes. It is the work of 27 contributors. The first part of the book studies the materials used in the manufacture of electro-mechanical tools and equipment. The second part gives enough detail on the "how" of manufacturing processes so that the engineer can understand their basic nature; however in this section the main emphasis is laid upon ease of processing the products, and a large amount of information is given on designs to facilitate manufacture. Much of the text material has been accumulated from lectures by General Electric Company specialists in each of the fields covered.

Foundry Work

AMERICAN FOUNDRYMEN'S ASSOCIATION

Cast metals handbook. 1944 edition. Chicago: American Foundrymen's Association, 1944. 756 p. illus. (part col.) 23 cm. \$6.00. 3672

Contents (abridged): Recommendations to designers of castings: Design of pattern equipment. Selection of alloys. Bibliography. Recommendations to buyers of castings: Data required for intelligent estimation of casting costs. The significance of strength and ductility tests of metals. Cast steel: General information. Methods of manufacture. Metallurgy. Properties and applications of carbon cast steels—low alloy cast steels—high alloy cast steels. Heat treatment of steel castings. Testing methods for cast steel. Bibliography. Malleable iron: Metallurgical features. Methods of manufacture. Cupola malleable iron. Pearlitic malleable iron. Cast iron: Methods of manufacture. Metallurgy. Heat treatment. Bibliography. Non-ferrous alloys: Copper and copper-base alloys. Aluminum-base alloys. Magnesium-base alloys. Lead-base alloys. Nickel-base alloys. Appendix. Index.

Note: A compilation of data for the foundryman, metallurgical engineer, designer, and user of castings. In this revision, over 200 new pages have been added to incorporate the advances made in the industry since 1940. Various tables have been added in the appendix and two charts showing graphite flake size and graphite flake type have been included.

AMERICAN FOUNDRYMEN'S ASSOCIATION

Foundry sand testing handbook. Standards adopted by the American Foundrymen's Association following recommendations of the A. F. A. Committee on Foundry Sand Research. Fifth edition. Chicago, Ill.: American Foundrymen's Association, 1944. 176 p. illus. 23 cm. \$3.50. 3673

Contents (abridged): Methods for sampling foundry sands and clays. Preparing molding sands for testing. Determination of moisture in foundry sands. Methods of preparing test specimens—standard. Methods for determining permeability of foundry sands. Methods for determining strength of bonded molding sands. Methods for determining fineness of foundry sands—standard. Determining the sintering points of sand. Method for determining bonding power of clays for synthetic molding sands—standard. Foundry sand grading classification. Determination of green surface hardness—standard method. Method of testing core binders. Determination of baked permeability. Baked strength of cores. Non-standard tests. Terms used in foundry sand work. Bibliography on sand testing and control. Index.

Note: The present edition of this book of tests which are standard in the United States has a number of changes. The section on non-standard tests is new.

AMERICAN FOUNDRYMEN'S ASSOCIATION. BRASS AND BRONZE DIVISION. RECOMMENDED PRACTICES COMMITTEE

Recommended practices for the sand casting of non-ferrous alloys. Chicago: American Foundrymen's Association, 1944. 159 p. illus. 23 cm. \$3.00. 3674

Contents: Classification of cast copper-base alloys. Leaded red and leaded semi-red brasses. Leaded yellow brass. High strength yellow brass and leaded high strength yellow brass (manganese bronze). Tin bronze and leaded tin bronze. High-lead tin bronze. Leaded nickel brass and bronze alloys (nickel silvers). Copper-silicon alloys (silicon brass and silicon bronze). Aluminum bronze. Causes and remedies for defects in leaded red and leaded semi-red brass and tin bronze castings. Conforming specifications for copper-base alloys. Specific applications of copper-base alloys. Aluminum-base alloys. Magnesium-base alloys. Gating terminology report. Index.

Note: An outline of recommended practices for the foundry operator based on studies made by the American Foundrymen's Association. For each alloy treated there are recommendations covering the molding, melting and pouring, finishing, heat treatment, defects, properties, and applications. Some patented processes are mentioned but the information is not intended as a

recommendation of any specific proprietary process. Intended for use of foundrymen in beginning production of alloys with which they are unfamiliar.

AMERICAN FOUNDRYMEN'S ASSOCIATION

Symposium on centrifugal casting. Publication no. 44-37. Papers presented at the 39th annual meeting, Toronto, Ontario, August 20-23, 1935; 45th annual convention, New York City, May 12-15, 1941; and 48th annual convention, Buffalo, N.Y., April 25-28, 1944. Chicago: American Foundrymen's Association, 1944. 208 p. illus. 23 cm. Paper, \$3.00. 3675

Contents: Centrifugal castings, by Peter Blackwood and John Perkins. Centrifugal casting of steel, by C. K. Donoho. Spinning speeds of centrifugal casting machines, by F. G. Carrington. Precision casting by the investment molding process, by Robert Neiman. Design and safe operation of centrifugal casting machines, by James G. Weber. The influence of the centrifugal process on the physical properties of some non-ferrous alloys, by W. W. Edens and J. F. Klement. Centrifugal casting of non-ferrous metals, by I. E. Cox. Hows and whys of centrifugal casting, by Howard B. Zuehlke. Slush pump piston cores produced by centrifugal casting process, by A. E. Falk. Production of centrifugal gray iron castings in water cooled molds, by H. W. Stuart. The sand spun centrifugal process for making cast iron pipe, by James T. MacKenzie.

Note: A collection of technical papers. A report of the discussion follows each paper.

CAMPBELL, HARRY LINN

Metal castings. New York: John Wiley & Sons, Inc., 1936. 318 p. illus. 23 cm. \$3.00. 3676

Contents: The metal-casting industry. Materials for the foundry. Molding practice. Core practice. Melting processes for cast iron. Methods and equipment for cleaning and reclaiming castings. The constitution of cast iron. The properties of cast iron. The classification of iron castings. Calculation of the metal charges for the cupola. Malleable iron castings. Steel castings. Non-ferrous metal castings. The design of metal castings. Comparative properties of the cast metals. Appendix. Index.

Note: A treatise on the materials and processes employed in the production of metal castings. The reasons for the selection of materials and the procedure used in the manufacturing processes are explained. Special consideration is given to the constitution, properties, and classification of the cast ferrous and non-ferrous alloys. The relationship of design to the production of metal castings is an important division of this study. A bibliography is appended to each chapter. An appendix presents tabulated data, standard specifications for cast metals, and foundry control methods. The book may be used as a guide and reference for foundry managers and operators and also for mechanical engineers.

DIETERT, HARRY WALTER

Modern core practices and theories. Chicago: American Foundrymen's Association, 1942. 532 p. illus. 23 cm. \$8.00. 3676a

Contents: Introduction. Core sands, types and locations. Core binding materials. Core mixtures. Storage and conditioning of core materials. Mixing equipment, operations, distribution and storage. Coremaking methods and equipment. Factors affecting core baking. Core ovens and their control. Core finishing operations. Core coatings. Core handling. Procedure for determining the properties of cores and core mixtures. Controlling core properties. Core setting. Core shake-out. Core sand reclamation. Casting surface as affected by core-sand mixtures. Economics of core production. Defects caused by faulty cores. Bibliography.

Note: The author has attempted to assemble in this volume all available technical and practical information about coremaking. The material is based on lectures presented at the 1941 and 1942 conventions of the American Foundrymen's Association. A chronologically arranged bibliography of approximately 220 references is included.

DWYER, PATRICK

Gates and risers for castings; function and application of gates and risers in the production of castings of gray iron, brass, bronze, alumi-

num, steel and malleable iron. Second edition. Cleveland, O.: The Penton Publishing Company, 1942. 364 p. illus. 23 cm. \$4.00. 3677

Contents (abridged): Gray iron. Brass and bronze. Aluminum. Steel. Malleable iron. Index.

Note: This reference volume is intended primarily for the benefit of foundrymen who have not had full opportunity to study the subject of the proper application of gates and risers in the making of castings. In addition to descriptions of numerous types of gates and their applications, related features are presented together with specific instances of satisfactory methods for gating practically all classes of castings. The basic principles underlying their applications are discussed but no attempt is made to cover the theories of physical, mechanical, or metallurgical phenomena. A working knowledge of foundry practice is assumed. The work is based mainly on the author's experience of 50 years and upon the literature of the field. The second edition contains few changes.

HALL, BURRILL RUPERT, AND HENRY E. KILEY

Pattern design. Scranton, Pa.: International Textbook Company, 1939. 193 p. illus. 21 cm. (International texts in mechanical engineering, C. F. Taylor, consulting editor) \$2.00. 3678

Contents: Pattern details. Molding details. Metals used in pattern construction. Construction work and joints. Design for low cost production. Pattern department management. Special designs. Explanation of work required in planning pattern equipment. Problems in pattern designs. Glossary. Index.

Note: This practical text approaches the subject from the viewpoint of the engineer who will be called upon to design castings. Utilizes 200 line and half-tone illustrations, as well as 27 special problems.

HALL, JAMES ROBERT

Practical wood patternmaking. Editorial collaboration of Charles L. Webber. New York: McGraw-Hill Book Company, Inc., 1943. 188 p. illus. 28 cm. \$3.00. 3679

Contents (abridged): General information for patternmakers. Use of orthographic projections. Use of isometric views. General information on blueprints. Safety suggestions. General information on the care of tools. General information on wood. How to glue pattern stock. How to figure the shrinkage of metals. How to differentiate between various tools and equipment. How to use draft. How to use runners and gates. How to lay out small patterns. How to shellac and wax patterns and core boxes. How to use leather fillets. How to letter and number patterns. How to mold a one-piece pattern with green sand core. How to use templates. How to patch a broken mold. How to estimate the cost of patterns. How to make cores. How to construct various types of core boxes. How to mold split patterns with dry sand core. How to make and use faceplates. How to use wing cores and wing prints. How to use chaplets. How to use layouts. How to estimate the weights of castings. How to lay out segments for built-up patterns. How to mold patterns with loose pieces. How to mold one-piece patterns with dry sand core. How to use babbitt anchors. How to make cores for a one-casting job. How to use rapping and lifting plates. How to use ram-up cores. How to make staved or lagged-up patterns. How to use blocks, frames, or follow boards.

Note: Beginning with simple blueprint reading, this book takes the reader through all steps of patternmaking, from orthographic and isometric views of objects to correct methods of handling power and bench tools, molding and foundry methods. The use of patternmaking in lofting, jig, and aircraft work is fully explained. Tools of the trade are completely described, as well as the pattern work. Designed for beginners in the trade.

HARTLEY, LAWRENCE ARTHUR, EDITOR

Elementary foundry technology. Third edition. Revised by Edwin Bremer and Pat Dwyer. Cleveland, O.: The Penton Publishing Co., 1941. 390 p. illus. 23 cm. \$3.00. 3680

Contents: Substances and their structure. Some physical properties. Oxidation, reduction, and combustion. Force and motion. Application of force. Mechanics and fluids. Effects of elements on

iron. Iron. Elementary problems in steel foundry production and brass melting. Foundry sands. Gates and risers. Molding machines. Glossary. Bibliography. Index.

Note: A textbook designed primarily to stimulate the student to search for more complete information through actual experience and by means of the text and reading references. No formal knowledge of mathematics, physics, or chemistry is required for an understanding of the material presented. The third edition contains a new chapter on the fundamentals of malleable iron and additional references at the end of each chapter.

McCASLIN, HERBERT JOHN

Wood patternmaking; a textbook. New York: McGraw-Hill Book Company, Inc., 1941. 339 p. illus. 19 cm. \$2.25. 3681

Contents (abridged): Part I, Bench work. Pattern woods. The plane. A sand mold. Pattern features. Machine finish. Platen. Pattern requisites. Core box for the clamp pattern. Table of core-print proportions. Core box for the guide pattern. The plugging of core seats. Core frame for the pedestal pattern. Core box for the support pattern. A pattern layout. Core box for the tool-rest slide pattern. Core box for the steady-rest pattern. Core frame for the bracket pattern. A superimposed core. Lag construction. Stave construction. Questions. Part II, Lathe work. Pattern turning. Face-plate turning. Base. Collar. Cover. Cylinder head. Handwheel. The surface plate and its useful adjuncts. Mounting the material for turning parted patterns. Lever. Reducing connection. Socket base. Carburetor connection. Glue pot. Water-jacket reservoir. Piston. Handwheel. Three-legged base. Tiller wheel. Chamber. Elbow with side outlet. Hose connection. Ring. Housing. Flywheel. Brakewheel. Swivel. Air pan. Air chamber. Manifold. Glossary of patternmaking and molding terms.

Note: Explains simply and clearly how to construct wood patterns and their core boxes, and how to make sand molds. Sixty-four problems on bench and lathe work are included, each presenting one or more new features. A glossary of terms covers every phase of the subject. This third edition has been revised to represent recent industrial practice in the United States.

RICHARDS, WILLIAM HENRY

Principles of pattern and foundry practice; a textbook in theory and practice for the use of students in universities and technical institutions. New York: McGraw-Hill Book Company, Inc., 1930. 121 p. illus. 24 cm. \$1.60. 3682

Contents (abridged): Exercises in bench practice. Exercises in lathe practice. Lecture problems. Index.

Note: This book is intended to serve as a text in pattern and foundry practice for engineering students, with emphasis on the relation of these methods to industrial problems. The first part of the text deals with the study and layout of shop drawings and blue prints, and the care and use of tools and machinery. The second section describes the method of operating a wood-turning lathe and the parts used in its construction. The final portion comprises a number of lecture problems from which may be selected topics for discussion. Each exercise is described and illustrated in step-by-step detail.

RITCHEY, JAMES

Pattern making. A practical treatise for the pattern maker on woodworking and wood turning, tools and equipment, construction of simple and complicated patterns, modern molding machines and molding practice. Revised by Walter W. Monroe, Charles Wm. Beese, and Philip Ray Hall. Chicago: American Technical Society, 1938. 233 p. illus. 21 cm. \$2.00. 3683

Contents: Working medium. Hand cutting tools. Measuring tools. Small tools. Machine tools. Molding practice. Patterns. Metal pattern making. Index.

Note: This text aims to show the tools and equipment necessary for pattern making, to give design details of simple and complicated patterns for typical cases, to discuss the use of green and dry sand cores and the construction and design of a typical molding machine. A new section on metal pattern making is a feature of this revised edition of a work last published in 1933.

STIMPSON, WILLIAM C., AND BURTON L. GRAY

Foundry work; a practical handbook on standard foundry practice, including hand and machine molding with typical problems, casting operations, melting and pouring equipment, metallurgy of cast metals, etc. Revised by John Grennan. Chicago: American Technical Society, 1939. 216 p. illus. 21 cm. \$2.00. 3684

Contents: Molding practice. Molding equipment. Molding processes. Typical molding problems. Molding machines. Pattern mounts. Open sand molding. Loam molding. Core making. Casting operations. Foundry materials. Molding sand and refractories. Foundry fuels. Sand handling and conditioning equipment. Continuous molding and pouring equipment. Melting equipment. Metal handling equipment. Handling and cleaning castings. Metallurgy of cast metals. Alloy cast irons. Malleable cast iron. Steel castings. Non-ferrous castings. Copper alloys. Aluminum alloys. Magnesium alloys. Bearing alloys. Zinc base casting metals. Testing cast metals. Classification and specifications for cast-iron castings. Steel casting specifications. Alloy cast steel specifications. Mixing metals. Heat treatment of castings. Index.

Note: A brief, simply written work for the instruction of foundrymen and students. Typical molding problems are presented, and molding machines and equipment, as well as the processes, are described and illustrated.

UNITED STATES. BUREAU OF SHIPS

Melting and molding of ferrous and non-ferrous metals and alloys. Foundry manual. United States Navy Bureau of Ships (250-0334). Prepared by Welding, Casting, and Forging and Mechanical and Metallurgical Sections. Washington, D.C.: Government Printing Office, 1944. 157 p. illus. 26 cm. Paper, \$0.45. 3684a

Contents: Section I, General practice: Purpose. Design and pattern making. General theory and practice of gating and risering. Core and molding sands. Core making. Molding. Metallurgy and mechanics of melting. Pouring castings. Cleaning and heat treating. Section II, Special practice: Melting and molding of composition G and composition M. Melting and molding of hydraulic bronze. Melting and molding of manganese bronze. Melting and molding of yellow brass. Melting and molding of cast nickel base alloys. Melting and molding of aluminum-silicon alloy. Babbitting with tin base bearing metal.

Note: This foundry manual is intended for the use and guidance of advanced base and repair ship foundry personnel in casting the metals most commonly used by the Navy. It describes methods now in use at the various navy yards, at the Naval Research Laboratory, and by industrial foundries for the production of steel, cast iron, bronze, brass, and aluminum alloy castings.

WENDT, ROBERT ERNEST

Foundry work; a text on molding, dry-sand coremaking, melting and mixing of metals, and problems in foundry management. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1942. 261 p. illus. 19 cm. \$2.00. 3685

Contents (abridged): Preface to the fourth edition. Preface to the first edition. Part I, Groups of casting metals—tools—flasks—molding sand—fundamental principles of molding. Part II, Exercises in bench and floor molding. Part III, Pattern equipment—standard pattern colors—designing castings—molding machinery—mass production. Part IV, Dry-sand coremaking. Part V, Cupolas—melting and mixing metals. Part VI, Non-ferrous metal founding. Part VII, Problems of foundry management—inspection of castings—defective castings—causes of defects—safety in foundries. Index.

Note: A text for vocational schools and for use by apprentices in commercial shops. The fundamental principles of foundry work are explained along with a general description of current foundry practice, including instructions for molding, coremaking, and other foundry work. The making of coke, the operation of blast furnaces, and the chemical analysis of iron have also been added. The fourth edition includes new exercises in molding, a study of the causes of defective castings, safety suggestions, and a glossary and bibliography.

Welding**BROOKING, WALTER J.**

Arc welding engineering and production control. New York: McGraw-Hill Book Company, Inc., 1944. 347 p. illus. 21 cm. \$4.00. 3686

Contents: Arc welding, a major production method. Problems and factors in arc-welding production and control. What arc-welding specifications should show. Prerequisites of, and economic benefits from, engineering control. Material control and arc-welding costs. Control of flame cutting of parts for arc welding. Cost of poor fit-up and its control. Jigs and fixtures for arc-welded mass production. Inspection of mass-production arc-welded products. The machining of arc-welded products. Cleaning arc-welded machinery prior to painting. Training arc-welding operators. Arc-welded shop fixtures and accessory production equipment. Direct current and flexibility of welding operations. Mass production with alternating-current welding. Carefully controlled electrode comparison tests are profitable. Arc welding and its use by equipment servicemen. Sources of information on welding problems. Index.

Note: Presents the general factors involved in arc-welded production as illustrated by the practices of a leading manufacturer of earth-moving equipment, R. G. Le Tourneau, Inc. No attempt has been made to make the subject matter completely applicable to all industries. The factors which are operative in a specific industry, together with the organization and control of these factors, are discussed in detail for the mechanical engineer, designer, and plant operator concerned with mass-production controlled arc welding in industry.

CHUTE, GEORGE M.

Electronic control of resistance welding. New York: McGraw-Hill Book Company, Inc., 1943. 389 p. illus. 23 cm. \$4.00. 3687

Contents (abridged): Part I, Ignition contactors, tubes, and weld timers. Part II, Synchronous control of a-c welding. Part III, Energy-storage welding. Index.

Note: A practical manual which explains the tubes and circuits used to control resistance welders in industrial plants. Designed specifically for the aid of men who work with and maintain these controls.

GIACHINO, JOSEPH WILLIAM

Oxy-acetylene welding and cutting; learning units: rules: standards. Peoria, Ill.: The Manual Arts Press, 1942. 196 p. illus. 23 cm. \$2.75. 3688

Contents: Oxy-acetylene welding. Welding apparatus. Setting up the welding apparatus. Lighting, adjusting, and shutting off flame. Welding metal without using filler rod. Safety in welding. Laying a bead with welding rod. Welding plates with filler rod. Care of welding equipment. Welding a lap joint. Welding a tee joint. Oxygen and acetylene. Horizontal welding. Vertical welding. Backward welding. Overhead welding. Identification of metals. Expansion and contraction. Welding heavy steel plates. Cast-iron welding. Brazing or bronze welding. Pipe welding. Aluminum welding. Welding 18-8 chromium steel. Airplane welding. Flame cutting. Index.

Note: Techniques and applications of welding are discussed non-technically in this combined textbook and laboratory manual for beginning students. The book is intended to accompany a course of instruction and not to be used alone.

HENRY, OTTO HAZELTON, AND G. E. CLAUSSEN

Welding metallurgy. A series of lectures prepared for presentation in a fundamental course of metallurgy and metallography at Polytechnic Institute of Brooklyn, under the joint auspices of the Institute and the New York Section of the American Welding Society. New York: American Welding Society, 1940. 359 p. illus. 20 cm. \$1.50. 3689

Contents: Volume I: Introduction. Welding metallurgy. Temperature changes during welding. Types of steels and their manufacture. Crystals. How crystals grow from other crystals. Why

crystals are strong. The weld melt: Pure iron. Steel. The iron, iron carbide equilibrium diagram. Difficulties. The solid weld. Rate of cooling. Alloy steels. Appendix—metallurgical constants. Volume II: Heat and time in welding. The weld during cooling. Brittleness and cracking. Shrinkage. Fluxes and slags. Alloy steels. Stainless steels. Preheating and stress relief.

Note: A handbook intended to familiarize members of the welding industries, including fabricators and designers, with the composition and structure of the steel they use, to show how the steel is affected by the varied conditions of heat and stress in welding, to explain the methods of heat treatment, and to point out the way in which metallurgy can be used to control the welding process. No prior instruction in metallurgy is assumed nor is a detailed knowledge of welding technique required.

JAMES F. LINCOLN ARC WELDING FOUNDATION

Maintenance arc welding. Cleveland, O.: The James F. Lincoln Arc Welding Foundation, 1943. 234 p. illus. 24 cm. \$0.50 in U.S.; \$0.75, foreign countries. 3689a

Contents (abridged): Welded blast furnace shell, by Thomas J. Peiffer. Cement plant, by Harry A. Cozad. Ceramic plant, by Carlman Martin Rinck. Chemical plant, by J. E. Gurvin. Coke oven doors, by H. A. Immisch. Copper plant, by Gordon B. Forbes. Farm machinery, by Leslie Swick. Fibre and plastics plant, by Arthur B. Eastman. Gravel plant, by Henry Barrett. Machine tools, by H. W. Rushmer. Railway bridge, by A. M. Knowles. Saw mill, by Robert Schlieue. Steel mill, by J. B. Whitlock. Trestle for stocking iron ore, by Earl M. Ver Bunker. Truck wheel carrier, by Clinton Stutter. Hydraulic turbine maintenance on municipal power system, by Eric F. Bladholm.

Note: Contains 25 award papers selected from the 1940-42 progress program, dealing with the application of the arc welding process in maintenance of metal equipment and structures in a number of different industries. The present work is the second book to develop from the 1940-42 program, the first being *Studies in arc welding, design, manufacture and construction*, Cleveland, O., 1943 (see Index).

JAMES F. LINCOLN ARC WELDING FOUNDATION

Studies in arc welding; design, manufacture and construction. Cleveland, O.: The James F. Lincoln Arc Welding Foundation, 1943. 1295 p. illus. 22 cm. U.S., \$1.50; foreign countries, \$2.00. 3690

Contents (abridged): Section I, Automotive: Low-cost grading and hauling, by John F. Dillon, Jr. Universal joint drive shafts, by W. W. Slaght. Arc welding in bus construction, by D. F. Wagner. Wheel mounting for racing automobile, by E. W. Jacobson and F. F. Versaw. High-speed dirt movers, by G. J. Storatz. Section II, Aircraft: Welding aircraft engine mounts economically, by Peter F. Rossmann. Aircraft propeller blade, by Elek K. Benedek. Arc welding airplane boilers, by H. A. Lebert and S. B. Willoughby. Arc-welded tubular fuselage, by Alan C. Renn. Section III, Railroad: Arc-welded Diesel electric freight locomotive, by John H. Hruska. Welding a locomotive boiler, by John P. Roger. Underframes for all-welded railroad passenger cars, by J. E. Candlin, Jr., and A. M. Unger. Construction of rail grinding car, by J. C. Bowles. Section IV, Watercraft: Small boats arc welded, by William Atkin. Welded steel boat design, by H. S. Knerr. Section V, Structural: Welded airplane hangar, by Van Rensselaer P. Saxe. Steel and concrete bridges compared, by Glenn L. Enke. T-beams for residences, by S. R. McKay. Welded steel bents for subways, by Emanuel Scheyer. Section VI, Furniture and fixtures: Arc welding of plated tubular furniture, by Ernest Reiss. Bed rails and bed springs, by E. H. Atkinson. Welded display holder for printed matter, by Victor Paul Weidner. Section VII, Commercial welding. Section VIII, Containers. Section IX, Machinery: Bed for milling propeller blades, by P. W. Martin. Speedy welding cable connector, by W. G. Donaldson. Arc-welded tubular aircraft jigs, by Richard H. Holmes. Base of tilting fluoroscope, by Walter H. Haupt. Tractor transmission case and frame assembly, by Walter J. Brooking. Modern welded blast furnace, by Regis F. Fey. Arc welding in press machinery, by Lloyd A. Whittaker. Index.

Note: A collection of 98 technical papers on various phases of the arc welding process. The authors are executives, engineers, designers, and officials of production, construction and maintenance, and each has had considerable experience in his particular field. The present volume is the second of a series which is published at approximately two-year intervals, the first being *Arc welding in design, manufacture, and construction*, Cleveland, O.: James F. Lincoln Arc Welding Foundation, 1939, 1408 p.,

\$1.50. The papers were chosen from among the hundreds submitted in the Foundation's award program which is designed to stimulate the use of arc welding in industry through research and education in the design and practical applications of the process.

JEFFERSON, THEODORE BREWSTER

Welding—its questions and answers. Chicago: The Welding Engineer Publishing Company, 1942. 176 p. illus. 20 cm. \$1.50. 3691

Contents: Welding processes and terminology. Arc welding. Gas welding. Resistance welding. Thermit welding. Automatic welding. Weldable materials. Cutting processes. Flame treating. Testing and inspection. Index.

Note: A concise handbook in question and answer form for beginning welders and students. An attempt is made to answer only the more difficult questions. Non-technical terminology is used.

KERWIN, HARRY

Arc and acetylene welding. New York: McGraw-Hill Book Company, Inc., 1944. 240 p. illus. 20 cm. (A McGraw-Hill practical manual) \$2.50. 3692

Contents: Part I, Acetylene welding: The weld. Welding equipment. Preparation. Lessons 1-18. Aircraft welding. Final test plates of Army and Navy "A" test. Lessons 19-21. Pipe welding. Forehand and Linde weld techniques. Lessons 22-27. Identification of metals. Expansion and contraction. Cast iron welding and cutting. Hardfacing. Aluminum zinc die casting alloys (pot metal). Stainless steel welding. Brazing. Tables of the melting points of metals. Tables of cutting and welding pressures. Safety rules. Part II, Arc welding: The welding machine and its care. Volts and amperes. Polarity, heat control. The electrode. Wearing apparel. The welding booth. The welding bench. Beading technique. Lessons 1-14. Expansion and contraction. Cast iron welding. Aluminum welding. Carbon arc welding. Cutting with the arc. Testing weld samples.

Note: In order to show the student how to master the correct technique of welding, the author presents the basic step-by-step method of making a weld, and includes a careful description of the manner in which the welding equipment should be handled. This fundamental training in basic technique prepares the student for advanced work in the welding of alloy metals and the understanding of construction and joint design as applied to welding.

LINCOLN ELECTRIC COMPANY

Lessons in arc welding. Second edition. Cleveland, O.: The Lincoln Electric Company, 1941. 176 p. illus. 22 cm. \$0.50 in U.S.A.; \$0.75 elsewhere. 3693

Note: This book contains a series of 60 lessons of from one to two pages in length which present in a concise manner certain fundamental facts of welding for use in elementary training courses. Although the emphasis is upon the welding of mill steel electrodes and their various uses, there is considerable information included on all types of electrodes to assist the student in becoming an all-around welder. Questions and answers on each lesson are also included.

LINCOLN ELECTRIC COMPANY

Procedure handbook of arc welding design and practice. Seventh edition. Cleveland, O.: Lincoln Electric Company, 1942. 1267 p. illus. 22 cm. \$1.50. 3694

Contents: Welding methods and equipment. Technique of welding. Procedures, speeds and costs. Fleet-fillet technique. Weld metal and methods of testing. Weldability of metals. Welded steel construction—machine design. Designing of arc-welded structures. Typical applications of arc welding in manufacturing, construction and maintenance. General data reference. Index.

Note: A comprehensive reference book on arc welding, it includes a description of the arc welding technique, and data on welding various types of steel, iron, and nonferrous metals. Charts and diagrams on procedures, speeds, and costs are given. Average physical property tables, temperature conversion tables, load conversion tables, weights of alloys and metals, and other useful information in tabulated form are given at the back of the book. The seventh edition contains a large amount of material not included in the sixth edition.

LINDE AIR PRODUCTS COMPANY

The oxy-acetylene handbook. A manual on oxy-acetylene welding and cutting procedures. New York: The Linde Air Products Company, Unit of Union Carbide and Carbon Corporation, 1943. 587 p. illus. 24 cm. U.S., \$1.50; foreign countries, \$1.80. 3694a

Contents (abridged): Part I, General principles of oxy-acetylene process: Historical development of the oxy-acetylene process. The oxy-acetylene flame. Set-up and operation of equipment. General precautions in welding and cutting work. Metal properties important to welding. Tests for identifying metals. Expansion and contraction. Part II, Oxy-acetylene welding of ferrous alloys: The constitution and properties of iron alloys. Fusion welding sheet steel. Fusion welding mild steel plate. Welding steel pipe. Welding wrought iron, high-carbon steel, and cast steel. Welding alloy steels. Principles of bronze-welding. Welding cast iron. Part III, Oxy-acetylene welding of non-ferrous alloys: Welding aluminum. Welding copper and copper alloys. Welding nickel and nickel alloys. Welding magnesium. Welding lead. Part IV, Miscellaneous applications: Bronze-surfacing. Hard-facing. Lengthening the life of wearing parts. Silver-brazing. Oxy-acetylene heating and flame-treating. Part V, Oxy-acetylene cutting: Principles of oxygen cutting. Manual flame-cutting operations. Machine flame-cutting. Part VI, Inspection and management: Inspecting and testing welds. The business side of welding. Part VII (Appendix): Welding and cutting data. The air-acetylene flame and its uses. Index.

Note: Intended primarily as a book of instruction in vocational schools and shops, this manual covers, in a comprehensive manner, most aspects of oxy-acetylene welding and cutting. It was previously issued under the title of *Oxwelder's handbook* but has not been considerably enlarged and revised.

MACKENZIE, LOUIS BURTON, EDITOR

The welding encyclopedia, originally compiled and edited by L. B. Mackenzie; later editors, H. S. Card, Stuart Plumley; completely revised and re-edited by T. B. Jefferson. Eleventh edition. Chicago: The Welding Engineer Publishing Company, 1943. 976 p. \$6.00. 3695

Contents: Part I, An encyclopedia of welding. Part II, Appendices. Part III, A dictionary of trade names. Part IV, The welding industry buyers' manual. Part V, Index.

Note: A standard reference manual for welders, engineers, and students. This edition incorporates extensive rewriting and rearrangement of material. The arrangement is alphabetical, with numerous entries. Cross references are given from brief entries to extended articles under inclusive subject headings. In the appendices are fifteen sections, including: Classes of welding electrodes; Prequalified weld joints; Wire gauges and decimal equivalents; SAE steel specification; Ferrous alloy specifications; Alloying elements; Weld joints—good and bad; Gas consumption; Areas and circumference of circles. The dictionary of trade names includes both descriptions and manufacturers' addresses.

MANLY, HAROLD PHILLIPS

Electric and oxy-acetylene welding; an instruction book in arc, spot, butt and flash electric welding, gas welding and cutting, hand forging and welding, thermit welding, brazing and soldering. Chicago: F. J. Drake & Company, 1941. 272 p. illus. 17 cm. \$1.50. 3696

Contents: Metals and alloys. Heat treatment. Welding materials. Acetylene generators. Welding instruments. Oxy-acetylene welding practice. Soldering, brazing, and thermit welding. Hand forging and welding. Electric resistance welding. Electric arc welding. Index.

Note: The material presented in this brief book consists chiefly of definite instructions for practical workers and instructors as to how welds should be made. The book explains such operations as annealing, tempering, hardening, and heat treatment of steel and there is supplementary information on the properties of metals and type of welding tools and accessories.

MOYER, JAMES AMBROSE

Welding. New York: McGraw-Hill Book

Company, Inc., 1942. 185 p. illus. 23 cm. \$2.25.

3697

Contents: Welding with gas heat. Welding torches. Pressure gages and regulators. Study of oxyacetylene flame. Oxyacetylene welding technique. Characteristics of electric arc welding. Sources of current for arc welding. Electrodes and holders. Welded joints. Deposit of metal. Metallurgy of welding. Tests of materials and welds. Weldability of metals. Metal cutting with gas flame and electric arc. Other welding methods. Welding costs. Safety equipment. Trouble shooting for arc welding.

Note: Describes the various modern methods of welding metals, especially iron and steel. Welding by gas heat and electric current are equally stressed. Latest advances in the field have been covered, especially methods of machine welding.

ROSSI, BONIFACE E.

Welding and its application. New York: McGraw-Hill Book Company, Inc., 1941. 343 p. illus. 23 cm. \$2.50. 3698

Contents: Welding and its economy. Practical applications of welding in manufacturing, construction, and maintenance. Welding terms and their definitions. A study of the different welding processes and their basic principles. The electric arc and its application to the welding process. Arc-welding equipment. Technique of arc welding. Weldability of various metals by arc welding. Expansion, contraction, and residual stresses in welded structures. Welded jigs. Metallurgy of welding. Testing and inspection of welds. Flame and arc cutting of metals. Welding symbols and their use. Appendix: Useful engineering data and tables. Index.

Note: A textbook of collegiate grade intended not only for the beginner but also for the experienced welding operator and the designer or engineer interested in the application of welding. Emphasis has been placed on electric arc welding but a sketch of the welding industry as a whole is also given. A companion volume *Manual of instructions in welding* by the same author, New York: McGraw-Hill, 1941, 99 p., \$1.00 contains lesson sheets for use with the above text in shop practice courses.

SACKS, RAYMOND J.

Theory and practice of arc welding. New York: D. Van Nostrand Company, Inc., 1943. 383 p. illus. 25 cm. \$2.80. 3699

Contents: Industrial use of arc welding. Arc welding equipment. Mild steel electrodes. Fundamental joints and welds and their characteristics. Nature of iron and steel. Testing and inspection—use of weld gauges. Flame cutting of metals. Safety precautions—arc welding process. Fundamentals of blueprint reading. Welding symbols and instructions for their use. Lessons in oxy-acetylene cutting. Lessons in manual arc welding (fifty-eight complete lessons covering every phase of welding work with final tests). Questions on oxy-acetylene cutting jobs. Definitions of welding terms.

Note: This textbook is designed for a full-year course in arc welding for high school students or vocational school students, or for shorter and more intensive courses for industrial workers. It teaches the practical techniques as well as the principles, and thus prepares students to pass the United States Navy Test, as well as the American Society of Mechanical Engineers Code Test. It is arranged in the order of a practical job series, progressive in order of difficulty. The material on each job combines blueprints of the work to be done with sketches and photographs which show the proper handling of the equipment and the appearance of the finished weld.

UNITED STATES. WAR DEPARTMENT

Welding. War Department Technical manual, no. 1-430. Washington, April 24, 1942. Washington, D.C.: United States Government Printing Office, 1942. 180 p. illus. 22 cm. Paper, \$0.30. 3700

Contents (abridged): Oxyacetylene welding equipment. Welding fundamentals. Electric arc welding. Electric resistance welding. Welding steel and steel alloys. Welding ferrous castings. Cutting metal by the oxyacetylene process. Welding aluminum and alloys of aluminum and magnesium. Welding nickel alloys. Welding copper and copper alloys. Brazing and silver soldering. Hard surfacing with special alloys. Airplane construction and repair by welding. Welding tests. Index.

Note: This manual supersedes TM 1-430, February 20, 1941. Detailed and well-illustrated text for beginning welders. Covers care and handling of equipment with directions for each type of metal.

ELECTRICAL ENGINEERING

General

ABBOTT, ARTHUR LAURIE

National electrical code handbook. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1940. 595 p. illus. 19 cm. \$3.00. 3701

Contents: Definitions; general provisions. Approved types of wiring. Conductors. Installation requirements applying to all types of wiring. Open work on insulators; knob and tube work; bare conductors. Cable assemblies. Raceways. Underplaster extensions. Outlet, switch, and junction boxes and fittings; cabinets and cut-out boxes. Switches; panelboards; switchboards; auxiliary gutters. Lampholders; lighting fixtures; rosettes; plug receptacles; lamps. Electrical appliances. Motors; motor controllers; disconnecting means for motors. Motor wiring and protection. Generators; transformers; auto-transformers. Capacitors; resistors and reactors; lightning arresters; storage batteries. Services. Grounding. Over-current protection. Design of wiring installations. Branch circuits. Feeders and services. Outside wiring. Hazardous locations. Garages. Theatres, including motion-picture houses emergency lighting. Motion-picture studios; motion-picture projectors and equipment; sound-recording and reproducing equipment. Elevators. Cranes and hoists; trolley conductors. Signs and outline lighting. Circuits and equipment operating at more than 600 volts between conductors. Circuits and equipment operating at less than 50 volts. Radio equipment. Signal and control systems. X-ray and high-frequency equipment. Tables.

Note: Planned to enable electricians to understand the National Electrical Code and to do work in accordance with it. Gives all the code requirements, restating involved rules in simple language, plus explanations, practical directions, and diagrams, showing what the rules mean and how to apply them.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS

American standard definitions of electrical terms. Approved, American Standards Association, August 12, 1941; Canadian Engineering Standards Association, March 2, 1942. Sponsor, American Institute of Electrical Engineers. New York: American Institute of Electrical Engineers, 1942. 311 p. 27 cm. \$1.00; outside U.S., \$1.25. 3702

Contents: General (fundamental and derived) terms. Rotating machinery. Transformers, regulators, reactors, and rectifiers. Switching equipment. Control equipment. Instruments, meters and meter testing. Generation, transmission, and distribution. Transportation: General. Aircraft equipment. Land. Electromechanical applications. Electric welding and cutting. Illuminating engineering. Electrochemistry and electrometallurgy. Electrocommunication. Electronics. Radiology. Electrobiological, including electrotherapeutics. Miscellaneous. Index.

Note: The primary aim in compiling this glossary has been to express for each term the meaning which is generally associated with it in electrical engineering work in the United States. When possible, the definitions have been generalized so as not to preclude the different specific interpretations which may be attached to the term in particular applications, the greatest weight being given to the strictly engineering applications. The tendency is toward a simple statement of function rather than to the explicit description of all properties. The glossary is divided into various groups of subject-matter as indicated in the table of contents and terms are listed alphabetically within each group. Each term is

coded according to the numbering system proposed by the International Electrotechnical Commission and is thus identified by group, section, and term. Synonyms are indicated in parentheses, and certain fundamental and specialized terms are intentionally omitted.

BISHOP, CALVIN COLLIER

Electrical drafting and design. Second edition. New York: McGraw-Hill Book Company, Inc., 1931. 190 p. illus. 23 cm. \$2.00. 3703

Contents: General instructions for mechanical and electrical drafting. Electrical symbols and their use. Generator and feeder panel. Three phase panel. Outdoor substation. Switch and bus structure. Laying out wiring. Residence wiring. Artificial illumination. Tables and charts.

Note: A practical book on electrical drafting and design covering the work that has to be done in the office of an engineer, a contractor, or a power company. It gives the needed facts about drafting and design for layouts, switchboards, lighting, residence wiring, outdoor substations, motors and motor wiring.

BLALOCK, GROVER CLEVELAND

Principles of electrical engineering. Second edition. New York: McGraw-Hill Book Company, Inc., 1936. 584 p. illus. 23 cm. \$4.00. 3704

Contents: Electric currents and circuits. Fundamental units, rates, efficiency. The direct-current electric circuit. Magnetism and electromagnetism. The magnetic circuit. Electromagnetic induction. Dynamo design and construction features. Direct-current generators. Direct-current motors. Losses, efficiencies, heating and ratings. Batteries. Direct-current applications. Alternating voltages and currents. Sine wave and vector relations. The alternating-current circuit. Single-phase voltages and circuits. Polyphase voltages and circuits. The transformer. Polyphase induction motors. Single-phase motors. Alternating-current generators. The synchronous motor. Alternating-current applications. Conversion apparatus. Transmission and distribution. Illumination. Electronics. Electric meters. Installation, operation and maintenance of electrical equipment. The testing of electrical machinery. Laboratory experiments.

Note: A textbook for electrical engineering and other engineering students. The fundamental principles of the subject are presented, with reference to practical applications. Illustrative examples and practice problems are provided.

CHRISTIE, CLARENCE VICTOR

Electrical engineering; the theory and characteristics of electrical circuits and machinery. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1938. 717 p. illus. 23 cm. \$5.00. 3705

Contents: Electrostatics. Magnetism and electromagnetics. Electric circuits. Alternating-current circuits. Complex alternating-current waves. Polyphase alternating-current circuits. Direct-current machinery. Design of a direct-current generator. Synchronous machinery. Design of alternating-current generators and motors. Transformers. Converters. Induction motor. Alternating-current commutator motors. Transmission systems. Symmetrical components. Problems. Index.

Note: A text for junior and senior electrical engineering students. Theory and characteristics are discussed from the standpoint of electrical engineering and their application to the problems of the electrical engineer.

COOK, ARTHUR LEROY

Elements of electrical engineering; a textbook of principles and practice. Fourth edition, thoroughly revised, rewritten and reset. New York: John Wiley & Sons, 1941. 622 p. illus. 23 cm. \$4.00. 3705a

Contents: Electric and magnetic circuits; Electric circuits and the electric current. Resistance. Rheostats and resistors. The direct-current electric circuit. Power and energy. Magnets and magnetism. Magnetic effect of the electric current. Induced electromotive force. The electric field. Direct-current machinery: Parts of a D-C machine. Construction of D-C dynamos. D-C generator characteristics. D-C motor characteristics. Commutation. Armature reaction. Commutating poles and compensating windings. Losses and efficiency of D-C dynamos. Ratings and guarantees. Parallel operation of D-C generators. Special types of D-C generators. D-C motor starting and controlling devices. Batteries. Systems of D-C transmission and distribution. Alternating currents: Alternating currents and voltages. Sinusoidal currents and voltages. Alternating-current circuits. Production of polyphase voltages. Polyphase circuits. Alternating-current machinery: Transformers. Induction motors. Alternating-current generators. Synchronous motors. Synchronous converters. Single-phase motors. Alternating-current transmission and distribution. A-C switching and protective devices. A-C motor-starting and protective devices. Motor applications, A-C and D-C. Light and illumination. Electrical measuring instruments. Mathematical representation of vectors. Electronic devices. Appendix—tables.

Note: A textbook for college students. The student is expected to have had a course in physics, but, for convenience, the principles of electricity and magnetism are summarized. The method of presentation is intended to emphasize fundamental principles underlying electrical engineering practice rather than a mass of information regarding specific applications. Formulas are reduced to a minimum, encouraging the student to derive the result from the fundamental laws. Special attention is given to alternating-current circuits and machinery. Two chapters, "Light and illumination" and "Electronic devices," were completely rewritten to bring the material up to date in the fourth edition.

COOKE, NELSON MAGOR

Mathematics for electricians and radiomen. New York: McGraw-Hill Book Company, Inc., 1942. 604 p. illus. 23 cm. \$4.00. 3706

Contents: Introduction. Literal numbers. Addition and subtraction. Multiplication. Division. Equations. The slide rule—powers of ten. Units. Ohm's law—series circuits. Resistance—wire sizes. Special products and factoring. Fractions. Fractional equations. Ohm's law—parallel circuits. Simultaneous linear equations. Generator, motor and battery circuits. Exponents and radicals. Quadratic equations. Kirchhoff's laws. Logarithms. Application of logarithms to decibels and transmission lines. Angles. Trigonometric functions. Tables of functions. Solution of right triangles. Periodic functions. Elementary plane vectors. Alternating currents—fundamental ideas. Alternating currents—series circuits. Alternating currents—parallel circuits. Vector algebra.

Note: This text has one dominant aim: to furnish the electrical and radio student with a sound mathematical foundation and to show him how to apply this knowledge to the solution of practical problems most frequently encountered in actual practice. The mathematical scope of the book includes elementary algebra through quadratic equations, logarithms, trigonometry, elementary plane vectors, and vector algebra as applied to alternating current circuits. The book is equally suitable for classroom and self-instruction. Answers to the problems are included. A briefer adaptation which covers the mathematics in approximately the first third of this book is N. M. Cooke and J. B. Orleans, *Mathematics essential to electricity and radio*, New York: McGraw-Hill, 1943, 418 p., \$3.00.

CORCORAN, GEORGE FRANCIS, AND EDWIN B. KURTZ

Electrical engineering fundamentals. New York: John Wiley & Sons, Inc., 1941. 450 p. illus. 23 cm. \$4.00. 3707

Contents: Physical quantities and their units. Electric charge and permittivity (Coulomb's law). Elementary electrostatics (analytical determination of capacitance). Electric current. D-C circuit analysis (Kirchhoff's laws). Elementary electrochemistry. Magnetic field concepts. Electromagnetism (as applied to electrical engineering).

Ferromagnetic circuits. The circuit parameters R , L , and C . Curvilinear-square field mapping. Appendix. Index.
Note: A systematic treatment of electricity and magnetism, suitable for the first fundamental course in electrical engineering. Although the book deals principally with unvarying or direct-current theory, every attempt is made to bring out the natural and basic effects caused by varying currents and voltages. Over 300 illustrations are included. Answers are included to some of the problems.

CROFT, TERRELL WILLIAMS

American electricians' handbook; a reference book for practical electrical workers. Revised by Clifford C. Carr. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1942. 1634 p. illus. 19 cm. \$5.00. 3708

Contents: Fundamentals. Properties and splicing of conductors. Circuits and circuit calculations. General electrical equipment and batteries. Generators and motors. Transformers. Outside distribution. Interior wiring. Electric lighting. Wiring tables.

Note: This book contains practical descriptions, information, and data to aid electrical men in selecting, installing, and operating electrical apparatus and materials. Accurate data based on correct engineering principles are presented in simple language so that the book is of equal value to the man of little technical training and to the engineer. In this edition a number of new sections and over 500 pages have been added.

CROFT, TERRELL WILLIAMS

Practical electricity. Revised by George H. Hall. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1940. 701 p. illus. 21 cm. \$3.50. 3709

Contents (abridged): Matter and the electron theory. Magnetism. Fundamental ideas concerning electricity. Currents of electricity. Electromotive force. Current, resistance and Ohm's law. The generation of electrical energy. Electric circuits. Electromagnetism. The magnetic circuit. Applications of electromagnets. Magnetic traction and lifting magnets. Electrolysis. Storage batteries. Electromagnetic induction. Inductance. Energy stored in magnetic field. Eddy currents. Principles of electric generators. Principles of direct-current generator armatures. Armature reaction, commutators and commutation. Multipolar direct-current generators. Direct-current armature windings. Direct-current generator characteristics. Direct-current motor principles. The shunt motor and its starting and control. Series and compound wound motors. Characteristics of alternating currents. Alternating-current generator principles and construction. Alternating-current vectors and vector diagrams. What reactance and impedance really mean. Figuring alternating-current circuits. Power and power factor in alternating-current circuits. Transformers, their principles and applications. Three-wire distribution and systems. Vacuum tubes.

Note: A presentation for the man with little mathematical training.

DAWES, CHESTER LAURENS

A course in electrical engineering. Third edition. New York: McGraw-Hill Book Company, Inc., 1934-37. 2 v. illus. 21 cm. (Electrical engineering texts) \$8.00. 3710

Contents (abridged): Volume I, Direct currents: Resistance. Primary and secondary batteries. Electrical instruments and measurements. The magnetic circuit. Inductance. Electrostatics. The generator. The motor. Losses; efficiency; operation. Transmission and distribution of power. Volume II, Alternating currents: Alternating current and voltage. Alternating current circuits. Complex quantities. Alternating current instruments and measurements. Polyphase systems. The alternator. Alternator regulation and operation. The transformer. The induction motor. Single-phase motors. The synchronous motor. Rectifiers: the synchronous converter. Transmission of power by alternating current. Vacuum tubes. Rectifiers.

Note: A comprehensive course that covers in a simple manner the general field of electrical engineering for elementary college or trade school courses. Volume I begins with the most elementary conceptions of magnetism and current-flow and gradually advances to a discussion of the many types of machinery, transmission devices, etc., which are met in practice. Volume II

presents the laws of alternating currents and their applications to measurements, polyphase circuits, machinery and power transmission. Simple mathematics is used wherever possible in the discussion of alternating current theory.

DAWES, CHESTER LAURENS

Industrial electricity. Second edition. New York: McGraw-Hill Book Company, Inc., 1939. 2 v. illus. 21 cm. (Electrical engineering texts) Part I, \$2.20; Part II, \$2.75. 3711

Contents (abridged): Part I (i.e. Volume I), Direct currents: Resistance. Ohm's law and the electric circuit. Battery electromotive force—Kirchhoff's laws. Storage batteries. Electrical instruments and electrical measurements. Cable testing. Measurement of power. Electromagnetism. The magnetic circuit. Inductance. Electrostatics; capacitance. The generator. The motor. Automobile starting and lighting systems. Part II (i.e. Volume II), Alternating currents: Alternating current and voltage. Single-phase alternating-current circuits. Polyphase systems. The alternator. The transformer. The polyphase induction motor. Transmission and distribution of electrical energy. Illumination and photometry. Electron tubes. Interior wiring.

Note: These volumes are intended as textbooks for elementary electrical engineering courses in vocational schools and other schools below collegiate grade. Only the simplest mathematics is used. The industrial applications of electricity are also described. The second edition contains new references to recent developments in electrical engineering particularly in measuring instruments, the manufacture of electrical machinery and in industrial applications. Part II may also be used as a supplementary text for intermediate courses in alternating-current machinery.

GERR, STANLEY

Japanese-English glossary of electrical and electrocommunication terms, including radio, telegraphy and telephony, with a section in Kana. New York: G. E. Stechert & Co., 1944. 205 p. illus. 23 cm. Paper, \$2.50. 3711a

Note: This Japanese-English glossary of electrical and electrocommunication terms was prepared originally for the United States Army Signal Corps. Each term is listed in three columns: the Japanese character, its Japanese pronunciation, and its English equivalent. Space is provided for the owner to insert additional terms. The work is intended as a supplement to ordinary Japanese-English dictionaries for the use of translators in the fields of electricity and communications.

GORDER, LESLIE O., AND OTHERS

Electrical and radio dictionary, including symbols, formulas, diagrams, and tables. Prepared by L. O. Gorder, Carl H. Dunlap, Enno R. Haan. Revised and enlarged edition. Chicago: American Technical Society, 1944. 114 p. illus. 21 cm. \$1.00. 3712

Contents (abridged): Electrical symbols for architectural plans. Circuits. Diagrams. Symbols. Formulas. Abbreviations used on controller diagrams. Installation diagrams—automatic starter. Direct-current generator diagrams. Motor diagrams. Dictionary of electrical terms. Dictionary of radio terms. Symbols on electronic diagrams. Definitions of electronic terms. Useful tables. Morse code. Copper magnet wire data. Abbreviations and letter symbols. Electrical formulas. Calculating size of conductor. Handy tables—English to metric system—measure—weight—energy. Current-carrying capacities of conductors in amperes—table. National electrical code standards—wiring. Conductor insulations—table. Maximum wires in conduit, with illustrations. Electrical conduit—size, dimensions, and weight. Motor wiring table. Copper wire table. Comparison of thermometers. Decimal equivalents. Index.

Note: A handy book for those engaged in electrical and radio work. The dictionary, which covers 71 pages, is divided into two parts—electrical and radio—and its purpose is not to show pronunciation and derivation but to bring out the special meanings of words as applied to electricity and radio. Contained in the balance of the pages are many tables and diagrams needed by electricians in their work, and pictures showing the meanings of electrical symbols. The first edition was a smaller volume published in 1927 under the title *Electrical dictionary*, by Enno R. Haan and C. H. Dunlap.

GRAHAM, FRANK DUNCAN

Audels handy book of practical electricity with wiring diagrams; ready reference for professional electricians, students and all electrical workers. New York: T. Audel and Co., 1942. 1434 p. illus. 16 cm. \$4.00. 3713

Contents (abridged): Electricity. Primary cells. Conductors and insulators. Electrical and mechanical energy. Current effects. Magnetism. Electrolysis. Electroplating. Alternating current. A.C. and D.C. apparatus. Inside and outside wiring. Power wiring. Marine wiring. Electric lighting. Dynamos. D.C. motors. Alternators. A.C. motors. Armature winding and repairs. Motor driven tools. Electric railways. Pumps, elevators and cranes. The telegraph and telephone. Miscellaneous applications. Index.

Note: An elementary text written for the practical worker. The material is mainly descriptive and is written in non-technical language.

GRAY, ALEXANDER

Principles and practice of electrical engineering. Revised by G. A. Wallace. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1940. 586 p. illus. 23 cm. \$4.00. 3714

Contents (abridged): Matter and electricity. Magnets and magnetism. Electromotive force. Electric circuits and resistance. Work and power. Rheostats and resistors. Magnetic circuits and magnetic properties of iron. Solenoids and electromagnets. Construction and excitation of direct-current machines. Theory of commutation. Armature reaction. Characteristics of direct-current generators. Characteristics of direct-current motors. Direct-current motor applications. Losses, efficiency, and heating. Primary and storage batteries. Alternating voltages and currents. Alternating-current circuits. Transformers. Polyphase induction motors. Alternating-current generator characteristics. Polyphase-motor applications and control. Single-phase motors. Converting and rectifying apparatus. Alternating-current transmission and distribution. Electric lighting. Thermionic tubes and photoelectric cells. Laboratory course. Appendix. Index.

Note: A textbook in electrical engineering for those students who desire a working knowledge of the subject, but are not specializing in it. The book emphasizes fundamental principles, and develops the subject by elaborating on them rather than by the solution of mathematical equations. This fifth edition represents a revision of the text, with changes in sections dealing with the induction motor, wattmeter, induction voltage regulator, and numerous other subjects.

HAMMOND, JOHN WINTHROP

Men and volts; the story of General Electric. Philadelphia: J. B. Lippincott Company, 1941. 436 p. illus. 23 cm. \$2.50. 3715

Contents (abridged): The creative period of the arc light and the incandescent light. The period of commercial introduction of electric lighting. Electric transportation, motors, the transmission of power. The period of expansion and consolidation. The formation of the General Electric Company. The development of big generating units, beginning of hydroelectric projects, expansion of systems through transmission. The development of steam turbines, start of industrial research and of commercial and financial expansion. Spectacular applications and discoveries, continued expansion, birth of radio, major achievements—marking the end of the pioneer period. Appendix. Index.

Note: A popularized history of the origin and growth of the General Electric Company. Outstanding contemporary men and inventions outside the company are treated briefly.

HUDSON, RALPH GORTON

Engineering electricity. Third edition. New York: John Wiley & Sons, Inc., 1941. 284 p. illus. 20 cm. \$3.00. 3716

Contents: Direct-current circuits. Electromagnetism. Electromagnetic induction. The direct-current dynamo. Direct-current measurements. Alternating-current circuits. Alternating-current measurements. Three-phase alternating current. The alternating-current transmission line. The synchronous generator. The synchronous motor. The synchronous converter. Electronic theory and applications. The transformer. The three-phase induction

motor. The alternating-current series commutator motor. Tables. Practice problems. Index.

Note: This book, intended for technical students not specializing in electrical engineering, includes an outline of the fundamental principles and applications of electricity and magnetism most frequently encountered in engineering practice. A chapter on electronic theory and applications is included in this third edition, as well as a large section of practice problems with answers.

KARAPETOFF, VLADIMIR, AND BOYD C. DENNISON

Experimental electrical engineering and manual for electrical testing for engineers and for students in engineering laboratories. Revised by Boyd C. Dennison. Fourth edition, completely revised and reset. New York: John Wiley & Sons, Inc., 1933-41. 2 v. illus. 23 cm. Vol. 1, \$6.00; Vol. 2, \$7.50. 3717

Contents (abridged): Volume 1: Measurement of resistance. Ammeters and voltmeters. Watt-meters and power-factor meters. Watthour meters. Reactance and resistance in A-C circuits. Permeability and hysteresis loop. Direct-current motor. Losses in direct-current machinery. Armature reaction and commutation. The transformer. Instrument transformers. The alternator. The polyphase induction motor. The single-phase induction motor. Storage batteries. Volume 2: Capacitance and inductance in A-C circuits. Alternating-current bridges. Voltage regulation. Ground detectors and insulation measurements. Current and voltage relations in Y-connected polyphase systems. Unbalanced three-phase systems. Power measurements in three-phase systems. Three-phase, delta, V-, and T-connected systems. Harmonics in polyphase systems. The synchronous motor. The synchronous converter. The approximate circle diagram of the induction motor. Commutator-type motors. Controllers. Mercury-arc and thermionic rectifiers. Oscillographs. Harmonic analysis. Fundamentals of electronic devices. High-frequency measurements. Index.

Note: These books present electrical experiments for actual laboratory use, together with such additions as are needed to make the books complete as reference material. Detailed descriptions are included of the machinery under consideration, and the practical needs for arrangements and procedures of operation. The object and method of each experiment, as well as instructions for the taking of data, are given in detail. The fourth edition includes new characteristic curves taken on actual equipment and new illustrations of commercial apparatus. Extended use of complex notation in vector representation has been extended. Chapters on telephone practice and primary cells have been omitted in the present work.

KIMBERLY, EMERSON EDWARD

Electrical engineering. Scranton, Pa.: International Textbook Company, 1939. 324 p. illus. 21 cm. (International texts in electrical engineering, E. E. Dreese, consulting editor) \$2.75. 3718

Contents: Magnetic fields and the generation of electromotive force. Commercial forms of electromotive force. Power and energy. The electric circuit. Three-wire distribution. Electromotive forces in series. Circuits with resistance, inductance and capacitance. Electrical conductors. Electromagnets. Polyphase circuits. Electric heating. The direct-current machine. The direct-current machine as a motor. Losses, efficiency and rating of direct-current machines. Mechanical connections between motor and load. Conversion of direct-current generator to direct-current motor. Control of direct-current motors. The polyphase induction motor. The polyphase synchronous motor. Alternating current generators. Transformers, electrical instruments and meters. The single-phase motor. Electric batteries. Economics of use of electrical apparatus. Electric power rates. Power factors correction. Illumination. Electronic devices. Special motors and generators. Appendix. Index.

Note: Written specifically for use of engineering college students not majoring in electrical engineering, the order of topic presentation is dictated largely by need of correlation between classroom and laboratory practice. The author believes the functional treatment is to be preferred for non-electrical engineers. The book assures acquaintance with more common types of apparatus, intelligent electric power equipment selection, and enough facility in the language of electricity to deal with practical engineering problems.

KRON, GABRIEL

A short course in tensor analysis for electrical engineers. New York: John Wiley & Sons, Inc., 1942. 250 p. illus. 23 cm. \$4.50. 3719

Contents (abridged): Part I, General asymmetrical networks: Transformation theory. Reactance calculation of armature windings. The laws of transformation. Unbalanced multiwinding transformers. Method of symmetrical components. Rectifier circuits. Phase-shift transformers. Differentiation and integration of tensors. The field equations of Maxwell. Part II, Rotating machinery: Transformation tensor. Performance calculations. Regulating devices. Elimination of axes. The revolving-field theory. Polyphase machines. Reference frames. Speed control systems. Equations for general rotating axes. Small oscillations. The hunting of machines. Index.

Note: The purpose of this book for advanced students of electrical engineering is to establish, manipulate, and solve the equations of performance of complex engineering systems in an organized manner. The content comprises a brief outline of the tensorial method of attack on certain problems of stationary and rotating electrical networks. The work is based on lectures delivered to students in the advanced course in electrical engineering of the General Electric Company.

KUEHN, MARTIN H.

Mathematics for electricians. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 254 p. illus. 21 cm. \$1.75. 3720

Contents: Preface to the second edition. Preface to the first edition. Substitution. Addition of signed numbers. Solution of simple equations. Ohm's law. Solution of equations. Solution of series circuits. Equations containing fractions. Power in the electrical circuit. Subtraction of signed numbers and removal of parentheses. Multiplication and division of signed numbers. Square root. Use of the formula. Multiplication and division of polynomials. Angles, areas, and volumes. Factoring. Solution of quadratic equations. The slide rule. Graphs. Solution of problems involving percentage. Parallel circuits. Generator and motor problems. Battery problems. Solution of literal equations. Solution of simultaneous equations. Kirchhoff's laws. Ratio and proportion. Similar figures. Trigonometric functions. Fundamental alternating-current ideas. Vectors. Complex quantities. Appendix. Index.

Note: This text for home study or vocational school use applies mathematical principles to the solving of practical problems. Nearly 2,000 practice problems are given. The principal change from the 1930 edition is the addition of chapters on alternating current problems; other chapters were rewritten and the number of problems increased.

LINCOLN, EDWIN STODDARD

Lincoln's Industrial-commercial electrical reference. New York, N.Y.: The Electrical Modernization Bureau, 1941. 1308 p. illus. 28 cm. \$10.00. 3721

Note: A reference book designed to give practical data about a wide variety of electrical equipment used in commercial and industrial applications. The work is arranged by classified sections such as Motors and generators, Electric furnaces, and Electronic equipment. Sections devoted to equipment contain such information as use, operating characteristics, economic factors, control, inspection, and repair. In addition there are general sections such as Power factor and correction, and Protection against personal injury. The work is of interest to engineers, factory executives, and other persons concerned with the selection and use of electrical machinery and equipment.

MACLAREN, MALCOLM

The rise of the electrical industry during the nineteenth century. Princeton: Princeton University Press, 1943. 225 p. illus. 24 cm. \$3.75. 3722

Contents: Early history. Electric communication systems. Systems of illumination. Motors and their application. Direct-current generators. Precision instruments and methods of measurement. Direct-current switchboards and distribution systems. Early alternating-current developments. Commercial development of alternating-current systems. Bibliography. Index.

Note: A review for the general reader of the development of the electrical industry in the United States of America from the beginning to its establishment as a major industry at the end of the last century. The author gives attention to the financial and commercial events that accompanied this expansion, but his primary purpose has been to write an engineering history, tracing the origin, development, and use of batteries, motors, generators, transformers, measuring devices, switchboards, and systems of communication, illumination and transmission. The bibliography contains references to papers recording the discoveries and inventions mentioned in the text of the book.

MOYER, JAMES AMBROSE, AND JOHN F. WOSTREL

Industrial electricity and wiring. Third edition. New York: McGraw-Hill Book Company, Inc., 1943. 541 p. illus. 21 cm. \$2.75. 3723

Contents: Fundamental theory and units. Splicing and soldering wires. Calculation of wiring systems. Wiring methods and types. Details of wiring in conduits and moldings. Wiring old buildings and unit costs. Industrial and house appliances. Electric generators and general wiring. Industrial electric motors and motor wiring. Transformers and connections. Industrial lighting. Fluorescent lighting. Wiring for theater services. Residential lighting equipment. Estimating industrial and house wiring. Distribution systems. Circuit control apparatus. Grounding of systems and equipment. Wiring for miscellaneous services. Interference in radio receiving sets. Appendix. Index. References to National Electrical Code.

Note: A text for vocational courses and practical electricians. It covers basic principles, but it is primarily a book on American practice. New material in this edition includes the chapters on fluorescent lighting and radio interference. Numerous changes have been made to bring the text in line with the requirements of the 1940 revision of the National Electrical Code.

MUELLER, GEORGE VERNON

Introduction to electrical engineering. New York: McGraw-Hill Book Company, Inc., 1940. 306 p. illus. 23 cm. \$2.75. 3724

Contents: Some fundamental ideas about electricity. Applications of Ohm's law and Kirchhoff's laws. Further applications of Ohm's law and Kirchhoff's laws. Properties of metallic conductors and of insulators. Nonlinear resistance circuits. Electrochemistry. Magnetic circuits and fields. Induced and generated electromotive force. The dielectric circuit. Electronic tubes and circuits. Appendix: Instruction for laboratory work. Experiments.

Note: A textbook for engineering colleges. It points out the physical relations, the mathematical expression of the relations, and the graphical interpretations of the expressions in each type of circuit—electric, magnetic, and dielectric—under transient as well as steady state conditions. Wherever possible, typical oscillograms are used to illustrate important principles.

NADON, JOHN M., AND BERT J. GELMINE

Industrial electricity; a simple treatise of fundamentals of electricity, machines, and controlling equipment. New York: D. Van Nostrand Company, Inc., 1939. 607 p. illus. 21 cm. \$3.00. 3725

Contents: Electrical algebra. Fundamentals of electricity. Wiring. Magnetism. Armature winding. Generators. Motors. Controllers. Geometry and trigonometry. Alternating current. A.C. circuits. Transformers. Polyphase systems. Alternators. Induction motors. Stator winding. Multi-speed induction motors. A.C. controllers. Electrical instruments. Electron tubes. Welding systems. Electrical drawing.

Note: This textbook was developed at the Apprentice School of the Ford Motor Company, to combine an elementary treatment of principles of electricity with an account of the operation and construction of important industrial equipment.

PENDER, HAROLD, AND OTHERS, EDITORS

Electrical engineers' handbook, prepared by a staff of specialists under the editorship of Harold Pender, William A. Del Mar, and Knox McIlwain. Third edition, rewritten. New York: John Wiley & Sons, Inc., 1936. 2 v. illus. 22 cm.

(Wiley engineering handbook series. Vol. iv-v) Vol. I, \$6.00; Vol. II, \$5.00. 3726

Contents: Volume I, Electric power: Mathematics, units and symbols. Properties of materials. Electric circuits and electric lines. Resistors, reactors, magnets. Measurements and measuring apparatus. Principles of electrochemistry. Batteries. Direct-current machines. Alternating-current machines. Transformers. Converters and rectifiers. Switching, control, and protection. Power stations and substations. Power transmission and distribution. Lighting and heating. Industrial applications of motors. Transportation. Electrochemical and electrothermal industries. Electricity on the farm. Index. Volume II, Electric communications and electronics: Mathematics, units, symbols. Properties of materials. Electric circuits, lines, and fields. Resistors, inductors, capacitors. Electron tubes. Electromechanical-acoustic devices. Circuit elements. High-frequency transmission. Acoustics. Electrical measurements. Telegraphy. Sound-reproduction systems. Telephony. Facsimile transmission and reception. Television. Electronic control and navigation equipment. Medical applications of electricity. Index.

Note: These two volumes together cover every important topic of electrical engineering in this third edition. The encyclopedic arrangement has been abandoned for a more practical sequence of material. The electric power volume has been arranged in nineteen sections, each dealing with a general topic. The treatment accorded each topic has been handled so that each receives attention in accordance with the importance of the topic in relation to other subjects in the field. New material, such as air-conditioning, electric water-heating, and electricity in agriculture, has been included, and subjects of newly developed importance have been expanded. The electric communication and electronics volume takes up the whole field of communication as a unit, and gives extensive information on electronic control systems. Materials are arranged in tabular form, with the mechanical and electrical properties listed with each material. Bibliographies of related material are included. The second edition, New York: John Wiley & Sons, Inc., 1922, was entitled *Handbook for electrical engineers*.

RAETH, FREDERICK CHILTON

Practical electricity for home study. New York: D. Van Nostrand Company, Inc., 1941. 4 v. illus. 22 cm. \$8.95. 3727

Note: This set of four books explains in detail the simpler principles of electricity and the more general facts regarding the construction and operation of electrical apparatus. Since it has been designed for home study, it avoids mathematical methods, and the more complex circuits and equipment. Extensive use of photographic illustrations and diagrams has been made to facilitate the study of electricity without class instruction.

REED, MYRIL BAIRD

Fundamentals of electrical engineering. Scranton, Pa.: International Textbook Company, 1938. 326 p. illus. 21 cm. (International texts in electrical engineering, E. E. Dreese, consulting editor) \$3.00. 3728

Contents: Introduction. Current, voltage, power, and energy. Resistance and conductance. Direct current circuits. Use of measuring instruments. Electrostatics. Magnetostatic fields. Electromagnetic fields. Magnetic circuits containing iron-cored coils. Changing magnetic fields and their effects. Energy relations in electric and magnetic fields and circuits. Transients. Conduction through gases and across gas-solid boundaries with applications to electron tubes. Appendix. Index.

Note: Prepared as a textbook for the sophomore year of a college course in electrical engineering, this volume gives a concise treatment of the fundamentals on which the subject is based. A definite attempt has been made to introduce mathematical ideas, and a knowledge of integral calculus is assumed. Problems have been written so that considerable thought on the student's part is required for solution. In the treatment of electric circuits the much-used double subscript method of A-C circuits has been used for D-C circuits. Double subscripts also have been applied to Faraday's law for self- and mutual-induction voltages.

RICKER, CLAIRE WILLIAM, AND CARLTON E. TUCKER

Electrical engineering laboratory experiments. Fourth edition. New York: McGraw-

Hill Book Company, 1940. 458 p. illus. 23 cm.
\$3.00. 3729

Contents: Table of symbols. Measuring devices and their applications. The calculation of instrument ranges. Laboratory records and reports. Safety rules and suggestions. Experiments.

Note: This standard manual gives the theory involved in each experiment in sufficient detail so that reference books will, in general, not be necessary. The procedure required to obtain certain results is outlined in detail. At the end of the procedure is a list of results which can be determined from the data taken by following the outlined procedure.

RINDE, CHARLES ANDERSON

Electricity and its application to civilian and military life. New York: Harcourt, Brace and Company, 1943. 466 p. illus. 24 cm. \$3.50. 3730

Contents (abridged): Both magnets and electric charges exert force on objects across space. An electric current is readily obtained by transforming chemical energy into electrical energy. How a steady current flows in a complete circuit. How electricity and magnetism are related. Energy may be transformed from any one of its forms to any other. How alternating and other rapidly varying currents flow in electric currents. How electrical devices are grouped to work for man in various ways. Appendix. Glossary. Index.

Note: A clearly written introductory book, suitable for use as a high school or vocational school text and also for self instruction. The theme of approach is control of electrons. Exposition is clear and the illustrations are well chosen. X-rays, fluorescence, and television are prominently treated. Quizzes and suggested experiments are given for each chapter. Included in the appendix are various tables of elements and resistances, a summary of circuit formulas, graded references.

STANDARD HANDBOOK FOR ELECTRICAL ENGINEERS, prepared by a staff of specialists; Archer E. Knowlton, editor-in-chief, R. M. Shoop, assistant editor. Seventh edition, thoroughly revised and enlarged. New York: McGraw-Hill Book Company, Inc., 1941. 2303 p. illus. 23 cm. \$8.00. 3731

Contents: Units and conversion factors. Electric and magnetic circuits. Measurements. Properties of materials. Circuit elements. Transformers, regulators and reactors. Alternating-current generators and motors. Direct-current generators and motors. Rectifiers and converters. Prime movers. Power plant economics. Power system electrical equipment. Power transmission. Power distribution. Wiring design—commercial and industrial buildings. Illumination. Industrial power and applications. Electric heating and welding. Electricity in transportation. Electrochemistry and electrometallurgy. Batteries. Wire telephony and telegraphy. Electronics and electron tubes. Radio and carrier communication. Codes and standard practices. Electrophysics.

Note: A standard reference work for all persons in the electrical engineering profession or whose work in industry or engineering touches on this field. Presents a handy-reference compilation of practical, usable data from all fields of electrical engineering practice, plus the most frequently required fundamental theory, units, and systems of measurement, made dependable by the work of more than 100 engineers, scientists, teachers, and other authorities. The most noticeable change in the seventh edition is the larger page size and more legible typography. Extensive revisions covering advances in electrical engineering from 1933 to 1941 have been made in such subjects as power transmission, electronics, radio, and telephony.

STRONG, EVERETT MILTON

Electrical engineering, basic analysis. New York: John Wiley & Sons, Inc., 1943. 391 p. illus. 22 cm. \$4.00. 3732

Contents: Introduction. Electric current and conductors. Electrical measuring instruments. Measurement of resistance. Electromotive force. Electromagnetic induction. Alternating emf. Electric power circuits. Electrical networks. Varying resistivity and non-uniform section of conductors. Magnetics. Magnetic circuits. Magnetic force—electromagnets. Inductance. Circuits with resistance and inductance. Electrostatics. Circuits with resistance and capacitance. Series circuits with R , L , and C . Appendixes. Index.

Note: This elementary book departs from traditional treatment to recognize alternating current and voltage as the basic material in electrical engineering. MKS units are used for all derivations, but units of practice are recognized for the purpose of computation in engineering problems. Mathematics is not avoided; calculus through both differential and integral is prerequisite. The book selects and presents material with particular attention to interest as well as degrees of difficulty.

TIMBIE, WILLIAM HENRY

Basic electricity for communications; a textbook for workers in communications and industrial electronics. New York: John Wiley & Sons, Inc., 1943. 603 p. illus. 22 cm. \$3.50. 3733

Contents: Some fundamentals. Ohm's law. Electrical power and energy. Electrical conductors. Measurement of resistance. Ohm's law extended; Kirchhoff's law. Batteries. Magnets and magnetic circuits. Generators and motors. Inductance. Capacitance. Alternating currents. Simplification of circuits by Thévenin's theorem. Vacuum tubes and gaseous conduction. Electrical communication systems. Appendix. Index.

Note: An elementary textbook intended for the worker in communications and industrial electronics who does not intend to continue the formal study of electronics but who must be familiar with basic electrical principles. Application to practical problems and modern equipment is emphasized rather than formal theory or mathematical formulas. A survey is given of the broader problems met in wire and radio transmission of telegraph signals and speech, and the application of Ohm's law to communicative circuits is thoroughly explained.

TIMBIE, WILLIAM HENRY

Elements of electricity. Third edition, completely rewritten. New York: John Wiley & Sons, Inc., 1937. 569 p. illus. 22 cm. \$3.00. 3734

Contents: Ohm's law. Electrical power and energy. Concerning wire. Measurements of resistance. Magnets and magnetism. The magnetic circuit. The generator. The operation of direct-current generators. Electric motors. Batteries and electrochemical action. Some more difficult problems. Inductance. Capacitance. Alternating currents. Vacuum tubes and gaseous conduction. The electrostatic circuit. Appendix. Index.

Note: This book for college students and others interested in a clearly written introduction is confined to an adequate treatment of a few fundamental ideas. It discusses only the elementary principles of direct- and alternating-current generation, distribution, and utilization in lighting, power, and communications. The major changes in this edition are in the discussion of electronic and vacuum tubes. The plan followed in former editions has been retained; new theories are approached through familiar illustrations and applied to the solution of the common practical problems of modern industry.

TIMBIE, WILLIAM HENRY, AND VANNEVAR BUSH

Principles of electrical engineering. Third edition, completely rewritten. New York: John Wiley & Sons, Inc., 1940. 540 p. illus. 22 cm. \$4.50. 3735

Contents: Some fundamental considerations. Kirchhoff's laws. Electric power and energy. Electric networks. The calculation of resistance. Magnetic circuits. Magnetic materials. Induced and generated EMF's. Force on a conductor. Steady electric fields. Steady magnetic fields. Electronics. Conduction in solids and liquids. The interlinking of electric and magnetic fields. Index.

Note: Provides elementary material at the level of first-year college engineering courses in the principles of the subject, and presents recent developments in the science of electricity. This third edition lays an adequate groundwork for the advanced modern methods of analysis of electric and magnetic problems. It supplies the basis for the use of more powerful methods of circuit analysis which have lately come into use. A treatment of the fundamental problems of the electric field and the magnetic field has been presented, and their relation to modern circuit analysis. The practical system of units, the mks system, has been introduced gradually in the early part of the text and used exclusively in the latter part, although the equivalent cgs units are given in parentheses.

VINAL, GEORGE WOOD

Storage batteries; a general treatise on the physics and chemistry of secondary batteries and their engineering applications. Third edition, rewritten and reset. New York: John Wiley & Sons, Inc., 1940. 464 p. illus. 23 cm. \$5.00.

3735a

Contents: Introduction. Materials and methods of manufacture. The electrolyte. Theory of reactions, energy transformation, and voltage. Capacity. Operation. Resistance. Efficiency. Testing of storage batteries. Present-day uses for storage batteries. Index.

Note: This book constitutes a general treatise on the physics and chemistry of secondary batteries and their engineering applications. The student interested in theory and the practical man also will find it useful. Additions and substitutions in this edition include material on lead alloys, porous rubber separators, nickel-cadmium cells, heat content and heat capacity of sulphuric acid solutions, resistivity and viscosity of the electrolyte, properties of alkaline electrolytes, revised theoretical discussion of both lead-acid and Edison batteries, new tables of e.m.f. and temperature coefficient in relation to the acid concentration, revised discussion of charging methods. Chapter x, which has been entirely rewritten, describes the installation and operation of storage batteries in telephone central offices, and on railroads, emergency lighting systems, trucks and tractors, marine applications, Diesel cranking, central stations, automotive and aircraft applications, miner's lights, etc. Bibliographies are included.

Measurements

AMERICAN STANDARDS ASSOCIATION

American standard code for electricity meters. Prepared by a sectional committee of the American Standards Association under the joint sponsorship of the National Bureau of Standards, Association of Edison Illuminating Companies, Edison Electric Institute. Fourth edition, 1941. Approved, American Standards Association, May 5, 1941. New York: Edison Electric Institute, 1941. 128 p. 22 cm. \$2.00. 3736

Contents: General definitions. Measurement of power and energy. Specifications for acceptance of types of electricity meters. Specifications for acceptance of types of auxiliary apparatus for use with meters. Installation methods. Watthour meter test methods. Laboratory and service tests. Demand meters and devices. Index.

Note: A reference manual covering the many phases of electric meter practice as encountered by all electric companies, both large and small, and intended for the use of those responsible for and interested in the purchase, installation, and operation of electric meters. While the code is based upon scientific and technical principles, the commercial side of metering has been emphasized. Definitions of terms, types of watthour meters, manufacturer's information, specifications of design and construction, tests, adjustments, accuracy, and related topics are summarized in concise form.

CANFIELD, DONALD TREAT

The measurement of alternating-current energy. New York: McGraw-Hill Book Company, Inc., 1940. 210 p. illus. 21 cm. \$2.00. 3737

Contents: Early history of the watt-hour meter art. Elemental theory of torque production. Essential elements of the watt-hour meter. Application of the essential elements in modern meters. Watt-hour constants; gear and register ratios. Vector analysis of the induction watt-hour meter. Compensation of errors. Polyphase metering. Analytical checking of metering schemes. Metering special circuits.

Note: Traces the development of electrical energy measurement and describes the working of meters, meter constants, and methods of compensation. Discusses methods for checking and applying proposed metering systems.

HUND, AUGUST

High-frequency measurements. New York: McGraw-Hill Book Company, Inc., 1933. 491 p. illus. 23 cm. (International series in physics) \$5.00. 3738

Contents: Fundamental relations and circuit properties. High-frequency sources and other useful laboratory apparatus. Apparatus and systems for measuring high-frequency minute-tube and ionization currents. Determination of voltage. Determination of frequency. Determination of capacitance. Determination of self-inductance. Determination of mutual inductance and coupling. Determination of effective resistance. Determination of high-frequency power and losses. Determination of logarithmic decrement, power factor, phase difference, and sharpness of resonance. Ferromagnetic measurements. Tube measurements. Modulation measurements. Determinations on aerials and lines. Determinations on wave propagation. Determination on piezoelectric apparatus. Miscellaneous measurements and data. Index.

Note: A reference book for research workers, students, and teachers which discusses high frequency phenomena as applied to measurements. The subject matter is treated critically, presenting up-to-date practice and theory. The applications are presented in a manner elementary enough to meet the needs of any one interested in carrying on high frequency measurements and research work. The book represents a considerable amplification and modernization of the second edition of the author's *Hochfrequenzmesstechnik*, published in Germany in 1928. The author of each article referred to in the footnotes is listed in the index.

KNOWLTON, ARCHER EBEN

Electric power metering; a textbook of practical fundamentals. New York: McGraw-Hill Book Company, Inc., 1934. 340 p. illus. 23 cm. \$4.00. 3739

Contents: Power by indicating instruments. Instrument transformers. Calibration of instrument transformers. Polyphase systems and vector relations. Polyphase power measurement. Evolution of the watthour meter. Direct-current watthour meter. Principle of induction watthour meter. Induction watthour meter performance. Technique of meter testing. The polyphase meter. Verification of polyphase metering connections. Reactive metering. Accuracy of reactive metering. Symmetrical components. Kilovolt-ampere metering. Demand metering. Load totalizing. Telemetering.

Note: A treatment of the basic principles of energy and power metering, coupled with practical methods for kilowatt hour, reactive, demand, telemetering, and totalizing applications. The terminology of the meter engineer is used, and clarifying discussions are given of obscure phenomena in instrument transformers, induction meters, unbalanced systems, incorrect connections, non-concordant demand measurements, polyphase systems, etc.

LAWS, FRANK ARTHUR

Electrical measurements. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 739 p. illus. 23 cm. (Electrical engineering texts) \$6.00. 3739a

Contents: The measurement of current. The ballistic galvanometer. Resistance devices. The measurement of resistance. The measurement of potential difference and electromotive force. The measurement of power. Measurement of inductance and capacitance. Electricity meters. Phase meters, power-factor indicators, synchroscopes, frequency meters, reactive meters, volt-ampere meters, sequence indication. Measurement of sequence components, effects of unbalance. Graphic recording or curve-drawing instruments. Instrument transformers. The calibration of instruments. Determination of wave form. Cable testing. Index.

Note: A text and reference book for student and practicing engineer, intended to give a general treatment of the subject with special emphasis on its relation to the field of electrical engineering and to the problems encountered not only in the college laboratory but also in the practice of the profession. While the text may be considered introductory and general, a working knowledge of physics, electrical theory, and integral calculus is assumed. Numerous bibliographic references are included in each chapter. The second edition has been extensively revised to cover the considerable advances in electrical instrument design and methods of measurement during the period 1917 to 1938.

NATIONAL RESEARCH COUNCIL

Systems of electrical and magnetic units. Papers presented before the American Section, International Union of Pure and Applied Physics, Chicago, June 24, 1933. Washington, D.C.: The National Research Council of the National Academy of Sciences, 1933. 112 p. illus. 24 cm. (Bulletin of the National Research Council. No. 93, December, 1933) Paper, \$0.50. 3740

Contents: Minutes of the meeting of the American Section of the International Union of Pure and Applied Physics. Note on the activities of the Committee for Symbols, Units, and Nomenclature of the International Union of Pure and Applied Physics, by Sir Richard T. Glazebrook. A propos des unités magnétiques, by Henri Abraham. Mathematical considerations underlying the formulation of the electromagnetic equations and the selection of units, by Leigh Page. A definitive system of units, by George A. Campbell. The establishment and maintenance of the electrical units, by Harvey L. Curtis. Possible extensions of the existing international series of electric units (ohm, volt, ampere, coulomb, farad, henry, joule, and watt) into a complete absolute system, by Arthur E. Kennelly.

Note: This group of invited papers presented at the meeting of the American Section of the Union gives an authoritative summary of the status of electrical and magnetic units and is here made available as a basis for future progress. The first paper by Professor Abraham of the Sorbonne is presented in the original French and deals with the theory of dimensions, the units effectively used in magnetism, and the difficulties of defining magnetic quantities.

SMALLEY, MATTHEW F., AND OTHERS

Practical electric metering, by M. F. Smalley, A. N. Prentice, H. E. Buck, W. J. Wright, R. V. Kelch, C. L. Lucal, G. K. Bernhard, all of the Ohio Power Company. New York: John Wiley & Sons, Inc., 1940. 228 p. illus. 23 cm. \$2.75. 3740a

Contents: Preface. The direct-current circuit. Magnets, magnetism, and induction. Braking effect of magnet on meter disk. The direct-current generator and motor. The direct-current kilowatt-hour meter. Inductance and capacitance. Alternating current. Induction watt-hour meter. Single-phase kilowatt-hour meter. Polyphase kilowatt-hour meters. Power and distribution transformers. Instrument transformers. Instrument transformer errors, cause and correction. Reactive kilovolt-ampere-hour metering. Kilovolt-ampere-hour metering. Power-factor meter. Demand meters. Appendix. Index.

Note: This book is based upon lessons given in a school conducted by a large operating utility company. The material which it contains is not expected to serve as a standard practice in making meter installations but rather to be consulted as a text-book by metermen and others interested in meters in order that they may better understand the equipment used in their work. Since the contents are based upon fundamental considerations, the discussions are applicable to meters made by any manufacturer. A feature of the book is its presentation of transformer vector diagrams and meter vector diagrams.

SPENCER, JAMES

Maintenance and servicing of electrical instruments. Edited by Major M. F. Behar. Reprinted from the serial in *Instruments*. Pittsburgh: The Instruments Publishing Company, Inc., 1944. 256 p. illus. 21 cm. \$2.00. 3741

Contents: Tools and equipment. Direct-current instruments. A-C. ammeters. A-C. voltmeters. A-C. wattmeters. Brief summary of A-C. types. Instrument transformers. Frequency meters. Synchroscopes. Power factor meters. Reactive factor meters. Dial marking. Plug-in or detachable instruments. Damping means. Pivots and bearings. Index.

Note: This material deals with the construction, testing, uses, operation, and maintenance of numerous types of electrical instruments. It is intended to assist industrial plants in the maintenance of their own electric instruments, now that the makers, due to pressure of war work, can no longer undertake to service them.

The information, obtained directly from the manufacturers, covers such types as are in common use throughout the industry. A final chapter by the editor of *Instruments* discusses the repair of pivots and bearings.

Currents and Circuits

BERG, ERNST JULIUS

Heaviside's operational calculus as applied to engineering and physics. Second edition. New York: McGraw-Hill Book Company, Inc., 1936. 258 p. illus. 21 cm. (Electrical engineering texts, Harry E. Clifford, chairman and consulting editor) \$3.00. 3742

Contents (abridged): Heaviside's "unit function" and the algebraic nature of his operations. The nature and practical value of the operational solution. The expansion theorem. The expansion theorem applied to some definite problems. Operations on unit functions squared have no physical significance. Additional operators employed when a network is suddenly connected to an alternator, instead of to a battery of constant voltage. Procedure when the expansion theorem cannot be used. Simplification which can be made when the roots are conjugates. Problems involving mutual inductance. Heaviside's "shifting." Duhamel's integral. General equations pertaining to transmission lines. An alternator suddenly connected to an "ideal" cable. Transmission line having all four constants R , L , G , and C . A battery connected at some point of a cable. Disconnecting and discharging a cable. Indefinitely long transmission line or cable. Linear flow of heat. List of operators and formulas. The work of Oliver Heaviside. Appendix. Bibliography. Index.

Note: A summary of Heaviside's operational mathematics insofar as it is applicable to engineering and physics problems, based on a study of his three volumes on electromagnetic theory covering a period from 1891 to 1912. The present text is intended for use in a course for junior, senior, and graduate students of electrical engineering. The appendix contains a reprint of B. A. Behrend's summary of Heaviside's work which originally appeared in the *Electric Journal* for January and February, 1928. The bibliography covers 76 references to world literature.

BEWLEY, LOYAL VIVIAN

Traveling waves on transmission systems. New York: John Wiley & Sons, Inc., 1933. 334 p. illus. 23 cm. \$4.50. 3743

Contents: Part I, Origin, characteristics, and behavior of traveling waves. Introduction; classification of lightning research. Single circuit theory of traveling waves. Calculation of typical transition points. Attenuation and distortion. Successive reflections. Protecting schemes. Traveling waves on multi-conductor systems. Transition points of the multi-conductor circuit. Resolution of waves into component kinds. Traveling waves due to lightning. Ground wires. Arcing grounds. Bibliography. Part II, High-frequency oscillations and terminal transients of transformers: Introduction; classification of transformer transients. Ideal two-winding transformer. Transient oscillations in the primary windings. Waves of arbitrary shape. Terminal transients. Suppression of internal oscillations. Bibliography. Appendix: Table of operational formulas. Index.

Note: An advanced book giving a fundamental and generalized mathematical analysis of traveling waves on transmission lines and in transformer windings. The general origin, characteristics, and behavior of traveling waves, whether from lightning or high-frequency oscillations or terminal transients, are discussed. Reflections, attenuations and distortions, transition points, and actions on single- and multiple-conductor circuits are treated thoroughly. The table of operational formulas in the appendix is presented as an aid in calculation work.

BISHOP, CALVIN COLLIER

Alternating currents for technical students. Second edition. New York: D. Van Nostrand Company, Inc., 1943. 424 p. illus. 20 cm. \$2.50. 3743a

Contents: Alternating currents. Alternators. Inductance. Capacity. Series circuits. Parallel circuits. Series parallel circuits. Graphical analysis of circuits by rectangular vectors. Complex

quantities and polar vectors. Measurement of power. Transformers. Asynchronous motors. Synchronous motors and rotary converters. Electron tubes and their circuits. Other alternating-current apparatus. Practical tests and their measurements. Trigonometry useful in solving vector problems. Problems and answers. Index.

Note: An elementary textbook for students of electricity. The second edition has been rearranged and expanded to include a chapter on complex quantities and their application to circuit problems, further problems, and material describing apparatus not known or in the experimental stage when the book was first written.

BLALOCK, GROVER CLEVELAND

Elements of electrical circuits and machinery, with industrial applications. New York: McGraw-Hill Book Company, Inc., 1943. 347 p. illus. 20 cm. \$3.00. 3744

Contents: Electricity. Electricity and magnetism. The direct-current electric circuit. Voltage generation. Direct-current motors. Efficiencies, ratings and miscellaneous applications. Batteries. Alternating voltage and currents. Alternating-current circuits. The transformer. Polyphase induction motors. Single-phase motors. Synchronous machines. Application, installation and operation of electrical equipment. Laboratory experiments. Index.

Note: Intended for short courses in electrical circuit theory and the practical application of electrical equipment. The book covers the essential practices without going into too much detail, and presents this basic material with the necessary continuity to insure a fairly comprehensive picture of the industrial electrical field.

BRYANT, JOHN MYRON, AND OTHERS

Alternating-current circuits by John Myron Bryant, James A. Correll and E. W. Johnson. Third edition. New York: McGraw-Hill Book Company, Inc., 1939. 522 p. illus. 23 cm. \$4.50. 3745

Contents: Faraday's law and the general relations of electromotive force, current, and flux in alternating-current circuits. Series circuits, sine wave of current and electromotive force. Vector representation of waves and equations. Parallel circuits. Active power, reactive power, vector power, apparent power and power diagrams. Complex alternating-current circuits. Three-wire alternating-current circuits. Polyphase circuits. Power measurements in polyphase circuits. Consideration of unbalanced polyphase circuits by means of symmetrical phase components. Comparison of the amount of conductor material required for different systems of transmission and distribution. Constants of transmission lines. Calculation of short transmission lines and distribution circuits. Medium-length transmission lines. Long transmission lines. Nonsinusoidal wave forms. Index.

Note: Intended as an introduction to the study of alternating-current circuits and transmission lines. The theory of alternating-current circuits is discussed and the equations applying to the various types of circuits are developed from fundamental physical and mathematical principles. These principles are then applied to polyphase circuits and transmission lines. In this third edition new material has been added concerning mutual inductance and mesh circuits, and other changes have been made, including revision of definitions.

CLARKE, EDITH

Circuit analysis of A-C power systems. Volume I. New York: John Wiley & Sons, Inc., 1943. 540 p. illus. 22 cm. (General Electric series) \$6.00. 3746

Contents: Introduction. Definitions and fundamental concepts. Symmetrical components; basic equations for three-phase systems. Short circuits on systems with one power source. Unsymmetrical faults on normally balanced three-phase systems. Two component networks for three-phase systems. Transmission circuits with distributed constants. Simultaneous faults on symmetrical three-phase systems; analysis by the method of symmetrical components. Unsymmetrical three-phase circuits; analysis by the method of symmetrical components. Polyphase systems of more than three phases, single-phase and two-phase systems. Alpha, beta, and zero components of three-phase systems. Impedances of overhead transmission lines. Capacitance of overhead transmission lines. Appendixes: Determinants. Tables and charts for overhead transmission circuits. Index.

Note: A reference and source book on power system performance,

for electrical and consulting engineers. It offers detailed guidance in the use of methods of symmetrical and related components when solving practical power problems. Instructions are included for the construction and use of equivalent circuits, with numerous examples for use in analytic calculations and with A-C or D-C calculating tables. Alpha, beta, and zero components are fully described. Many important charts and tables are given. All equations are completely derived. The second volume is not yet available.

GARDNER, MURRAY FRANK, AND JOHN L. BARNES

Transients in linear systems studied by the Laplace transformation. Volume I. New York: John Wiley & Sons, Inc., 1942. 389 p. illus. 23 cm. \$5.00. 3747

Contents: Introduction. The mathematical expression of one-dimensional problems concerning electrical and mechanical systems. An introduction to the Laplace transformation and its inverse. The Laplace transformation and its application to simple functions. The Laplace transformation of integro-differential equations in one independent variable. The Laplace transformation of algebraic rational fractions. The complete solution of one-dimensional problems concerning electrical and mechanical systems. Certain properties of the Laplace transformation. The solution of linear difference equations with constant coefficients. Appendixes. Bibliography. Index.

Note: Invariant systems having lumped parameters, leading to ordinary integro-differential equations and difference equations are treated in this volume. The discussion progresses by easy stages. Emphasis is placed upon a systematic presentation of the method of setting up physical problems in mathematical form. The mathematical procedure for solving problems is based on an extensive table of operation- and function-transform pairs which is derived and used in much the same way as an ordinary table of integrals. A comparison is given of the Fourier- and the Laplace-transformation methods. Ample references to the literature are provided for those who wish to go beyond the scope of this volume. The bibliography stresses the historical evolution of the mathematical techniques used. Many of the illustrative examples and the practice problems have a definite engineering background and have been selected from a wide variety of topics ranging from surge generator transients to television synchronizing pulses, and to the behavior of a rotary stabilizer in a motion picture film head. The second volume is not yet available.

GUILLEMIN, ERNST ADOLPH

Communication networks. New York: John Wiley & Sons, Inc., 1931-35. 2 v. illus. 23 cm. Vol. I, \$5.00; Vol. II, \$7.50. 3748

Contents: Volume I, The classical theory of lumped constant networks: The philosophy of linear electrical networks. The single mesh network with constant excitation. The single mesh circuit with harmonic excitation. The steady-state solution for the general network. The transient solution for the general network. The evaluation of integration constants. The vector interpretation of the transient solution. Applications. Some important network formulae. The treatment of periodic force functions. Index. Volume II, The classical theory of lines, cables and filters: The engineering formulation of the long-line problem. The steady-state solution to the long-line equations. Propagation and characteristic impedance functions of the long line. Characteristics of four-terminal networks. Theorems regarding driving-point impedances and an extension to two-terminal pairs in the reactive case. Energy functions and linear network transformations. Artificial and lump-loaded lines. The non-dissipative uniform ladder structure. Conventional filter theory. Filter design methods based upon the lattice structure. The transient behavior of filters. Simulative and corrective networks. The transient behavior of long lines. Appendix: List of symbols. Index.

Note: An analytical treatment of network theory. It uses the more advanced methods of analysis to a considerable extent. In Volume I the mathematical artifices of determinants, particular integrals, and determination of constants of integration are developed for their contribution to the solution. The treatment is mathematically interpretive of such practical aspects as transformer circuits and coupled circuits. The Heaviside expansion formula is introduced, along with the Fourier and other periodic functions. The second volume is not restricted to the determination of analytic solutions to the various problems arising in connection with the behavior and design of transmission networks, but places primary emphasis upon detailed discussions of the results of such analysis in the light of practical requirements in the communications field.

HUND, AUGUST

Phenomena in high-frequency systems. New York: McGraw-Hill Book Company, Inc., 1936. 642 p. illus. (International series in physics, F. K. Richtmyer, consulting editor) \$6.00. 3749

Contents: Actions and effects in space-discharge devices. High-frequency generators. Voltage and current changers. Phase changers. Frequency changers. Rectification and inversion of currents. Voltage, current, and power amplifiers. Theory of electrostriction with special reference to piezo electricity in quartz. Electromagnetic theory. Theory of the ionized layer (Heaviside-Kennelly layer). Lines of long and short electrical length with special reference to antenna problems. Directive systems. Theory of recurrent networks. Appendix. Index.

Note: A critical survey of phenomena occurring in high-frequency systems for advanced students of electrical engineering and for practicing engineers. The principles and fundamental laws applying to high-frequency apparatus and systems are brought out together with a thorough discussion based on experimental evidence and theoretical significance. Phenomena and actions in vacuum tubes are also discussed, together with the application of problems arising in communication engineering.

KERCHNER, RUSSELL MARION, AND GEORGE F. CORCORAN

Alternating-current circuits. Second edition. New York: John Wiley & Sons, Inc., 1943. 553 p. illus. 23 cm. \$4.75. 3750

Contents: General concepts and definitions. Instantaneous current and power (sinusoidal voltage applied). Effective current and voltage—average power. Vector algebra (as applied to A-C circuit analysis). Sinusoidal single-phase circuit analysis. Non-sinusoidal waves. Coupled circuits. Balanced polyphase circuits. Unbalanced polyphase circuits. Alternating-current measurements. Determination of circuit parameters. Transmission line calculations. Electric wave filters. Symmetrical components. Power system short-circuit calculations. Transient conditions. Index.

Note: In addition to a study of the fundamentals of alternating-current circuits, this book discusses such specialized topics as energy measurements in polyphase circuits, electric filter theory, symmetrical components. This second edition features the addition of discussion of network theorems—reciprocity, Thévenin's, superposition. The approach to unbalanced polyphase circuits has been simplified, and there is new material on the subject of multiple peaks at resonance in coupled circuits.

KNIGHT, ABNER RICHARD, AND GILBERT H. FETT

Introduction to circuit analysis. New York: Harper & Brothers, 1943. 447 p. illus. 24 cm. \$4.00. 3751

Contents: Electrical quantities and units. Magnetostatics. Electricity and magnetism. Magnetic circuits. Electrostatic circuits. Step-by-step solution of circuits. Analytic solution of electric circuits. Algebra of complex quantities. Complex number solution of series parallel circuits. Solution of networks by Kirchhoff's laws. Polyphase circuits. Power and reactive components in polyphase circuits. Coupled circuits. Irregular periodic waves. Index.

Note: An introductory survey in the field of circuit theory, designed for students of electrical engineering. To provide a background for beginning students in this field, the early chapters restate the essentials of physics in engineering terms, and relate the material to the engineering problems to be solved. The balance of the book presents treatment of electric and magnetic units and circuits, graphical and mathematical treatments of periodic current circuits, special problems in alternating current networks, electrostatic circuits, and wave analysis. About 15 problems are provided for each chapter.

KRON, GABRIEL

Tensor analysis of networks. New York: John Wiley & Sons, Inc., 1939. 635 p. illus. 23 cm. (General Electric series) \$7.50. 3752

Contents: The algebra of N -way matrices. The first generalization postulate. The second generalization postulate. The transformation tensor. Singular transformations. Examples of in-

variant transformations. Covariant and contravariant indices. Geometrical interpretations. Compound tensors. Reduction formulas. The theory of "groups." Reactance calculation of windings. Spinor transformations. Junction networks. Multielectrode-tube circuits. Orthogonal networks. Interlinked electric and magnetic networks. The metric tensor. Compound networks. Symmetrical components. Multiple tensors. The analysis of networks. The synthesis of networks. Bibliography. Index.

Note: This book applies tensor analysis from the point of view of the man who is not a professional mathematician or a theoretical physicist, but an engineer or an applied physicist. The subject matter presents a method of approach to the analysis and synthesis of networks that is most frequently encountered by an electrical engineer in his daily work. The method is so formulated that it may serve as a first step to the systematic analysis and synthesis of rotating electrical machinery on the one hand and of transmission networks on the other. The latter in turn will serve as a second step in the study of radiation and of electronic phenomena from the point of view of the electrical engineer. These features should be noted: the method of dealing systematically with a large number of variables; the method of treating a wide variety of analogous problems on a mass-production basis; the organization of electrical networks according to their basic properties and expected functions.

KURTZ, EDWIN BERNARD, AND GEORGE F. CORCORAN

Introduction to electric transients. New York: John Wiley & Sons, Inc., 1935. 335 p. illus. 23 cm. \$4.50. 3753

Contents: Direct-current transients: Elementary circuit concepts. Transients in series circuits with constant voltage applied. Particular boundary conditions. Series-parallel circuits. Inductively coupled circuits. Alternating-current transients: Alternating voltage applied to ideal circuits. Transients in series circuits with sinusoidal impressed voltage. Particular boundary conditions. A-C transients in divided circuits. Variable circuit parameters. Appendix: The differential equations of elementary circuit theory. Heaviside's operational calculus. The Graeffe method of solving algebraic equations. Exponential and hyperbolic functions. Index.

Note: Although the subject of this book does not readily lend itself to simple treatment, this is an excellent study of the basic principles involved. The presentation is logical and systematic, each type of transient being considered in turn under the headings: physical considerations; mathematical analysis; oscillographic verification. Under physical considerations, the reader is encouraged to analyze the physical aspects of circuit conditions in terms of the principles and laws with which he is already familiar. Under mathematical analysis, given the fundamental equilibrium equations, the results are derived in accordance with the laws of conventional mathematics, usually involving the use and solution of some form of differential equation. In addition to the conventional solution there is also given a solution in terms of Heaviside's operational calculus.

LAWRENCE, RALPH RESTIEUX

Principles of alternating currents. Second edition. New York: McGraw-Hill Book Company, Inc., 1935. 475 p. illus. 21 cm. (Electrical engineering texts) \$4.00. 3754

Contents: Algebra of vectors and of complex quantities used in electrical engineering. Alternating currents. Power when current and voltage are sinusoidal. Non-sinusoidal waves. Circuits containing resistance. Inductance and capacitance. Mutual induction, coupled circuits and air-core transformer. Kirchhoff's laws, impedances in series and parallel, effective resistance and reactance. Electric filters. Polyphase voltages and currents. Kirchhoff's laws applied to polyphase circuits and equivalent Y- and Δ -connected circuits. Harmonics in polyphase circuits. Power and power factor in polyphase circuits, relative amounts of copper required for polyphase circuits, power measurements in polyphase circuits. Symmetrical phase components applied to unbalanced three-phase circuits. Reactance of a transmission line. Capacitance of a transmission line. Series-parallel circuits containing uniformly distributed resistance, reactance, conductance and susceptance.

Note: The second edition of this widely used textbook has been thoroughly revised. Some of the features are: (1) a discussion of the uses and limitations of the different types of vector notation commonly employed by engineers in dealing with alternating currents; (2) a more complete treatment of reactive power and its measurements; (3) a discussion of even harmonics; and (4) a new chapter on electric-wave filters.

LOEW, EDGAR ALLAN

Direct and alternating currents, theory and machinery. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 730 p. illus. 23 cm. \$4.50. 3755

Contents: Part I, Direct currents: Current electromotive force and resistance. Resistance and conductance. The electric circuit. Electromagnetism. Generated and induced voltages. The magnetic circuit. Direct current ammeters and voltmeters. The dielectric field. Capacitance. The dynamo-electric machine. Armature reaction and commutation. Operating characteristics of generators. Motors and their characteristics. Losses, efficiencies and ratings. Electrolytic conduction and batteries. Direct-current distribution. Part II, Alternating currents: Alternating electromotive forces and currents. Vector representation. Series circuits. Parallel circuits. Alternating-current meters. Power in single-phase circuits. Power in polyphase circuits. Polyphase induction motors. Alternators. Synchronous motors and parallel operation of generators. Synchronous converters. Single-phase motors. Alternating-current transmission and distribution. Electron tubes and rectifiers. Index.

Note: Stressing fundamental principles rather than mere factual information, this book emphasizes the theory of the electric circuit, and the laws and principles necessary to an understanding of the performance of electric machines. Alternating circuit theory is discussed largely in terms of vectors. Throughout, mathematical expressions have been reduced to simple, easily understood forms.

LORENZEN, ROBERT

A-C calculation charts. New York: J. F. Rider Publisher, Inc., 1942. 148 p. illus. 32 cm. \$7.50. 3756

Contents: Arrangement of charts. History of the charts. Theory underlying the charts. Bibliography. Inductive reactance. Inductive susceptance. Capacitive reactance. Capacitive susceptance. Series resonance. Parallel resonance and antiresonance. Series circuits. Parallel circuits. Series-parallel circuits. Mesh circuits. Miscellaneous applications. Charts. Index charts.

Note: The series of 144 7" x 7" charts contained in this book and the supplementary scales accompanying them were designed with the object of reducing the time consumed in making alternating-current circuit calculations to a minimum. The charts are based upon a combination of the standard reactance-frequency chart and the slide rule. The first 72 charts are employed to compute reactance or impedance, while the remaining 72 are used for calculating susceptance or admittance. In order to facilitate location of points the charts are printed in two colors, red and green, one for each coordinate system. The scales printed below each chart are similar to those found on slide rules and serve the same purpose for evaluating squares, square roots, and reciprocals.

LYON, WALDO VINTON

Applications of the method of symmetrical components. New York: McGraw-Hill Book Company, Inc., 1937. 579 p. illus. 23 cm. (Electrical engineering texts) \$6.00. 3757

Contents: Introduction. Historical outline. General principles. Resolution of n-phase quantities. Three-phase static circuits. Four-phase static circuits. Transmission lines. Transformers. Induction machines. Terminal characteristics. Induction machines. Internal reactions. Induction machines. Unsymmetrical stator and rotor windings. Capacitor motor. Synchronous machines. Power networks.

Note: This book offers a thorough discussion of problems arising when polyphase circuits are unsymmetrical and shows how these problems can be solved by means of the method of symmetrical components. About 45 numerical illustrations are given to indicate how the method may be applied in typical concrete cases.

McILWAIN, KNOX, AND J. G. BRAINERD

High-frequency alternating currents. Second edition. New York: John Wiley & Sons, Inc., 1939. 530 p. illus. 23 cm. \$6.00. 3758

Contents: High-frequency alternating currents. Resonance phenomena. Coupled circuits. Thermionic vacuum tubes. Amplification. Modulation. Detection. Production of high-frequency cur-

rents. Electric wave filters. Transmission lines. Electromagnetic waves. Reflection and refraction. Electromechanical systems. Appendixes: Analysis of tetrode and triode, allowing for grid currents and variation of amplification factors. Oscillations in two coupled circuits. Derivation of Child's law. Non-linear theory of oscillations. Index.

Note: Presupposing a knowledge of calculus and differential equations, this book gives a thorough and detailed mathematical analysis of the fundamental principles of electric communication underlying telephony, sound reproduction, radio, facsimile, and television. The component circuits such as amplifiers, modulators, oscillators, wave filters, transmission elements, antennas, and electromechanical systems are analyzed in some detail. Among the chief revisions and additions in this edition are discussions of the application of the theory to class A, B and C amplifiers, to high-level modulators, etc. The vacuum-tube notation has been brought in close accord with the standard notation proposed by the Institute of Radio Engineers. Lagrange's equation is developed and used in the discussion of electromechanical systems. Illustrative graphs aid in securing clarity and completeness. Numerous problems are given throughout the text.

MAGNUSSON, CARL EDWARD

Alternating currents. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1939. 721 p. illus. 23 cm. \$5.00. 3759

Contents: The electric field. Generating of electromotive force. Systems of units. Symbols. Instruments. Forms of representation. Series circuits. Parallel circuits. Solution of circuits. Electric power. Power factor. Electric energy. Voltage and current in single and polyphase systems. Power in two-phase and three-phase circuits. Magnetic hysteresis. Eddy currents. Mutual induction. Transformers. Induction motors. Generators. Synchronous motors and synchronous condensers. Synchronous converters. Commutator motors. Induction generator. General transformer. Rectifiers. Oscillators and inverters. Amplifiers. Insulation—the dielectric circuit. Corona. Spark-over. Short transmission lines. Phase control or regulating by power factor. Commercial wave forms. Harmonics. Protective appliances. Polyphase systems. Certain forms of notation. Long transmission lines. Index.

Note: A textbook for undergraduate students based on lectures and classroom discussion given by the author at the University of Washington. The subject matter is limited to a study of fundamental principles and their application to industrial problems. Graphic diagrams are used to show the relations between the physical concepts and algebraic equations. The incorporation of new developments accounts for approximately 30 additional pages in this edition. Problems are included.

MASON, WARREN PERRY

Electromechanical transducers and wave filters. New York: D. Van Nostrand Company, Inc., 1942. 333 p. illus. 23 cm. \$5.00. 3760

Contents: Introduction. Electric network theory. Application of network theory of lumped mechanical systems. Acoustic equations and networks. Vibration of membranes and plates. Electromechanical converting systems. Designs of electromechanical systems. Application of electromechanical impedance elements in electrical wave filters. Appendices. Index.

Note: This presentation reviews systematically the application of mechanical theory to electrical problems, and the more recent uses of electrical network theory in attacking fundamental questions regarding mechanical systems. The separate results on electrical, mechanical, and electromechanical systems are combined in the design of composite electromechanical transducers. This book summarizes the more recent developments which have been worked out at the Bell Telephone Laboratories.

**MASSACHUSETTS INSTITUTE OF TECHNOLOGY.
DEPARTMENT OF ELECTRICAL ENGINEERING**

Electric circuits; a first course in circuit analysis for electrical engineers, by members of the staff of the Department of Electrical Engineering, Massachusetts Institute of Technology. New York: John Wiley & Sons, Inc., 1940. 782 p. illus. 23 cm. (Its Principles of electrical engineering series) \$7.50. 3761

Contents: Introduction. Table of symbols. Derivation and evaluation of circuit parameters. Elementary network theory. Transient response of simple circuits. Elementary alternating-current theory: steady state. Transient analysis of simple alternating-current circuits. Steady-state analysis of alternating-current circuits involving two unknowns. Transient analysis of alternating-current circuits involving two unknowns. Multi-branch alternating-current networks. Loci of complex functions. Polyphase systems. Elementary theory of symmetrical components. Electromechanically coupled systems. Transients in nonlinear circuits. Appendixes: Tables: copper and aluminum conductors; resistivities of metals and alloys; relative permittivities. The solution of linear algebraic equations by means of determinants. Units, dimensions, standards. Bibliography. Index.

Note: This volume is principally devoted to a thorough treatment of linear circuits. It is illustrated by numerous photographs, diagrams, and numerical examples. Problems to be solved are inserted at the close of each chapter. The system of symbols developed for the book is intended to distinguish carefully among vector, scalar, complex, transient, and constant quantities. In general, the mks unrationalized system of units is used. Tables of physical constants, a brief treatment of determinants, and a short discussion of units, dimensions, and standards, including a table of conversion factors and dimensions, are added as appendixes. An extensive bibliography concludes the book.

MORECOCK, EARLE MONROE

Alternating-current circuits. New York: Harper & Brothers, 1942. 175 p. 24 cm. (Rochester technical series) \$2.75. 3762

Contents: Alternating-current waves and quantities. Vectors and complex quantities. Single-phase systems. Polyphase systems. Appendixes: Laboratory report writing. Instructions for plotting graphs. Table of natural trigonometric functions. Table of squares. Answers to problems. Index.

Note: A brief but thorough text for elementary courses, which assumes only the usual foundation in high school algebra and trigonometry, together with an understanding of direct-current and magnetic-circuit principles. Concepts usually explained with the aid of calculus are here presented graphically. Problems are presented for each major topic discussed, and laboratory instruction sheets are provided for each chapter.

MORECOCK, EARLE MONROE

Direct-current circuits. New York: Harper & Brothers, 1944. 387 p. illus. 24 cm. (Rochester technical series) \$3.25. 3763

Contents: Elementary electric circuits. Magnetism and electromagnetism. Instruments and methods for measuring voltage, current and resistance. Power and energy. Conductors and insulation. Batteries. Other electric circuits. The magnetic circuit. Electromagnetic induction. Capacitance—electrostatics. Appendixes: Laboratory report writing. Instructions for plotting graphs. Resistivity and temperature coefficients of metals and alloys. Wire tables for copper conductors. Conductor insulations and allowable current-carrying capacities. Relations of units. Electrical symbols. Relation among electrical units. Answers to problems. Index.

Note: A concise and simple text for the first course in electric circuits for junior colleges and technical institutes, requiring a working knowledge of algebra and logarithms but no calculus. Problems are provided for each unit presented—some 300 in all, and answers are furnished. Questions and laboratory experiments are furnished for each chapter. This book is a companion volume to the author's *Alternating current circuits* (see above). Together these books provide the basis for a complete introductory course in electricity. They are part of a series prepared by the faculty of the Rochester Athenaeum Mechanics Institute, Rochester, New York, as part of its program to develop teaching materials related to the requirements of industry.

PENDER, HAROLD, AND S. REID WARREN, JR.

Electric circuits and fields. New York: McGraw-Hill Book Company, 1943. 534 p. illus. 21 cm. \$4.00. 3764

Contents: Part 1. Electric-circuit theory: Fundamental concepts of electric-circuit theory. Direct-current calculations. Sources of electromotive force; resistance of conductors. Introduction to transient phenomena in electric circuits. Sinusoidal alternating currents. The use of complex numbers in solving alternating-current networks. Polyphase circuits and symmetrical components. Filters and transmission lines. Non-linear circuits.

Part 2. Electrostatic and electromagnetic fields: The electrostatic field. Electrostatic capacitance. Electromagnetic flux and induced electromotive forces. The calculation of magnetic-flux density; inductance. Ferromagnetism; potential energy and forces associated with the magnetic field. The thermionic effect and electron ballistics. Maxwell's equations and electromagnetic radiation. Appendixes: The solutions of linear differential equations with constant coefficients. Introductory notes of vector analysis. Vector forms in orthogonal curvilinear coordinates. Electrostatic potential in the neighborhood of very long electrically charged cylinders. The vector potential as the basic quantity for the correlation of magnetic phenomena.

Note: Written from an engineering point of view, this text presents a general qualitative theory correlating the fundamental phenomena encountered in the practice of electrical engineering; the basic principles stated in mathematical form, by which the student can calculate quantitatively the effects produced by the connection and use of simple electrical devices; and a brief introductory picture of each of the several fields of electrical engineering that the student will study in subsequent courses.

SKILLING, HUGH HILDRETH

Transient electric currents. New York: McGraw-Hill Book Company, Inc., 1937. 349 p. illus. 23 cm. (Electrical engineering texts) \$4.50. 3765

Contents: The transient state. Behavior of inductance. Behavior of condensers. Circuit equations. Complete single circuit. Networks. Response to alternating voltage. Coupled resonant circuits. Circuits with variable parameters. Traveling waves. Operational methods of analysis. Oscillographs. Index.

Note: This text for students and practicing engineers is intended to assist them to judge the nature and importance of transient currents and voltages. The author has so presented the material that it is suitable when used either in conjunction with laboratory work or without. Problems and brief lists of references are given at the end of most chapters.

TANG, KWAN YAU

Alternating-current circuits. Scranton, Pa.: The International Textbook Company, 1940. 438 p. illus. 23 cm. (International texts in electrical engineering, E. E. Dreese, consulting editor) \$4.00. 3766

Contents: Alternating current and voltage. Vector representation of sine waves. Elementary circuit concepts. Hypothetical circuit sinusoidal current. Series circuits. Complex quantities. Parallel circuits. Combination of series parallel circuits. Real and apparent power. Voltage and current loci. Network theorems. Mutual induction and coupled circuits. Polyphase circuits. Power in three-phase circuits. Symmetrical components. Non-sinusoidal waves. Non-sinusoidal voltages and currents. Differential equations. Direct-current transients. Alternating-current transients. Transmission line calculations. Appendix. Index.

Note: Intended for an introductory course in circuit analysis study. This book presents a coverage of the physical nature of circuit elements and of the principles and laws of electric currents as a basis for further work in the fields of alternating-current machinery, power, and communication networks.

TIMBIE, WILLIAM HENRY, AND HENRY H. HIGBIE

Essentials of alternating currents. Second edition, completely rewritten. New York: John Wiley and Sons, Inc., 1939. 377 p. illus. 18 cm. \$2.25. 3767

Contents: Modern systems of power transmission. Transformers: fundamental ideas. Impedance. Power and power factor. Current and voltage relations in series and parallel circuits. Relation between impedance, resistance and reactance. Polyphase circuits. Calculation of wire sizes for various distributing systems. Motors, starters and controllers. Converters and rectifiers. Appendix. Index.

Note: Covers the essential electrical theory which the worker on alternating-current appliances should know. The aim has been to present the subject matter in as brief and simple a form as possible, avoiding algebra and trigonometry, but with enough detail to establish a foundation for more advanced work. New devices and methods of using them have been introduced in this

edition, especially in the chapter on converters and rectifiers, where much of the material concerns recent developments for both power and communications. Additional applications of devices already known have been included, as in the use of static condensers for power-factor correction.

WAGNER, CHARLES FREDERICK, AND R. D. EVANS

Symmetrical components as applied to the analysis of unbalanced electrical circuits. With an introduction by C. L. Fortescue. Used as a text in the design course of the Westinghouse Graduate School. New York: McGraw-Hill Book Company, Inc., 1933. 437 p. illus. 23 cm. \$5.00. 3768

Contents: Introduction and historical development. Fundamental principles. Calculation of unbalanced faults. Illustration of unbalanced fault calculations. Constants of synchronous machines. Constants of transformers. Constants of short transmission lines with and without ground wires. Constants of long transmission lines and of cables. Power system voltages and currents under fault conditions. Simultaneous faults. Determination of sequence quantities from phase quantities. Measurement of power quantities on polyphase circuits. Multi-phase systems. Induction motors. Unsymmetrical systems and phase-balancers.

Note: This text, for practicing engineers and senior or graduate students of electrical engineering, presents the fundamental theory of symmetrical components as used in the solution of unbalanced electrical circuits. It presupposes a knowledge of single-phase and polyphase circuits, and provides numerous problems which are encountered by the practical engineer. The appendix includes such reference material as apparatus, transmission line and cable constants, equivalent networks, and exponential functions. There is an extensive bibliography and an index.

Power Systems

BARROWS, HAROLD KILBRITH

Water power engineering. Third edition. New York: McGraw-Hill Book Company, Inc., 1943. 791 p. illus. 23 cm. \$6.00. 3769

Contents: Water power development—its distribution and use. Hydrology. The study of stream-flow data and water power estimates. Hydraulic turbines and general arrangement of plant. The dam. The waterway—canals and penstocks. Powerhouse and equipment—hydraulic and structural. Powerhouse—electrical. Plant accessories. Speed and pressure regulation. Transmission lines. Cost and value of water power. Reports and plant descriptions.

Note: A discussion of principles and practice underlying the design of hydroelectric power developments. It is designed as a textbook for advanced and graduate students. There has been little revision in this third edition, the chief changes from the point of view of the book's value as a reference tool being in the first chapter: Water power development—its distribution and use.

CROFT, TERRELL WILLIAMS

Central stations. Revised by George H. Hall. Third edition. New York: McGraw-Hill Book Company, Inc., 1937. 360 p. illus. 20 cm. \$3.00. 3770

Contents: Distribution-system nomenclature. Distribution loss and distribution-loss factors. Maximum demand and demand factors. Diversity and diversity factors. Load factor, plant factor and connected-load factor. Load graphs and their significance. General principles of circuit design. Calculation and design of direct-current circuits. Calculation and design of alternating-current circuits. Transmission and distribution of electrical energy. Lightning protection apparatus. Automatic voltage regulators. Switchboards and switchgear. Characteristics of electric generating stations. Adaptability of steam, internal-combustion-engine, and hydraulic prime movers. Steam-electric generating stations. Internal-combustion-engine stations. Hydroelectric stations.

Note: A practical manual to give the electric man the self-study material needed to advance himself in central station work. Covers the generation, transmission, and distribution of electrical energy. Gives scientific fundamentals and every-day practice. New material in this revised edition includes that on turbines, network system, lightning protective apparatus, voltage regulators, and many other subjects.

KATES, EDGAR JESSE

Diesel electric plants. A practical text on characteristics of Diesel engines, principles of Diesel-driven generators, governors, voltage regulators, parallel operation of generators, installation and maintenance of electric equipment, automatic controls, alarm signals and Diesel trains. Chicago, Ill.: American Technical Society, 1937. 181 p. illus. 21 cm. \$2.00. 3770a

Contents: Characteristics of Diesel engines. Applications of Diesel electric equipment. Cost of Diesel electric power. Diesel units in electric central stations. Stand-by power for hydro-electric systems. Private electric power plants for factories, mines, and large city buildings. Diesel electric propulsion for boats, locomotives and rail cars. Alternating and direct-current generators for Diesel drive. Voltage regulation of direct-current generators. Voltage regulation of alternating-current generators. Parallel operation. Engine governors—frequency and load control. Automatic Diesel electric plants. Electric starting of Diesel engines. Starting and stopping generators and voltage regulators. Electrical controls and alarms for the Diesel engine. Diesel locomotives and trains. Installation and maintenance of generators and voltage regulators. Index.

Note: This book on Diesel electric plants is intended for the following groups: students of electricity, power plant design, and operation and maintenance; operators and maintenance men of Diesel power plants and Diesel railway equipment; owners and superintendents of Diesel power plants; salesmen; and erectors.

KURTZ, EDWIN BERNARD

The lineman's handbook. Second edition. New York: McGraw-Hill Book Company, Inc., 1942. 650 p. illus. 19 cm. \$4.00. 3771

Contents: Elementary electrical principles. The electric system. Distribution circuits. Line materials. Line equipments. Line protective equipment. Line-control equipment. Fundamentals of line design. Pole-line erection. Tower-line erection. Inspection. Testing, and maintenance. Rural lines. REA manual of operation and maintenance. Safety methods in construction of overhead lines. Pole-top resuscitation. First aid talks. Accident prevention course for linemen.

Note: This manual of principles, data, and practical methods for linemen, foremen, and other line department employees gives an understandable introduction to the elements of electricity and circuits, describes transmission apparatus and the tools and materials of line erection, and shows step-by-step how to erect, inspect, and maintain transmission lines. Among many changes and additions bringing this edition abreast of modern practice are new chapters covering the special factors of rural line work and more safety material, including description of the pole-top method of resuscitation. The treatment is clear, simple, and backed up with many illustrations, diagrams, charts, tables, and other explanatory and reference aids.

MORSE, FREDERICK TRACY

Power plant engineering and design; a text for engineers and students of engineering, covering the theory and practice of stationary electric generating plants. Second edition. New York: D. Van Nostrand Company, Inc., 1942. 703 p. illus. 23 cm. \$6.50. 3772

Contents: General introduction. The variable load problem. Power plant economics. The power plant building. Diesel engine power. The hydro-electric plant. Vapor cycles and their heat balances. Steam boilers, prime movers and condensers. The gas loop. The feed water loop. The piping system. Electric system equipment. Electric system layout. Conclusion. Index.

Note: This textbook for engineering school courses explains the principles governing the layout of power plants and the design

of their equipment. It emphasizes the proper methods of analysis of the conditions of service which determine the salient characteristics of the various major units of equipment. The methods of calculating sizes, capacities and other variable factors are described and are applied to many illustrative problems. Many other problems for solution by the student are given.

ROGERS, PRICE L.

Power-factor economics. New York: John Wiley & Sons, Inc., 1939. 143 p. illus. 23 cm. \$2.50. 3773

Contents: Power factor. Motors. Transformers. Capacitors. Problems and their solution. Industrial power-factor studies. Conductor losses. Utilities' distribution systems. Index.

Note: Power factor is dealt with as it applies to industrial plants and the distribution systems of public utilities. Its purpose is to answer the questions which arise when power factor is considered, and to provide simple, accurate means of solving power-factor problems. No attempt is made to cover the generating stations and their interconnections, since that phase of the consideration of power factor is on a somewhat different plane. The effects of power factor on utility distribution systems and in the industrial field have been receiving an ever-increasing amount of attention, and it is here that the need for accurate information exists. The technical education of the interested individuals varies from none to that attested by university degrees. The author's aim in this book, therefore, has been to supply the information in a form simple enough to appeal to the first group and yet not too elementary for the second.

SANDERSON, CLARENCE HERBERT, EDITOR

Electric system handbook. New York: McGraw-Hill Book Company, 1930. 1167 p. illus. 18 cm. \$5.00. 3774

Contents: Electrical energy and its transmission. Auxiliary electrical equipment. Switchboards. Motors. Generating stations. The transmission system. Alternating current substations. Railway substations. Direct current substations for light and power. Distribution. Protection of electrical apparatus, circuits and systems. Inspection and maintenance. Electrical engineering tables. Standard definitions of electrical words and terms.

Note: This book describes the electric system as a whole, in a simple, practical manner. It gives authoritative information on every phase of the work—the fundamentals of electricity; generating, transforming and auxiliary equipment; central and substations; power lines; design, construction, operation, repair, inspection.

SANFORD, FRANK

Electric distribution fundamentals. New York: McGraw-Hill Book Company, Inc., 1940. 242 p. illus. 23 cm. \$2.50. 3775

Contents: Preface. Perspective of the electric system. Distribution to serve the load. The distribution division. Generation of electricity. Fundamentals of the electric circuit. Inductance and related characteristics. Tools for electrical problems. Transformers. Transformer connections. Voltage control. Current interrupting equipment. Voltage protection—lightning—grounding. Street lighting circuits. Mechanical principles in distribution. Economic principles in distribution. Measures of service. Appendix. Chart for graphical solutions. Index.

Note: An elementary text covering the basic factors of electric power distribution, designed as a self-study course primarily for employees of electric power companies including linemen, repairmen, inspectors, draftsmen, as well as sales and purchasing personnel. The subject is treated from the practical point of view, essential theory explained by comparison and analogy. Simple arithmetic only is used.

SEELYE, HOWARD PAUL

Electrical distribution engineering. New York: McGraw-Hill Book Company, Inc., 1930. 710 p. illus. 24 cm. \$6.00. 3776

Contents (abridged): Distributing system. Loads and their characteristics. Types of distribution systems. Street-lighting circuits. Power loss. Lightning arresters. Mechanical design. Conductors. Clearances. Transformer installations. Underground construction. Economical design. Investment costs. Cost of energy losses. Problems on primary and secondary lines.

Note: A guide to the electrical, mechanical, and financial

aspects of electrical distribution engineering. The volume, intended as a text for the student and as a reference tool for the practicing engineer, deals with both the theoretical and practical sides of the subject. The three final chapters outline the solution of problems which may be encountered during the construction of distributing systems. There is an index.

STEINBERG, MAX JACOB, AND THEODORE H. SMITH

Economy loading of power plants and electric systems. New York: John Wiley & Sons, Inc., 1943. 203 p. illus. 23 cm. \$3.50. 3777

Contents: Introduction. Theory of incremental rates. Load division in the boiler room. Load division in the turbine room. Load division in the generating station. System load division. Adjustment of computed performance curves. Index.

Note: A thorough discussion, both non-mathematical and mathematical, of the incremental rate theory. The theoretical aspects are given due consideration, together with the extent to which they can be modified in the interest of simplification. The book derives the mathematical conditions for obtaining maximum overall efficiency by the loading of equipment in parallel operation. Then it applies incremental rates in the academic solution of load-division problems. It describes limitations in the application of the incremental rate theory. Finally, it gives the practical solution of load-division problems. Numerous simple illustrations show how the principles may be applied. A station-loading slide rule is described.

TARBOUX, JOSEPH GALLUCHAT

Electric power equipment. Second edition. New York: McGraw-Hill Book Company, Inc., 1932. 493 p. illus. 23 cm. \$5.00. 3778

Contents: General introduction. Types of power plants. Load graphs and their significance. Generating equipment. Synchronous generator excitation. Electrical power plant circuit layouts. Transformers. Transformer connections. Switchboards and switchboard layouts. Switching equipment. Switching and control devices. Meters and measurements. Short-circuit currents. Current-limiting reactors. Calculation of short-circuit currents. Transmission line calculation. Transmission line installation. Protection of electrical systems. Systems of relay protection. Transmission line disturbances and protection. Substations. Distributing systems. Economics of electric service. Appendixes. Index.

Note: For students in electrical engineering who have had a course covering electrical circuits and machinery. It is designed as a text or reference book covering a broad scope rather than detail. The second edition includes new material on circuit-breaker contacts and mechanisms, on metal-clad switchgear, on new type thermal meter, on voltage regulators and regulation, on transformers, on economics of power generation. Questions and problems are given at ends of chapters, and appendix II contains project problems. Appendix I illustrates trends in power plant design.

TARBOUX, JOSEPH GALLUCHAT

Introduction to electric power systems. Scranton, Pa.: The International Textbook Company, 1944. 385 p. illus. 21 cm. (International texts in electrical engineering, E. E. Dreese, consulting editor) \$4.50. 3779

Contents: Introduction. Resistance, inductance, and capacity. Transmission line inductance, inductance by geometric mean distances. Conductors with earth return. Transmission line capacity. The long transmission line. Generalized circuit equations: circle diagrams. Symmetrical components. Alternator impedances. Two-winding transformer impedances. Short transmission line impedances. The long-line impedances. Sequence networks. Short-circuit calculations of power networks. Three-winding transformers. Circuits for the measurement of component currents, voltages and power. Circuits with unbalanced impedances. Alternator transients. System stability. Transmission line surges. Problems. Appendixes. Index.

Note: A one-year undergraduate textbook based on lectures given by the author to students at the University of Tennessee. The subject is treated from the point of view of students who will eventually be concerned with the operation of power lines rather than with their design. Problems for each chapter are given in the appendix, together with tables of hyperbolic, exponential, and trigonometric functions, tables of cable sizes, and similar related information.

TENNESSEE VALLEY AUTHORITY

The Norris project; a comprehensive report on the planning, design, construction, and initial operations of the Tennessee Valley Authority's first water control project. Washington, D.C.: Government Printing Office, 1940. 840 p. illus. 24 cm. (Technical report no. 1) \$1.50. 3779a

Contents: Introduction. Project investigations. Dam and power house design. Access roads and employee housing. Construction plant and river diversion. Dam and power house construction. Reservoir activities. Initial operation and related development. Costs. Acknowledgments. Appendixes: Statistical summary. Consultants' reports. Design studies. Model studies. Cement and aggregate studies. Acceptance tests. Specifications. Allocation of costs. Personnel data. Tennessee Valley Authority Act. Index.

Note: A survey of the engineering aspects of the planning and construction of the Norris Dam and Reservoir in eastern Tennessee. The book is intended primarily for engineers. Three hundred seventy five illustrations and 171 tables are included.

Electric Machinery

AMERICAN SOCIETY FOR TESTING MATERIALS

Bibliography and abstracts on electrical contacts. Prepared by Committee B-4 on Electrical-Heating, Electrical-Resistance, and Electrical-Furnace Alloys of the American Society for Testing Materials. Philadelphia: American Society for Testing Materials, 1944. 137 p. 23 cm. \$5.00. 3779b

Contents: Preface, by Dean Harvey. Introduction, by Erle I. Shobert, Jr. Subject index. Author index. Bibliography and abstracts. Key to abbreviations.

Note: This bibliography was compiled in connection with a study undertaken by the A.S.T.M. to develop a standard method for testing electrical contact materials. The entries, arranged chronologically, cover the period 1835-1943. There are a total of 837 titles with descriptive annotations, the majority of which have been taken from *Chemical abstracts* and *Science abstracts*.

ANNETT, FRED ANZLEY, AND A. C. ROE

Connecting and testing direct-current machines. Second edition. New York: McGraw-Hill Book Company, Inc., 1937. 302 p. illus. 23 cm. \$3.00. 3780

Contents: Part I, Reconnecting direct-current machines: Classification of coils according to their insulation. Lap windings. Wave windings. Fractional pitch windings. Taking rewinding data on armatures. Types of armature coils and how they are made. Reconnecting for changes in voltage. Reconnecting for change in speed. Reconnecting for change in speed and voltage. Changing a series motor to a shunt or a shunt to a series. Turning a direct-current generator into a motor or vice versa. Figuring a new winding for an old direct-current machine. Increasing machine rating by changing conductors and insulation. How leads are arranged in wire-wound armature coils. Part II, Testing direct-current machines: Locating faults in armatures. Short-circuits in armature windings. Open-circuits in armature windings. Locating grounds in armatures. Locating reversed coils in armature windings. How to construct and use an armature-testing magnet. Checking field-coil connections and polarity. Locating faults in field coils. Testing lap-wound armatures with equalizer connections. What is good insulation? High-frequency-voltage testing of insulation, coils and windings.

Note: A practical treatment of methods of reconnecting direct-current motors for changes in voltage and speed and of locating and repairing faults in the armature and field windings. The book includes many useful winding diagrams.

ANNETT, FRED ANZLEY

Electric elevators, their design, construction, operation and maintenance. Second edition.

New York: McGraw-Hill Book Company, Inc., 1935. 495 p. illus. 23 cm. \$5.00. 3780a

Contents (abridged): Types of machines—direct-current equipment. Alternating-current machines. Overspeed governors and car safeties. Direct-current brakes. Alternating-current brakes. Direct-current semi-magnet controllers. Two-speed direct-current motor controllers. Push-button and dual control. Car-switch control with automatic landing. Elevator-door operating equipment. Signal systems. Locating faults in the mechanical equipment. Lubrication. Ropes, their construction, inspection and care. Selecting elevators for office buildings.

Note: A practical manual on electric elevators for engineers, electricians, architects, and building superintendents. The book covers the design and construction of the various types of machines and their equipment, and inspection, maintenance, and repair methods.

ANNETT, FRED ANZLEY

Electrical machinery; a practical study course on installation, operation and maintenance. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 429 p. illus. 22 cm. \$3.00. 3781

Contents: Fundamental principles. Elementary magnetism. Fundamentals of the electric circuit. Ohm's law, series and parallel circuits. Energy, work and power. Complex circuits and effects of internal resistance. Electrical instruments. Methods of measuring resistance. Fundamental principles of dynamo-electric machinery. Direct-current machinery construction. Inductance and commutation. Types of direct-current generators. Direct-current generator characteristics. Losses in direct-current machinery. Direct-current motors. Types of direct-current motors. Locating position of brushes on commutator. Three-wire systems and how they may be obtained. Direct-current generators in parallel. Fundamental principles of alternating current. Measurement and addition of alternating voltages and current. Two-phase and three-phase circuits. Operating alternators in parallel. Kilowatts, kilovolt-amperes and power factor. Transformers. Alternating-current motors. Starting alternating-current motors. Electron tubes and their applications. Index.

Note: This book originated in a series of articles published in the periodical *Power* from January, 1917 to December, 1919. The articles appeared under the general title, *The Electrical study course*, and they were designed as self-instruction aids for beginners and workers in the electrical industries. The book is still intended for this kind of use. Extensive changes were made in the new edition, the book being about 100 pages longer. New material includes discussions of megohm meters, electron tubes, and mercury arc rectifiers.

BLUME, LOUIS FREDERICK, AND OTHERS

Transformer engineering; a treatise on the theory, operation and application of transformers, by Louis Frederick Blume, Guglielmo Camilli, Aram Boyajian, and Vincent M. Montsinger. New York: John Wiley & Sons, Inc., 1938. 496 p. illus. 23 cm. \$5.00. 3782

Contents: The general nature of transformer problems. Excitation characteristics of the transformer; exciting current and core loss. Non-triple harmonic phenomena due to transformer exciting current. Impedance characteristics of transformers. Impedance characteristics of multicircuit transformers. Short-circuit currents and voltages by the method of symmetrical components. Transformer connections. Auto-transformer connections. Thermal characteristics of transformers. Characteristics of transformer circuits for changing ratio under load. Typical connection diagrams for changing transformer ratio under load. Automatic operation of voltage-control equipment. Applications for voltage-control equipment. Phase-angle control. Characteristics of insulating materials. Voltage stresses in auto-transformers in Y-connection. Transient voltage characteristics of transformers. Insulation coordination of transformers. Index.

Note: This book is designed primarily for engineers interested in a comprehensive discussion of the specification, selection, application, and operation of transformers. Emphasis has been placed on presenting the essential physics concerned in each problem. The treatment is non-mathematical and particularly suited to the operating engineer, but mathematics is included wherever necessary for the adequate solution of a problem. A great deal of practical information is given concerning methods of calculation and properties of transformers.

BRAYMER, DANIEL HARVEY, AND A. C. ROE

Rewinding and connecting alternating-current motors; fundamental principles involved in applying and checking lap and wave windings in alternating-current-motor stators and rotors together with practical winding procedure and extensive reference data in typical examples completely worked out, in winding diagrams and in 71 special tabulations, for everyday use by maintenance men in industrial plants, by winders in electrical service and repair shops and by students pursuing electrical courses. New York: McGraw-Hill Book Company, Inc., 1932. 372 p. illus. 23 cm. \$3.50. 3783

Contents (abridged): Operating principles of a single-phase motor. Operating principles of a two-phase motor. How to lay out and use two-phase lap windings. Directions for stubbing and connecting lap windings. Soldering joints in electrical windings. Stator windings for turbogenerators. Multi-speed induction motor-windings. How to make voltage changes in induction motors. Construction and operation of induction motor rotors. Rewinding and connecting wound motors. Index.

Note: Presents the fundamental principles of induction-motor windings and practical shop information and procedure on lap and wave windings as used in present-day motors and in those which have been in service for years.

BRAYMER, DANIEL HARVEY, AND A. C. ROE

Rewinding small motors; practical details of repair shop practice with step-by-step procedure for rewinding all types and designs of fractional horsepower direct and alternating current motors. Second edition. New York: McGraw-Hill Book Company, Inc., 1932. 263 p. illus. 23 cm. \$2.50. 3784

Contents (abridged): Part I, Rewinding procedure for small direct-current motors: Things to do before a job is sent to the repair bench. Recording winding data and stripping a direct-current armature. Insulating the armature core. The loop winding. Special chorded split-pitch loop winding. Chorded split-loop winding. The split V-loop winding. Winding automobile starter and generator armatures. How to determine the position of commutator on the shaft. Connecting up hand-wound armatures. Testing armatures while and after winding. Part II, Rewinding procedure for small alternating-current motors: Testing and locating faults in small alternating-current motors. Information to record for small alternating-current motors before stripping them. Insulating the core and the winding. How a hand winding is put on a stator. Rewinding a small universal motor. Rewinding small two- and three-phase motors. Changing single-phases windings for two and three phase operation. Repair shop tools. Appendix. Index.

Note: This book contains detailed, practical directions for repair shop practice. New material in the second edition includes data on capacitor or condenser type of motor.

BRYANT, JOHN MYRON, AND ELMER WALTER JOHNSON

Alternating current machinery. New York: McGraw-Hill Book Company, Inc., 1935. 790 p. illus. 23 cm. \$6.00. 3785

Contents (abridged): The transformer. Equivalent circuit diagrams, transformer constants. Transformer losses. Transformer connections. Autotransformer connections. Synchronous machines. Armature windings. The two-reaction theory of synchronous generators. Rating, losses, efficiency. Armature reaction. Blondel circle diagram for a synchronous motor. General description and operating equations of polyphase induction motors. Induction-motor constants and losses. The single-phase induction motor. Frequency changers. Commutator a-c motors. Mercury-arc rectifiers. Index.

Note: Designed for use as a text in courses in electrical machinery, this book includes theoretical and practical treatments

of transformers, synchronous machines, induction machines and synchronous converters, with shorter discussions of commutator type a-c motors and mercury-arc rectifiers. A number of illustrative examples from practice are introduced.

BULL, HEMPSTEAD STRATTON

Direct-current machinery. New York: John Wiley & Sons, Inc., 1939. 318 p. illus. 23 cm. \$3.00. 3786

Contents: Electromagnetic relations. Measuring instruments. Motor elements. The shunt motor. Variable-flux motors. Motor starting and speed control. The magnetic circuit. Generator characteristics. Armature windings. Losses and efficiency. Armature reaction. Commutation. Parallel operation. Generators for special purposes. Rating and cost. Electric circuits. Appendix. Index.

Note: Fundamental and basic elements regarding all types of direct-current machines are reviewed and clearly developed in this book. Certain transient conditions in motor operation are given in more detail than is usual. The processes by which hysteresis and eddy-currents create counter-torque are clearly explained. A unique graphical summary of motor and generator losses is given. Magnetic field sketches are used as an approach to the study of armature reaction, etc. Over two hundred and fifty problems of varying degrees of difficulty are included. The text is amplified by drawings, tables, and photographs.

CROFT, TERRELL WILLIAMS

Electrical machinery; principles, operation and management. Revised by George H. Hall. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1938. 394 p. illus. 21 cm. \$3.00. 3787

Contents: Principles, characteristics and construction of direct-current generators and motors. Management of direct-current generators. Management of and starting and controlling devices for direct-current motors. Troubles of direct-current motors and generators. Testing direct-current generators and motors. Principles, characteristics and construction of alternating-current generators. Management of alternating-current generators. Principles, construction and characteristics of induction motors. Principles, construction and characteristics of single-phase motors. Synchronous motors and condensers. Starting and controlling devices for induction motors. Troubles of alternating-current generators and motors. Testing alternating-current generators and motors. Test determination of motor-drive power requirements. Motor-generators and frequency converters. Synchronous converters and mercury-arc power rectifiers. Motor modifications. Motor applications. Formulas.

Note: This book is for practical electrical workers and beginning electricians. It covers installation, operation, and maintenance.

DUDLEY, ADOLPHUS MANSFIELD

Connecting induction motors. The practical application of a designing engineer's experience to the problems of operating engineers, armature winders and repair men. Also the presentation to students of practical questions arising in winding and connecting alternating current motors. Third edition. New York: McGraw-Hill Book Company, Inc., 1936. 464 p. illus. 23 cm. \$3.50. 3788

Contents (abridged): The rotating magnetic field. Types of windings. Rotor windings. Single-phase windings. Chorded windings. Effect of voltage on windings and possibilities of connecting a winding for more than one voltage. How the number of phases affects the windings and the result of changing voltage and phase. How the frequency affects the windings. The number of poles and the R.P.M. Less common connections used for unsymmetrical conditions or in an emergency. Reconnecting an old winding for new conditions or in an emergency. Locating faults in induction motor windings. How to figure a new winding for an old core. Connecting to correct magnetic side pull. Standard group diagrams from 2 to 14 poles. Lap windings with unequal coil groupings. Wave diagrams. Performance calculation. Index. Index of tables. Index of diagrams.

Note: Changes from the second edition (1925) include a new

series of standard diagrams, further explanation of the rotating magnetic field, a method of calculating effect on motor performance of an unbalanced circuit, and a method of calculating the performance of a motor from its dimension and proposed winding. The book is primarily for men engaged in actual operation and repair of induction motors.

GIBBS, JESSE BERTHOLD

Transformer principles and practice. New York: McGraw-Hill Book Company, Inc., 1937. 210 p. illus. 23 cm. \$2.50. 3789

Contents: Introduction. Single-phase and three-phase transformers. Coils and cores. Autotransformers. Transformer cooling. Temperature indicators. Transformer polarity. Usual transformer connections. Special applications of standard transformers. Parallel operation of transformers. Phase transformation. Phase transformation by autotransformers. Ratio adjustment. Transformer oil. Maintaining oil quality. Mechanical forces in transformers. Constant-current-regulating transformers. Instrument transformers. Transformer insulation and surge protection. Transformer testing. Care and operation of transformers. New transformers or old? Transformer calculations.

Note: A practical engineering treatment, for the average electrical man concerned with transformers, of their underlying principles, construction, testing, connection, and operation. Mathematical theory is avoided, and various special types and applications of transformers are included, such as autotransformers and phase changing.

HARWOOD, PAISLEY BEACH

Control of electric motors. Second edition. New York: John Wiley & Sons, Inc., 1944. 479 p. illus. 22 cm. \$5.00. 3790

Contents: Introduction. Direct-current contactors and relays. Alternating-current contactors and relays. Pilot devices and accessories. Accelerating methods. Wiring diagrams. Construction of control apparatus. Magnetically operated brakes. The direct-current shunt motor. Shunt field relays and rheostats. Variable-voltage controllers. The direct-current series motor. Two-motor drives. Dynamic lowering hoist controllers. The polyphase squirrel-cage motor. The wound-rotor motor. Single-phase motors. The synchronous motor. Resistor design. Electronic motor control. Tables. Index.

Note: About 80 pages have been added in the second edition, which include complete chapters on synchronous motor control and variable-voltage control. Many new tables give the ratings of motors and controllers. Text and illustrations have been revised to conform to latest practice and to include new devices and methods. The book describes the characteristics of various types of motor, and explains how the inherent features of each are used for control purposes. Design, construction, and operating characteristics of controllers and control devices are described in detail. Motor acceleration methods, dynamic braking methods, and resistor design are discussed in a practical, comprehensive manner. Numerous diagrams and graphs contain much reference material.

HEHRE, FREDERICK WILLIAM, AND GEORGE T. HARNESS

Electrical circuits and machinery. New York: John Wiley & Sons, Inc., 1940-42. 2 v. illus. 23 cm. Vol. I, \$4.50; Vol. II, \$6.00. 3791

Contents: Volume I: Direct currents. Introduction. Electromagnetism. The electric circuit. Self-induction and mutual induction. Parts of a dynamo-electric machine—function, material, construction. The direct-current generator. The direct-current motor. Losses, efficiency, heating, and rating. Direct-current instruments. Auxiliary apparatus used with direct-current machinery. Principles of electronics. Batteries. Appendix. Index. Volume II: Alternating currents. Fundamental principles. The use of vectors in alternating-current circuits. The single-phase circuit. The single-phase circuit by the complex or symbolic notation. The polyphase circuit. The polyphase circuit by the complex notation. The transformer. The alternator. The induction motor. The synchronous motor. The single-phase motor. Mechanical conversion devices. Electronic conversion devices. Electronic devices. Alternating-current instruments. Electric power transmission and distribution. Appendix. Index.

Note: This work is intended as a successor to J. H. Morecroft and F. W. Hehre's *Electrical circuits and machinery*, New York, 1923-25, 3 v. An outstanding feature of Volume I is the chap-

ter on electronics. Particular attention is paid to the transfer of electric charge as applied to ordinary circuits and to electronic circuits; an extended mathematical discussion of both self-induction and mutual induction is given. The chapter on losses, efficiency, heating, and rating was written from the viewpoint of the A.S.A. and N.E.M.A. standards, with numerous arithmetical applications. In the first six chapters of Volume II ample space is devoted to the subjects of voltage and current representation as rotating vectors, and the complex or symbolic method of representing voltages and currents in both single-phase and poly-phase circuits is developed. Machinery is fully discussed from the standpoint of modern practice. Numerous problems are included in both volumes. The work is designed primarily as a textbook for engineering students. The same publisher offers a laboratory manual by F. W. Hehre and J. A. Balmford, *Electric circuit and machine experiments*, 1940, 279 p., \$2.00, which is suitable for use with this text.

KLOEFFLER, ROYCE GERALD, AND OTHERS

Direct-current machinery, by Royce G. Kloeffler, Jesse L. Brennehan and Russell M. Kerchner. New York: The Macmillan Company, 1934. 403 p. illus. 22 cm. (Engineering science series, edited by E. R. Hedrick) \$4.40. 3792

Contents: The dynamo. Dynamo principles. Armature windings. The dynamo magnetization curve. Armature reaction. Reactance voltage and interpoles. Dynamo voltage characteristics. Operation of generators. Dynamo speed and torque characteristics. Starting and speed control of motors. The three-wire distribution system. Efficiency of dynamos. Testing of dynamos. Rating, weight, and cost of dynamos. Special direct-current dynamos and applications. Commutation. Units and fundamental concepts. Index.

Note: This textbook covers the construction, theory of operation, and the characteristics of direct-current motors and generators. An appendix treats the fundamentals of magnetic and electric circuits. A chapter deals with the relationship between cost, size, and efficiencies of direct-current machines.

KUHLMANN, JOHN HENRY HELWIG

Design of electrical apparatus. Second edition. New York: John Wiley & Sons, Inc., 1940. 506 p. illus. 23 cm. \$5.00. 3793

Contents: Direct-current machines: Construction. Voltage formula and output equation. Armature windings and insulation. The magnetic circuit. Armature reaction and field winding design. Commutation and commutating pole design. Losses, efficiency and temperature rise. Sample design. Design of constant-speed, direct-current motor. Synchronous machines: Construction. Voltage formula and output equation. Armature winding and insulation. Magnetic circuit. Armature reactions in synchronous machines. Losses, efficiency and temperature rise. Sample design. Design of self-starting synchronous motor. Induction motors: Construction. The stator. The rotor. Motor characteristics. Sample design. Design of wound-rotor induction motor. Fractional horsepower single-phase motor design. Transformers: Construction. Core and windings. Operating characteristics. Sample transformer designs. Index.

Note: Practical design methods are explained in this book. They are based on the author's many years of experience as a designer. The construction of the apparatus to be designed is explained, as well as the formulas and procedure. The design limits established by practice are given. The explanatory matter is illustrated with complete specimen calculations. When a design has been carefully carried through, following the method of this book, it can be expected that the predicted performance will be reasonably near the performance which would be obtained if the machine were constructed and tested.

LANGSDORF, ALEXANDER SUSS

Principles of direct-current machines. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1940. 746 p. illus. 23 cm. (Electrical engineering texts) \$5.50. 3794

Contents: Steady flow of current in conduction circuits. Magnetism. Electromagnetism. Electrostatics. Systems of electrical units. The dynamo. Armature windings. The magnetizing effects of the field and armature windings. Predetermination of magnetization curve and magnetic leakage. Operating characteristics of generators. Motors. Commutation. Efficiency, rating, and heating. Special machines and applications.

Note: A standard college textbook that presents a comprehensive treatment of the fundamental principles of the design and operation of direct-current machines. The present edition contains a more extensive treatment of the general principles of electricity and magnetism; the chapter on commutation has been completely rewritten and considerably simplified; and there is a simple derivation of the formula for the velocity of propagation of electromagnetic waves.

LANGSDORF, ALEXANDER SUSS

Theory of alternating-current machinery. New York: McGraw-Hill Book Company, Inc., 1937. 788 p. illus. 23 cm. (Electrical engineering texts) \$6.00. 3795

Contents: Current and voltage relations in single-phase circuits. The complex of quantity. Polyphase circuits. The transformer. The synchronous generator. The synchronous motor. Parallel operation of synchronous generators. The synchronous converter. Asynchronous machines: physical considerations. The polyphase induction motor. The single-phase induction motor. The asynchronous or induction generator. Phase and frequency converters. Commutator motors.

Note: An engineering college textbook that gives a comprehensive discussion of electromagnetic machines, as well as the basic principles which influence their design and operating characteristics. Quantitative relations are approached through the medium of geometrical representation, since experience has shown that a complex of relations can be comprehended in toto by this method better than in any other way.

LAWRENCE, RALPH RESTIEAUX

Principles of alternating-current machinery. Third edition. New York: McGraw-Hill Book Company, Inc., 1940. 678 p. illus. 23 cm. (Electrical engineering texts) \$5.50. 3796

Contents: Synchronous alternators. Static transformers. Synchronous motors. Parallel operation of alternators. Polyphase induction motors. Single-phase induction motors. Series and repulsion motors.

Note: Characterized by unusual clarity of exposition, this text considers the principles underlying the construction and operation of the most important types of alternating-current machinery. The present edition contains additional material on such topics as operating characteristics of alternators, transient conditions in alternators, multi-winding transformers, harmonics in polyphase transformers, polyphase induction motors, etc.

MARTI, OTHMAR KARL, AND HAROLD WINOGRAD

Mercury arc power rectifiers; theory and practice. New York: McGraw-Hill Book Company, Inc., 1930. 473 p. illus. 24 cm. \$6.00. 3797

Contents: Introduction. Theoretical principles and physical properties of mercury arc rectifiers. Elementary principles of rectification and rectifier phenomena. Theory. Rectifier transformers: their connections and characteristics. Design and construction of mercury arc rectifiers. Design and construction of rectifier auxiliaries. Operation of mercury arc rectifiers. Application of mercury arc rectifiers. Substations. Voltage control and regulation. Interference with communication circuits. Methods of testing rectifiers and their auxiliaries. Bibliography. Index.

Note: Designed for engineers, and others concerned with the use of rectifiers. The operation of the rectifier is explained, the mathematical relations of currents and voltages in rectifier circuits are derived, and the application of steel-enclosed rectifiers outlined, with emphasis upon their use in railway practice. The material is arranged in such a manner that the chapters dealing with the mathematics of the subject may be omitted without loss of continuity.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY. DEPARTMENT OF ELECTRICAL ENGINEERING

Magnetic circuits and transformers; a first course for power and communication engineers, by members of the staff of the Department of

Electrical Engineering, Massachusetts Institute of Technology. New York: John Wiley & Sons, Inc., 1943. 718 p. illus. 23 cm. (*Its Principles of electrical engineering series*) \$6.50. 3798

Contents: Properties of ferromagnetic materials; the magnetic-circuit concept. Principles of magnetic-circuit computations. Permanent magnets and energy in the magnetic field. Losses in magnetic cores containing time-varying fluxes. Alternating-current excitation characteristics of iron-core reactors and transformers. Model theory and design of iron-core reactors. Thermal properties and heat flow. General design and cost considerations. Transformers: general principles. Physical features of transformers. Magnetic leakage in transformers. Leakage inductances. Voltage regulation, efficiency, and rating. Autotransformers. Economy in power-system transformer applications. Self- and mutual inductances. Frequency characteristics. Special applications of transformers in power systems. Applications of transformers in telephone systems. Three-phase connections; general considerations. Effects of transformer impedances in balanced three-phase circuits. Harmonic phenomena in three-phase circuits. Unbalanced conditions in three-phase transformer banks. Three-phase connections of autotransformers. Three-phase transformers. Multicircuit transformers. Transformer connections for phase transformation. Parallel operation of transformers. Appendices. Bibliography. Index.

Note: A feature of this book is that practical applications are made to both heavy-current power and light-current control, measurement, and communications problems. The material is presented both through mathematical analysis and through physical interpretation of the phenomena. The first part of the book deals with magnetic circuits. It includes discussions of the current theory of ferromagnetism, the derivation of the magnetic-circuit concept, and the development of the fundamental principles for computation of the behavior of magnetic circuits. Also included are a treatment of iron-core reactors by means of model theory and a concise summary of thermal-circuit problems. Part II, on transformers, surveys first some general principles involved in the design and manufacture of all electric apparatus. It then applies the general principles to transformers and continues with analysis of their electrical characteristics. Two methods of analysis are given, and their interrelations stressed: the resolution of the magnetic fields of transformers into leakage and resultant mutual components, and the classical theory of coupled circuits.

MONSETH, INGVALD T., AND P. H. ROBINSON

Relay systems; theory and application. New York: McGraw-Hill Book Company, Inc., 1935. 549 p. illus. 23 cm. \$6.00. 3799

Contents: The relaying problem. Symmetrical components. Calculation of fault currents and voltages. Network reduction and the determination of current and voltage distribution in networks under fault conditions. Determination of phase-sequence constants of transformers and autotransformers and their connections in the sequence networks. Calculation of transient short-circuit currents. Transmission-circuit formulas and equivalent circuits. Vectors for relay systems. Application of instrument transformers to relay systems. Differential protection. Phase and line-to-ground-fault protection of transmission lines. Pilot systems of relaying for transmission-circuit protection. Waveform phenomena and their effects in relay circuits. Relay testing and maintenance. Index.

Note: A text and reference book for practicing electrical engineers and for advanced students in engineering colleges. A detailed analysis of fault calculations for balanced and unbalanced systems and for all types of short circuits is first presented, followed by a description of relay systems including high-speed apparatus of the distance, balance, differential, pilot-wire, and carrier-current types. The book was developed from a series of articles by the authors which appeared in the *Electric journal*, Pittsburgh, during 1930, 1931, and 1932.

MORETON, DAVID PENN, AND OTHERS

Armature winding; a practical manual on the construction, winding and repairing of A.C. and D.C. motors and generators, together with practical connection diagrams, by David P. Moreton, Carl H. Dunlap, and L. R. Drinkall. Fourth edition. Chicago: American Technical Society, 1938. 289 p. illus. 21 cm. \$2.00. 3800

Contents: Types of A.C. generators and windings, including Diesel engine generators. Types of A.C. motors. Types of armatures. Armature construction. Commutator and brush construction. D.C. armatures, including repairing. A.C. motors, including testing and repairing of windings. Connection diagrams for induction motors. Index.

Note: The senior author of the 1929 edition was A. C. Roe, whose place in the present edition is taken by Professor Moreton. Although there is practically no revision of the earlier work, 86 new pages on various types of alternating current generators and motors have been added. Good diagrams accompany a simply written text. The work is designed for the practical winder and the repair man.

PUCHSTEIN, ALBERT FREDERICK, AND T. C. LLOYD

Alternating-current machines. Second edition. New York: John Wiley & Sons, Inc., 1942. 655 p. illus. 23 cm. \$5.50. 3801

Contents: Synchronous generators. Transformers. Polyphase induction motors. Single-phase induction motors. Synchronous motors. Alternators in parallel. Synchronous converters. Mercury-vapor arc rectifiers. Series motors. Repulsion motors. Problems. Index.

Note: In dealing with the various types of alternating-current machines each topic is discussed as to construction, operating characteristics, calculation of operating characteristics from tests, and analysis of related phenomena. This revised edition contains new methods of analysis and modern standardization practices. As in the previous edition, only steady-state phenomena are covered with a few important exceptions, as in the analysis of hunting under various conditions of synchronous-motor operation. The book now contains the methods of calculating alternator regulation and the concepts of direct- and quadrature-axis synchronous reactance.

ROTTERS, HERBERT CHRISTOPHER

Electromagnetic devices. New York: John Wiley & Sons, Inc., 1941. 561 p. illus. 23 cm. \$6.00. 3802

Contents: Introduction. Magnetic properties of iron and some of its alloys. The theory of operation of electromagnets and the factors entering into their efficient design. Calculation of magnetic circuits containing iron and air gaps of known permeance. Calculation of the permeance of flux paths through air between surfaces of high-permeability material. Coils. Heating of magnet coils. Magnetic forces. Characteristics of tractive magnets: selection of best type for a specific duty. Design of tractive magnets: design procedure: illustrative designs. Time-delayed magnet. High-speed magnets. Alternating-current magnets. Relays. Appendix. Index.

Note: A textbook for advanced students in electrical engineering, and a reference book for engineers concerned with the development or design of magnetic devices. The last six chapters cover the practical application of the theory to the solution of diverse problems. The general treatment of the solutions of these problems is followed by examples of exact and specific numerical solutions. Special emphasis is given to the properties of magnetic materials.

SHOULTS, DAVID ROY, AND C. J. RIFE

Electric motors in industry. Edited by T. C. Johnson. New York: John Wiley & Sons, Inc., 1942. 389 p. illus. 23 cm. (General Electric series) \$4.00. 3803

Contents: Industrial power supply. Industrial power supply, continued. Physical concepts of motor performance. Basic motor characteristics of induction motors. Induction motor applications. Synchronous apparatus. D-C motors. Industrial control apparatus. The application of electric motors. Special applications requiring adjustable speed drives. Coordinated drive systems. Electronic devices and their principles. The industrial application of electron tubes. Index.

Note: This volume deals thoroughly with the characteristics of motors and their control. The approach is fundamental. It offers detailed discussion of those principles which form the best basis for correct motor application in industry. The treatment is not exhaustive in scope. Representative uses have been selected. The motors dealt with are typical of those found in industry. Brief descriptions of their mechanical construction are given so that the reader may be able to understand their operation.

STILL, ALFRED

Elements of electrical design. Second edition. New York: McGraw-Hill Book Company, Inc., 1932. 583 p. illus. 23 cm. \$5.00. 3804

Contents: Introductory. The electric circuit—resistances. The electric circuit (continued)—magnet coils. The magnetic circuit. Electromagnets. Design of electromagnets. The dielectric circuit. Design of insulation. Dynamo. Electric machinery. Design of armature of D.C. generator. Commutation and the design of commutating poles. Tooth reluctance and armature reaction. Design of field magnets and windings. Losses, ventilation, and temperature rise. Alternating current machinery. Synchronous generators. Synchronous A.C. generators (continued). Field magnet design. Armature reaction. Synchronous A.C. generators (concluded). Regulation and short-circuit current. Polyphase induction motors. Design of three-phase motor. Polyphase induction motors (continued). Characteristics and performance. Alternating current transformers. Mechanical design of electrical machinery.

Note: A college text in which the problems of the designing engineer are used to illustrate the application of fundamental laws in the design of practical machines and apparatus.

TIMBIE, WILLIAM HENRY

Industrial electricity; direct-current practice. Second edition, completely rewritten. New York: John Wiley & Sons, Inc., 1939. 635 p. illus. 22 cm. \$3.00. 3805

Contents: Fundamental ideas; Ohm's law. Distributing systems. Electrical properties of wire. Methods of measuring resistance. Magnets and magnetism. Electromagnets. The magnetic circuit. Inductance. Generators. Motors. Efficiency; parallel operation. Armature windings. Batteries and electrochemical action. Kirchhoff's laws. Insulators, dielectrics, condensers. Electrical measuring instruments. Appendix. Index.

Note: In this second edition a number of revisions have been made, although the general scope of the book has not been altered. The subject matter on direct-current practice has been brought up to date. A brief discussion of the modern concept of the composition of matter and of the electron theory has been included. More space is devoted to a standard treatment of the magnetic circuit and to generator and motor performance. The book presents a more thorough treatment of those principles which are directly applicable to direct-current practice.

VAN BRUNT, GEORGE ATHOL, AND A. C. ROE

Rewinding data for direct-current armatures. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 277 p. illus. 24 cm. \$2.50. 3806

Contents (abridged): Preface. Forms for data on small and medium-sized armatures. Forms for data on large armatures. Winding rules for direct-current armatures. Finding the lead throw of armature coils. What reentrancy means in lap and wave windings. Half-idle bars and dead coils. Winding and connecting data for some old direct-current armatures. Cutting out coils in direct-current armature windings. Cross or equalizer connections on lap windings. Synchronous-converter armature windings. Frog-leg armature windings for multipolar motors and generators. Complete rules for frog-leg windings. Rewinding material. Core insulation. Slot and end insulation. Cross-connecting material. Armature-banding material. Hot banding of armatures. Dipping and baking. Segmental banding. Protection of front V-ring on commutators. Index.

Note: A concise, practical manual for electrical repair shops, covering all steps in rewinding any armature, except forming the coils, from the time it comes into the shop until again ready for service. Especially emphasizes the data to take in stripping armatures, and forms for recording them correctly, to facilitate easy, rapid, accurate rewinding by any member of the shop. This edition includes information on glass insulation and baking of armatures by infra-red heat.

VAN BRUNT, GEORGE ATHOL, AND A. C. ROE

Winding alternating-current motor coils. New York: McGraw-Hill Book Company, Inc., 1938. 281 p. illus. 23 cm. \$3.00. 3807

Contents: Coil data recording forms and general details. Arrangement of conductors and leads. Internal insulation of turns and leads. Mechanical clearances for motor coils. Mush or hit-and-miss armature coils. Design of mush coils. Design of shuttle-puller and involute coils. Short-throw coils for chorded windings. Layer-wound pulled coils for partly closed-slot machines. Construction and insulation of strap-copper coils. Design of bent coils for concentric-chain windings. Hand-wound concentric-chain windings. Shoved-through concentric-chain windings. Concentric-chain windings for open- and partly closed-slot machines. Dropped-bottom-cell one-coil-per-slot windings. Involute one-coil-per-slot windings. Combination diamond and one-coil-per-slot windings. Bar-and-end-connector windings. Checking developed winding diagrams for three-phase machines. Effect of coil pitch when changing from salient- to consequent-pole connections. Mush-coil windings. Rotor windings of the half-coil shoved-through type. Replacing strap-copper field coils with the square- or ribbon-wire type. Glass insulation.

Note: A practical book that explains and illustrates methods of designing, laying out, winding, and insulating the types of coils used in modern single- and polyphase A.C. motors.

VEINOTT, CYRIL GEORGE

Fractional horsepower electric motors. What kinds are available—what makes them run and what they will do—how to repair, rewind and reconnect them. New York: McGraw-Hill Book Company, Inc., 1939. 431 p. illus. 23 cm. \$3.50. 3808

Contents: The story behind the nameplate. What makes an induction motor run? Single-phase induction motor windings and connections. Split-phase induction motors. Capacitor-start motors. Two-value capacitor motors. Single-value capacitor motors (permanent split-phase capacitor motors). Multi-speed capacitor motors for fans and blowers. Two-speed tapped-winding capacitor motors. Repulsion-start induction motors. Repulsion and repulsion induction motors. Universal motors. Shaded-pole motors and fans. Polyphase induction motors. Synchronous motors. Synchronous-drive motors and position indicators (Selsyn motors). Direct-current motors. Constructional features common to more than one type. Testing fractional horsepower motors. Supplementary useful information.

Note: Descriptions, data, and diagrams for eighteen major types, for practical use by all who are concerned with the design, manufacture, use, and repair of these motors. The book tells what kinds are available, what makes them run and what they will do, how to repair, rewind, and reconnect them.

WOLBER, JOSEPH GREGORY, AND OTTO K. ROSE

Practical and technical electricity; power wiring (direct current). Third edition. Chicago: The Goodheart-Willcox Company, Inc., 1942. 487 p. illus. 20 cm. (The American electrician series, Vol. 2) \$3.50. 3809

Contents: Fundamental ideas. Batteries. Electromagnetism. Electrical measuring instruments. The service entrance. Switchboards and switchboard equipment. The direct current motor dis-assembled. The direct current motor assembled. Control and protective devices. The direct current generator. Dynamo rating and efficiency. Dynamo installation. Appendix. Index.

Note: A textbook for use in vocational schools and technical high schools, and as a home study manual for the average electrical worker. The material is mainly on electrical wiring for direct-current motors and generators, but includes a discussion of meters and other measurement or test apparatus, theory of the dynamo, and control devices. The treatment emphasizes the practical application of theory from the viewpoint of the electrical mechanic, and no previous knowledge of the subject is assumed. The third edition incorporates recent revisions to the National Electrical Code (1942). A companion volume is the authors' *Practical and technical electricity; power wiring (alternating current)*, Chicago, The Goodheart-Willcox Company, Inc., 1937, 461 p., \$4.00.

WRIGHT, FORREST BLYTHE

Electricity in the home and on the farm. Second edition. New York: John Wiley & Sons, Inc., 1941. 372 p. illus. 21 cm. (Wiley farm series,

edited by A. K. Getman and S. E. Ladd) \$2.75.

3810

Contents: Part I, Thirty-nine practical shop jobs. Part II, The nature of electricity. Electric circuits. Electrical terms and measurement. Magnetism. Electrical effects. Electromagnetic induction and some of its applications. Direct-current generators and motors. Alternating currents. Power transmission and distribution systems for alternating current. Wiring systems for the farm and the home. Alternating-current generators and motors. Bibliography. Index.

Note: It is the aim of the author to present such fundamentals and practical jobs as will aid the reader to think for himself in terms of electricity and to acquire some of the more common skills in connection with its use. The book is divided into two parts. The first consists of a series of practical jobs arranged in order of difficulty. In this edition several new and highly practical jobs have been added. The second part comprises eleven chapters of text dealing with the fundamentals of electricity. Chapter x, Wiring systems for the farm and the home, is entirely new.

Electric Wiring

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS

Electric power distribution for industrial plants. This is not an A.I.E.E. standard and the recommendations are not intended to be mandatory or restrictive. Developed by A.I.E.E. Committee on Industrial Power. New York: The American Institute of Electrical Engineers, 1944. 109 p. illus. 27 cm. Paper, \$1.00. 3810a

Contents: System planning. Primary substations and feeders. Transformers, primary switchgear, and low-voltage feeder protection. Low-voltage feeders, panelboards, bus distribution systems and load circuits. Fault current calculations. Wires and cables.

Note: This report is intended to outline sound engineering principles of distributing power in industrial establishments. It analyzes the service requirements, voltage regulation problems, load characteristics and distribution system characteristics, the selection of equipment for distribution systems, and operating and maintenance problems insofar as they affect system and equipment selection.

COOK, ARTHUR LEROY

Electric wiring for lighting and power installations. Third edition, thoroughly revised. New York: John Wiley & Sons, Inc., 1933. 463 p. illus. 19 cm. \$3.00. 3811

Contents: Part I, Electric lighting systems: Introduction. Incandescent lamps. Gaseous-conductor lamps. Principles of illumination. Lighting accessories. Lighting fixtures. Practical methods of calculating interior illumination. Part II, Electric power systems: Motors for industrial purposes. Motor starting devices and controllers. Selecting motors for industrial purposes. Part III, Interior wiring: Systems of wiring. Methods of installing wiring. Wires and cables. Switches, circuit breakers and fuses. Sockets and receptacles. Panel boards and switch boards. Arrangement of circuits. Grounding of circuits. Calculation of D-C systems. Calculation of A-C systems. Examples of wiring systems. Appendix. Index.

Note: This book is intended for the practical needs of installation engineers, supervisors, and wiremen, as a guide in the design and installation of interior wiring and systems. Simple rules are given for determining the size and arrangement of lighting units and for estimating the kinds of service. The third edition contains many revisions, especially in the chapters on incandescent lamps, calculation of illumination, methods of installing wiring, and calculations of A-C and D-C systems. A new chapter on grounding of circuits has been added. Many charts and extensive tabular data are given in the appendix.

ILLUMINATING ENGINEERING SOCIETY

Handbook of interior wiring design. New York: Illuminating Engineering Society, 1937. 80 p. illus. 26 cm. \$1.00. 3811a

Contents: Residence wiring: The home of today. Residence standards of adequacy. Chart of residential outlet requirements. Specification form—single dwelling. Sample specification. The wiring of general occupancies: Advantages of adequate wiring. Lighting fundamentals: General principles of vision. Methods of controlling light. Lighting equipment. Lighting terminology. General lighting facts. Wiring standards for general occupancies: Adequacy standards for multi-family dwellings. Adequacy standards for commercial, public and industrial occupancies. Conditions of adequacy for power wiring. Procedure in the design of wiring installations: Procedure for lighting loads. Procedure for power installations. Tables of design data. Contracts and specifications: A.I.A. forms—agreement, general conditions. Condensed form of agreement and general conditions. Drawings. Material and installation specifications. Discussion and examples of specification articles.

Note: This handbook surveys the problems of adequate electric wiring and attempts to indicate standards and good practices. All types of electrical installations encountered in small jobs are covered and procedures are outlined for larger installations. The work was sponsored by eight national American associations in the field including the Illuminating Engineering Society. This Society has published other works of the same nature but with more specific applications.

RICHTER, HERBERT P.

Practical electrical wiring, residential, farm, and industrial; based on the 1940 National Electrical Code. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 521 p. illus. 21 cm. \$3.50. 3812

Contents (abridged): Preface to the second edition. Preface to the first edition. Part 1, Theory and basic principles: electricity: Basic principles and measurements. Types of current; power factor; transformers. Basic devices and circuits. Overcurrent devices. Selection of proper wire sizes. Theory of grounding. Outlet and switch boxes. Branch circuits and service entrance. Good lighting. Residential and farm motors. Part 2, Actual wiring: residential and farm: Planning an installation. Finishing: installation of switches and other devices. Farm wiring. Isolated lighting plants. Wiring apartment houses. Part 3, Actual wiring: non-residential projects: Planning nonresidential installations. Non-residential lighting. Wiring for motors. Wiring schools and churches. Wiring offices. Wiring stores. Appendix (Code tables). Bibliography. Index.

Note: A practical book for the use of both the beginner and the practicing electrician. The scope of the volume has been limited to the wiring of structures of average size and at voltages under 600 volts. Minor changes have been made in this edition and a chapter has been added on the changes in the 1940 code with respect to wire. There is now a brief bibliography.

SCHUHLER, ALBERT AUGUST

Electric wiring; a textbook of applied electricity for vocational and trade schools. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1943. 400 p. illus. 19 cm. \$2.50. 3813

Note: A complete introductory course in electric wiring, from the making of splices and joints to the wiring of various call signals, and lighting, telephone, and telegraph systems. Data are included on estimating and testing. Organized in job form, the book provides nine units or chapters, six of which represent various branches of the wiring field, the others, one or more branches. The National Electrical Code is explained as the jobs progress, and where needed to clarify the problems.

UHL, ALBERT, AND OTHERS

Interior electric wiring and estimating, by Albert Uhl, Arthur L. Nelson, and Carl H. Dunlap. Third edition. Chicago: American Technical Society, 1941. 354 p. illus. 21 cm. \$2.50. 3814

Contents: Knob and tube wiring. Wires in flexible steel conduit. Steel armored flexible cable. Wiring switches. Planning wiring installations. Industrial light and power installations. Conduit wiring materials. Conduit wiring, tools and methods. Apartment and factory building wiring. Estimating. 8 full sized blueprints. Index.

Note: The previous edition was printed in 1940. This third edition contains over fifty pages of additional new material and the book has been completely revised and includes changes made

in the National Electrical Code since the 1940 edition was published. All phases of interior wiring are covered, including estimating for labor and materials.

WHITEHORNE, EARL, EDITOR

Electrical wiring specifications, edited by Earl Whitehorne, with the collaboration of the editorial staff of Electrical contracting. New York: McGraw-Hill Book Company, Inc., 1941. 181 p. illus. 23 cm. \$2.50. 3815

Contents: Taking the gamble out of wiring. Wiring for residences, apartment houses, and farms: Residential wiring. Apartment-house wiring. Wiring farm buildings. Wiring commercial, institutional, and factory buildings: Rules for planning. What to do for lighting. What to do for power. Provision for heating load. Signaling and communication. How to specify the large job. Submitting the proposal.

Note: Designed to help designing engineers, estimators, and contractors draw up wiring plans and specifications. Covers wiring for light, power, and signaling—in industrial, commercial, farm, and residential buildings—outlining a simple, orderly procedure of developing specifications, and giving guiding rules of the National Electrical Code, standards, engineering data, diagrams to simplify the work.

Electric Insulation

LITTLETON, JESSE TALBOT, AND GEORGE WASHINGTON MOREY

The electrical properties of glass. New York: John Wiley & Sons, Inc., 1933. 184 p. illus. 23 cm. (National Research Council. Committee on Electrical Insulation. Monograph no. III) \$3.00. 3816

Contents: The manufacture, composition and properties of glass. The electrical conductivity of glass. Dielectric constant. Dielectric loss. Dielectric strength. Index.

Note: A reference book for laboratory workers interested in electrical measurements and dielectric theory. Insulation engineers will also find it useful. The present state of knowledge of the electrical properties of glass is summarized. Tables give the composition, the mechanical and thermal properties, and the dielectric data of various types of glass.

MINER, DOUGLAS F.

Insulation of electrical apparatus. New York: McGraw-Hill Book Company, Inc., 1941. 452 p. illus. 23 cm. \$5.00. 3817

Contents: Introduction. Dielectric phenomena. Theories of dielectric behavior. Factors affecting dielectric behavior. Insulating materials. Industrial motors and generators. Large rotating machines. Control apparatus. Transformers and reactors. Circuit-breaker principles. Circuit-breaker constructions. Transmission-line insulators. Lightning arresters. Capacitors. Heating appliances. Lamps and tubes. Meters, instruments, and relays. Insulation testing. High-voltage testing. High-voltage testing equipment.

Note: A key to insulation problems for the designer and user of electrical apparatus, correlating theory and design in a well-rounded treatment that discusses present knowledge of dielectric behavior, describes the problems encountered in insulating the major forms of electric power equipment and how they are solved, and shows what tests are of value in determining the performance of insulation.

WHITEHEAD, JOHN BOSWELL

Impregnated paper insulation; the inherent electrical properties. New York: John Wiley and Sons, Inc., 1935. 221 p. illus. 23 cm. (Monograph no. IV. National Research Council. Committee on Electrical Insulation) \$4.00. 3818

Contents: Impregnated paper as insulation. The electrical characteristics of dry paper. The general electrical properties of insulating oils. Impregnation—residual air and ionization. Impregnation—capillary properties of impregnated paper as related to those of its constituents. Dielectric strength and life. General conclusions as related to practice. Appendix. Index.

Note: This book gives an account of selected researches carried out in the School of Engineering of the Johns Hopkins University; those researches are selected which have the greatest bearing on present problems. At the end of each chapter conclusions are drawn on the matter treated. Besides a representative bibliography, the book includes an appendix which covers the predetermination of the A-C characteristics of dielectrics, validity and sufficiency of experimental method, parts of Von Schweidler's analysis, the method of three exponents, accuracy of the method, etc.

Communication Engineering

ALBERT, ARTHUR LEMUEL

Electrical communication. Second edition. New York: John Wiley & Sons, Inc., 1940. 534 p. illus. 23 cm. \$5.00. 3819

Contents: The history of electrical communication. Sound and acoustics. Speech and hearing. Electrical fundamentals of communication. Transmitters and microphones. Receivers and loud speakers. Exchange and toll service and systems. Telegraph systems. Telephone transmission theory. Networks and electric wave filters. Inductively loaded circuits. Inductive interference and plant protection. Electronics and vacuum tubes. Electronic applications in wire communication. Wireless communication. Index.

Note: An introduction to communication engineering, designed to provide a basic training in the fundamentals of the subject. In this edition the original approach has been retained. A descriptive discussion is included as well as the mathematical explanation of all important topics covered. Nearly one-third of the content has been entirely rewritten and the remainder carefully revised. The chief changes will be found in the chapters on sound and acoustics, speech and hearing, electronics and vacuum tubes, inductive interference and plant protection, electronic applications in wire communications (especially the sections on carriers and repeaters), and wireless communication. Excellent bibliographies are included at the ends of chapters.

ALBERT, ARTHUR LEMUEL

The electrical fundamentals of communication. New York: McGraw-Hill Book Company, Inc., 1942. 554 p. illus. 23 cm. \$3.50. 3820

Contents: The fundamentals of electronics. Direct current. Conductors, resistors, and insulators. Direct-current electric power and energy. Alternating currents. The magnetic field and inductance. The electric field and capacitance. Electric measuring instruments. Alternating-current circuits. Algebraic representation of alternating-current quantities. Electric networks. Bridge circuits. The transmission of electromagnetic waves. Fundamental principles of vacuum tubes. Vacuum tubes as circuit elements. Electroacoustics. Appendix: Natural trigonometric functions. Index.

Note: An introductory book for students and practical workers in communications. It presents the fundamental theories and applications upon which telegraphy, telephony and radio are based.

EVERITT, WILLIAM LITTELL

Communication engineering. Second edition. New York: McGraw-Hill Book Company, Inc., 1937. 727 p. illus. 23 cm. \$5.00. 3821

Contents: Introduction and classification of impedance elements: The function of networks. Network theorems. Networks using linear bilateral impedances: Resonance. The infinite line. Reflection. Filters. Coupled circuits. Impedance transformation. Equalizers. Bridge circuits. Inductive coordination. Networks using unilateral and non-linear impedances: Unilateral or control impedances. Modulation and de-modulation. Vacuum tube detectors. Class A audio frequency amplifiers. Class A radio frequency amplifiers. Radio frequency amplifiers for transmission (classes B and C). Oscillators. Coupling between electrical cir-

cuits and free space: Radiation. Coupling between electrical and mechanical circuits: Electromechanical coupling. Appendix. Index.

Note: A college textbook covering the fundamental theory of communication systems, designed for students of radio and telephone engineering as well as for electrical engineers in general who may desire a broad knowledge of the field without specializing. No attempt is made to treat specific applications, such as telephone switching systems or commercial radio broadcasting. The second edition contains new material covering the development of communications between 1932 and 1937, including a new treatment of non-linear distortion and new problems, while chapters on complex quantities and measurements have been deleted.

SLATER, JOHN CLARKE

Microwave transmission. New York: McGraw-Hill Book Company, Inc., 1942. 309 p. illus. 23 cm. (International series in physics; L. A. DuBridge, consulting editor) \$3.50. 3822

Contents: Transmission lines. Maxwell's equations, plane waves, and reflection. Rectangular wave guides. The general transmission line problem. Radiation from antennas. Directive devices for antennas. Coupling of coaxial lines and wave guides.

Note: For all interested in the problems of transmission through hollow pipes and coaxial lines, this book brings together the developments in the field and presents them in an understandable explanation of the distinctive characteristics of microwaves and a discussion of the use of Maxwell's equations as a means of handling the problems of transmission line design. Problems are treated both from the standpoint of conventional transmission lines and of Maxwell's equations.

WARE, LAWRENCE ALBERT, AND HENRY R. REED

Communication circuits. Second edition. New York: John Wiley & Sons, Inc., 1944. 330 p. illus. 23 cm. \$3.50. 3823

Contents: Introduction. Transmission-line parameters. Networks, T and π sections. Network theorems. The infinite or correctly terminated line. Infinite line—exact solution. General line—open- and short-circuit lines. Reflection losses. The power transmission line—efficiencies. Constant-K filters. M-derived and composite filters. Impedance transformation. Ultra-high-frequency transmission in wave guides—general. Ultra-high-frequency rectangular wave guides. Ultra-high-frequency cylindrical wave guides. Electromagnetic theory of coaxial lines. Transmission-line experiments. Appendix. Index.

Note: Treats the basic principles of communication transmission lines and their associated networks, covering all frequencies including the ultra-high. Particular emphasis is placed on ultra-high-frequencies, because of the importance of the use of microwaves. None of the material in the earlier edition has been omitted. New additions to the second edition include: a chapter on the physical aspects of the wave guide transmission; material on impedance matching; new material on the solution of circuits; new data on the theory of the rectangular and cylindrical wave guides. An appendix devoted to the development of Maxwell's equations, in the form in which they are most useful for the present treatment of wave guides and coaxial cables, is included.

Telephony

ALBERT, ARTHUR LEMUEL

Fundamentals of telephony. New York: McGraw-Hill Book Company, Inc., 1943. 374 p. illus. 21 cm. \$3.25. 3824

Contents: Direct-current theory. Alternating-current theory. Electric networks. Sound, speech, and hearing. Telephone transmitters. Telephone receivers. Telephone sets. Manual telephone systems. Dial telephone systems. Transmission over circuits with distributed constants. Transmission over circuits with lumped constants. Measurements in telephony. Inductive interference. Telephone repeaters and carrier systems.

Note: An elementary book for beginning students and telephone workers. Presents briefly the principles of electricity and acoustics upon which telephone practices are based. The basic electric theory is included for the benefit of those students who have not had extensive training in electricity.

MILLER, KEMPSTER BLANCHARD

Telephone theory and practice. New York: McGraw-Hill Book Company, Inc., 1930-33. 3 v. illus. 24 cm. \$5.00 each volume. 3825

Contents (abridged): Volume I, Theory and elements: Preface. Early history of the electric speaking telephone. The telephone system. The vibrations of sound. The sensation of sound. Voice currents. Vacuum tube theory. Magnetic materials. Wires for equipment use. Coils and electromagnets. Resistors. Condensers. Flexible cords. Joints and contacts. Index. Volume II, Manual switching and substation equipment: Preface. Talking apparatus. Signaling apparatus for subscribers' sets. Telephone symbols and circuit diagrams. Subscribers' sets. Individual and party lines. Component parts of manual switchboards. Non-multiple magneto switchboards. Current supply in common-battery exchanges. Non-multiple common-battery switchboards. General features of multiple switchboard practice. Multiple switchboards. Index. Volume III, Automatic switching and auxiliary equipment: Preface. The machine-switching idea. Control devices and numbering plans. The Strowger step-by-step system. The panel dial system. The rotary automatic telephone system. The all-relay automatic system. Power plants. Protective apparatus. Distributing frames. Private branch exchanges. Toll switching. Index.

Note: Intended as a textbook for the student and the beginner in telephone work and also as a general reference book. Discussion of theory is mainly non-mathematical and no knowledge of mathematics higher than simple algebra is required. The treatment is further intended to enable the telephone worker to obtain a perspective view of the relation of his job to the rest of the industry.

Electronics

ALBERT, ARTHUR LEMUEL

Fundamental electronics and vacuum tubes. New York: The Macmillan Company, 1938. 422 p. illus. 23 cm. (Engineering science series, edited by E. R. Hedrick) \$4.50. 3825a

Contents: Basic electronic theory. Emission of electrons. Thermionic cathodes. Two-electrode thermionic vacuum tubes. Three-electrode thermionic vacuum tubes. Multi-electrode thermionic vacuum tubes. Rectifiers. Vacuum-tube voltage amplifiers. Vacuum tube power amplifiers. Oscillators. Modulators. Demodulators. Photoelectric devices and circuits. Cathode-ray tubes and measuring devices. Index.

Note: A textbook designed for use in college and university courses.

CHAFFEE, EMORY LEON

Theory of thermionic vacuum tubes; fundamentals—amplifiers—detectors. New York: McGraw-Hill Book Company, Inc., 1933. 652 p. illus. 23 cm. (Electrical engineering texts) \$6.00. 3826

Contents (abridged): Introduction. Molecules, atoms, and electrons. Conduction of electricity. Emission of electrons. Nomenclature and letter symbols. Three-electrode tube or triode. Low-power amplifier. Regeneration with triodes. "Neutralization." Small-signal detection by a diode. Small-signal detection by triode. Experimental treatment of detection at high signal voltages. Tetrodes and pentodes. Appendixes: Theory of superimposed currents. Method of testing an audio transformer.

Note: A theoretical treatment of the fundamentals of thermionic emission and of the vacuum tube. Not only the general properties of the tube but its use as an amplifier and detector are treated in detail.

COCKRELL, WILLIAM D.

Industrial electronic control; a guide to the understanding of electronic control circuits for industrial uses. New York: McGraw-Hill Book Company, Inc., 1944. 247 p. illus. 21 cm. \$2.50. 3826a

Contents: Section I, Electron tubes: The vacuum rectifier. Gas-filled rectifiers. Special tube types. Grid-controlled vacuum tubes. Grid-controlled gas-filled tubes. The mechanical construction of tubes. Section II, Circuit components: Instruments and meters. Resistance and capacitance. Inductance. Transformers and miscellaneous components. Combinations of component elements. Section III, Basic electronic circuits: Rectifier circuits and filters. Amplifiers. Oscillator circuits, stabilization. Timing circuits and alternating-current switches and control. Phase-shift circuits. Section IV, Industrial electronic circuits: Elementary diagrams. Direct-current photoelectric and motor control circuits. Alternating-current relay and power circuits. Resistance welder controls and welder current regulating. Appendix. Nomenclature. Ohmic values of resistance and reactance. Standard curves. Rectifier wave shapes. Photoelectric phenomena.

Note: Designed to give the electrical engineer in industry a basic working knowledge of electronic control as a background for the effective selling, installing, and servicing of electronic equipment. It explains the fundamental facts of electron tube operation and the practical applications of tubes in basic circuits of industrial control apparatus and includes tables, charts, lists of symbols, etc., that provide direct and useful working information.

DOW, WILLIAM GOULD

Fundamentals of engineering electronics. New York: John Wiley & Sons, Inc., 1937. 604 p. illus. 23 cm. \$5.00. 3827

Contents: Part I, Electrons: Introduction. High-vacuum thermionic triodes. Potential distribution diagrams. The electrostatic field of a triode. Electron ballistics. Cathode rays. Space-charge flow. Triodes, tetrodes, pentodes. Thermionic cathodes. Work functions of homogeneous surfaces. Energy-level diagrams of metals. Distribution of random velocities of gas particles. Electrical effects of random motions. Amplifier circuit principles. Harmonics: Class B and push-pull amplifiers. Amplifier coupling; oscillators. Part II, Electrons, atoms, and radiation: Atomic energies. Energy levels for particular elements. Photoelectric emission and electromagnetic waves. Photo-sensitive devices. Electric arcs and glow discharges. Plasma boundary regions. Mercury-vapor rectifiers. Single-phase circuits containing rectifying elements. Index.

Note: In the preparation of the book the author has aimed to maintain a proper balance between two primary objectives, first to give readers a realistic and quantitatively usable conception of the principles that govern the internal behavior of electronic devices, and secondly to familiarize the reader with methods of circuit analysis customarily employed in connection with the most common engineering applications of electronic methods. In conformity with this the chief emphasis has been placed on internal operating principles, the major part of the text being devoted to a study of the effects of the use of various geometries and materials in electronic devices, and a relatively small part to circuit studies. An intensive study for engineers with sound background training.

FINK, DONALD G.

Engineering electronics. New York: McGraw-Hill Book Company, Inc., 1938. 358 p. illus. 23 cm. \$3.50. 3828

Contents: Electronics in engineering: a preliminary survey. Physical electronics: The fundamental properties of the electron. Emission, the production of free electrons. The control of free electrons in a vacuum. Electron currents in gases and vapors. Thermionic vacuum tubes. Gas-filled thermionic tubes. Photosensitive tubes and cells. Electronic sources of light. Specialized electron tubes. Elements of circuit theory as applied to electron tubes. Power transformation circuits. Electronic communication circuits. Industrial control and measurement circuits.

Note: A practical volume for engineers who wish to take up or review electronic principles and their application in typical engineering problems of tube use and circuit design. It covers the fundamentals of electron physics and electron tube structures, the engineering characteristics of a wide variety of tubes, and a demonstration of the application of tubes and circuits in problems of power transformation, electrical communication, and industrial control and measurement. There are chapter bibliographies. Answers to the problems are included.

GULLIKSEN, FINN HARRING, AND E. H. VEDDER
Industrial electronics. New York: John Wiley & Sons, Inc., 1935. 245 p. illus. 23 cm. \$3.50. 3829

Contents: Part I, Electronic tubes: Light-sensitive tubes and cells. High-vacuum tubes. Gas-filled tubes. Part II, Fundamental electronic circuits: Circuits for high-vacuum amplifiers. Circuits for grid-controlled gaseous tubes. Ignition circuits. Part III, Electronic instruments and control: Light-sensitive control devices. Indicating and control devices. Rectification and frequency conversion. The control of resistance welders. Theater and mobile lighting control. Miscellaneous applications. Electronic relays. Part IV, Electronic regulators: Fundamental principles of automatic regulator design. Voltage regulators. Speed regulation. Photoelectric register regulators. Process regulators. Temperature regulators. Index.

Note: This work describes most of the important types of industrial applications of electron devices at the time of its publication, with a detailed description of one equipment of each type. It is designed to show engineers how electron tubes can be used, and is also useful for students in courses on industrial electronic apparatus. References are given at the end of each chapter.

HENNEY, KEITH

Electron tubes in industry. Second edition. New York: McGraw-Hill Book Company, Inc., 1937. 539 p. illus. 23 cm. \$5.00. 3829a

Contents: Fundamentals of electronic-tube circuits. Thermionic tubes. Vacuum-tube amplifiers. Gaseous triodes. Light-sensitive tubes. Applications of light-sensitive tubes. Rectifiers, cathode-ray tubes, miscellaneous tubes and circuits. Index.

Note: The purpose of this college textbook is to acquaint industrial engineers, teachers, and students with the many applications of amplifiers, oscillators, phototubes, rectifiers, thyratrons, grid-glow tubes, and cathode-ray tubes to noncommunication industries. In the second edition new material covering developments between 1934 and 1937 has been added, and outmoded circuits have been replaced by those of more advanced design. Numerous short bibliographies are given in each chapter, arranged by subject.

KLOEFFLER, ROYCE GERALD

Principles of electronics. New York: John Wiley & Sons, Inc., 1942. 175 p. illus. 23 cm. \$2.50. 3830

Contents: Introduction. The electron. The atom. Electricity. Gaseous conduction. Electron emission. Two-electrode tube. The three-electrode tube. Multi-electrode tubes. Rectifying devices. Some physical theories. Photoelectric devices. Electronic applications and circuits. Index.

Note: Particularly valuable to the individual requiring a non-mathematical but basic practical knowledge of the theory, construction, and application of electronic tubes. Beginning with the discovery of the electron and the forces of attraction and repulsion of charged particles, the action taking place in electronic devices is carefully explained.

MALOFF, LOURY GREGORY, AND D. W. EPSTEIN

Electron optics in television, with theory and application of television cathode-ray tubes. New York: McGraw-Hill Book Company, Inc., 1938. 299 p. illus. 23 cm. \$3.50. 3830a

Contents: Introduction. Electron optics. Fundamental concepts. Electron emission. Analogy between electron optics and light. Motion of electrons in axially symmetric electrostatic fields. Electrostatic electron lenses. Electrostatic lenses of television cathode-ray tubes. Defects of electron-focusing system of TCR tubes. Magnetostatic focusing. Television cathode-ray tube. The electron gun. Deflection of electron beams. Luminescent screens for TCR tubes. Classifications, rating and characteristics of TCR tubes. Accessories. Vacuum practice.

Note: Develops the theory of electron optics and its most useful application—the television cathode-ray tube, emphasizing those phases of the subject with which the authors have had first-hand experience at the RCA Research Laboratories.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY. DEPARTMENT OF ELECTRICAL ENGINEERING

Applied electronics; a first course in electronics, electron tubes, and associated circuits, by members of the staff of the Department of Elec-

trical Engineering, Massachusetts Institute of Technology. New York: John Wiley & Sons, Inc., 1943. 772 p. illus. 23 cm. (*Its Principles of electrical engineering series*) \$6.50. 3831

Contents: Electron ballistics. Electron emission from metals. Electrical conduction through vacuum, gases, and vapors. High-vacuum electron tubes. Gas tubes, single-phase rectifier circuits. Polyphase rectifiers. Vacuum tubes as linear circuit elements; Class A single-stage amplifiers. Cascade amplifiers; Class A amplifiers with operation extending beyond the linear range of the tube characteristic curves; Class AB, Class B, and Class C amplifiers. Vacuum-tube oscillators. Modulation and demodulation or detection. Appendixes: Physical constants useful in electronics. Units; dimensions, standards. Bibliography. Index.

Note: For those engineers with little knowledge of electronics, the book presents an understandable discussion starting from elementary facts and principles. For those with a fair but inadequate knowledge, its foundational treatment and practical illustrations and problems will provide a useful means for further study and reference. Physical processes are treated in detail as a basis for a thorough understanding of the characteristics, ratings, and applicability of electronic devices. Of particular interest is the inclusion of recent material on electron ballistics, electron optics, thermionic emission, limitation of current by space charge, and the electro-kinetic behavior of gases. The more important electron tubes, both vacuum and gas-filled types, are presented comprehensively with a full discussion of principles. Special tubes such as cathode-ray oscilloscopes, electron multipliers, electron microscopes, television tubes, ultra-high frequency tubes, phototubes, thyratrons, cold-cathode tubes, ignitrons, and stroboscopes are also included. The principles of circuit design involved in the utilization of both the linear and nonlinear properties of the devices are stressed. Mathematical and graphical methods and vector diagrams are used freely as tools for analysis, but are accompanied by clear physical interpretations.

MILLS, JOHN

Electronics; today and tomorrow. New York: D. Van Nostrand Company, Inc., 1944. 178 p. illus. 20 cm. \$2.25. 3832

Contents: Introduction—electrons. New sciences for old. The lightning of nature. Man-made lightning. Part I, Electron tubes: Hot cathodes. Diodes and rectifiers. De Forest's audion. The vacuum tube. Odes to tetra and penta. Oscillators at work. Electricity from light. Gas-filled tubes. Part II, Electronic devices: Electron guns and television. Electron optics and photography. The ultra-high frequency generators. Cyclotrons. Index.

Note: This book explains, in simple non-technical language, the properties of electrons, including those generally-known properties which make electrons so useful in radio broadcasting and radio reception, and also those properties, discovered more recently, which appear at higher oscillating frequencies. The author shows how new electronic apparatus, based on these newly-discovered properties, has made it possible to install many more stations in a given area, to improve the methods of television transmission and reception, and to open new possibilities, in war and peace, throughout communication engineering.

MORECROFT, JOHN HAROLD

Electron tubes and their application. New York: John Wiley & Sons, Inc., 1933. 458 p. illus. 23 cm. \$4.50. 3832a

Contents: Constitution of matter. Removal of electrons from matter. Space charge and its effect. Hot-cathode vacuum tubes. Hot-cathode gas-filled tubes. Photoelectric tubes. Special electronic devices. Uses of valves. Triode as power converter. Triode as audio-frequency amplifier. Triode as radio-frequency amplifier. Triode as oscillator. Triode as modulator. Triode as detector or demodulator. Uses of gas-filled three-electrode tube. Electron tube as an electric meter. Special uses of electron devices. Index.

Note: The material in this book on the design, construction, performance, and applications of electron tubes is intended for advanced college students and practicing engineers. An abundance of data is presented throughout the book in both graphical and tabular form.

PREISMAN, ALBERT

Graphical constructions for vacuum tube circuits. New York: McGraw-Hill Book Company, Inc., 1943. 237 p. illus. 21 cm. (*Radio communi-*

cation series; Beverly Dudley, consulting editor) \$2.75. 3833

Contents: Nonlinear circuit problem. Thermionic vacuum tubes. Elementary graphical constructions. Reactive loads. Balanced amplifiers. Detection. Miscellaneous graphical constructions. Index.

Note: An explanation of the geometric manipulations used in the solution of nonlinear circuit problems, particularly those involving vacuum tubes. Much of the material is a revision and expansion of articles which have appeared in the *R. C. A. review*, and in *Communications*. The bibliographies at the end of each chapter are limited to articles read by the author and which are available to the American public.

RADIO CORPORATION OF AMERICA. R. C. A. VICTOR DIVISION

Tube handbook, all types. Harrison, N.J.: Radio Corporation of America, 1943. 4 v. in 2. illus. 18 cm. Price, ? 3833a

Note: This work is designed to furnish engineering information about electronic tubes manufactured by the Radio Corporation of America. It is published in looseleaf format, and new sheets are issued frequently to supersede older ones. The information given includes dimensions, base diagrams, ratings, operating conditions, and usually a graph showing plate characteristics.

SCHULZ, ELMER HARRY, AND L. T. ANDERSON

Experiments in electronics and communication engineering, covering basic circuit theory, electronics, communication networks, radio and ultra-high-frequency techniques. New York: Harper and Brothers, 1943. 381 p. illus. 24 cm. \$3.00. 3834

Contents: Laboratory technique. Laboratory equipment. D-C circuits. A-C circuits. Network theorems and four-terminal networks. Electron tubes. Cathode-ray tubes and circuits. Power supplies. Amplifiers. Oscillators. Modulation and detection. Radio receivers. Radio transmitters. Transmission lines, wave guides, radiation. Index.

Note: This volume includes 108 experiments. They range from simple direct-current measurements to complete video amplifiers, radio receivers, radio transmitters, antenna systems, micro wave equipment, etc. Complete instructions and explanations are given for each.

Radio

ALMSTEAD, FRANCIS E., AND F. R. L. TUTHILL

Radio materiel guide. New York: McGraw-Hill Book Company, Inc., 1943. 242 p. illus. 19 cm. \$2.00. 3834a

Contents: Mathematics necessary for elementary radio. Common radio practices. The nature and the control of electrical energy. The study of vacuum tubes. The study of electrical circuits. The study of electrical energy sources: the battery. The study of electrical energy sources: motors and generators. The study of electrical energy sources: vacuum-tube rectifiers. The study of transmitter circuits. Transmission of intelligence through space. The study of receiver circuits. The study of measuring instruments. The study of sonic wave behavior. Resistor and condenser color code chart. Transformer color code charts. Measuring units chart. Frequency-wave-length chart. Natural trigonometric functions chart. Symbols.

Note: This book is a concise treatment of the fundamentals required by a radio operator. The material is understandable to individuals who have had no previous technical experience. The book has been used to great advantage during the war by Army and Navy communication officers, and in Armed Force schools for training radio and signal-corps men. The subject matter can be covered in a course of 16 weeks, or the book can be used for quick reference.

AMERICAN RADIO RELAY LEAGUE, INC.

The radio amateur's handbook. By the Headquarters Staff of the American Radio Relay

League. West Hartford, Conn.: The American Radio Relay League, 1944. 480 p. illus. 24 cm. Paper, \$1.00. 3835

Contents: Introduction: Amateur radio. Principles and design: Electrical and radio fundamentals. Vacuum tubes. Radio-frequency power generation. Radiotelephony. Keying. Receiver principles and design. Power supplies. Wave propagation. Antenna systems. Construction and data: Receiver construction. Transmitter construction. Modulation equipment. V.H.F. receivers. V.H.F. transmitters and transceivers. The war emergency radio service. Antenna construction. Carrier-current communication. Measurements and measuring equipment. Workshop practice. Tube characteristics and miscellaneous data. Operating and traffic handling: Radio operating practice. Index.

Note: This publication is issued at approximately yearly intervals and is intended to supply the latest available practical information on short-wave radio for amateurs without too much classroom theory. In the present edition a larger page format is employed and there is a rearrangement of material into two main divisions: theory and practical equipment. There is also new material on carrier-current communications, war emergency radio service, recent types of vacuum tubes, and new illustrations. Bibliographies follow each chapter.

BRAINERD, JOHN GRIST, AND OTHERS

Ultra-high-frequency techniques, by J. G. Brainerd (editor), Glenn Koehler, Herbert J. Reich, and L. F. Woodruff. New York: D. Van Nostrand Company, Inc., 1942. 534 p. illus. 24 cm. \$4.50. 3836

Contents: Introduction. Linear circuit analysis. Fundamentals of tubes, power supplies. Amplification. Trigger circuits (gates), pulse-sharpening circuits and oscillators. Cathode-ray tubes and circuits. Modulation. Demodulation (detection). Radio receivers. Transmitters. Ultra-high frequency generators. Transmission lines. Radiation. Propagation. Hollow wave guides. Laboratory manual. Index.

Note: This is a textbook for advanced courses in engineering colleges on the principles and mathematical analysis of ultra-high frequency radiations, and the equipment used in their generation, transmission, and reception. Courses based upon this book are taken by students preparing to do work with military equipment of this type, and also for peace time work in radio, television and electrical engineering. Included are explanations of certain related mathematical and electrical topics which are required in order to understand the development of the principles of the subject. There is also a series of experiments designed to show the essential phenomena and relationships.

BROWN, HUGH ALEXANDER

Radio-frequency electrical measurements; a guide for radio engineering laboratory instruction. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 384 p. illus. 23 cm. \$4.00. 3837

Contents: Measurement of circuit constants. Measurement of frequency. Antenna measurements. Electromagnetic-wave measurements. Measurement of electron-tube coefficients and amplifier performance. Electromotive force, current, power. Measurement of wave form. Modulation, receiver and Piezo-electric crystal measurements. Index.

Note: This text is intended for the student who has a knowledge of alternating-current phenomena and circuits equivalent to that usually acquired in the fourth year of the college curriculum in electrical engineering. Knowledge of the elementary principles of radio communication is also assumed. The book is further intended to serve as a reference manual for the radio engineer and the experienced amateur. The second edition incorporates certain changes in standard methods as well as in the more important new laboratory techniques.

DENTON, CLIFFORD E.

Short wave radio handbook. New York: Murray Hill Books, Inc., 1934. 127 p. illus. 21 cm. Paper, \$1.00. 3838

Contents (abridged): Short waves in general. Earphones, magnetic speakers, dynamic speakers. Turns ratio of output transformers. Power sensitivity of output tubes. Typical audio-

frequency amplifiers. Detector circuits and short wave receivers. Detector tube performance curves. Resistance and impedance coupling. Transformer and direct coupling. Tuning coils and condensers. Antennas. Power supply units. An i.f. oscillator. A 4-tube short-wave receiver. Miscellaneous hints. Tube chart.

Note: A brief reference guide for the amateur, emphasizing the practical aspects of short-wave transmitter and receiver construction and operation. Presents an outline of the electrical theory together with numerous schematic circuits, but no attempt is made to treat the mathematical or physical theories involved. A six-page tube chart giving operating conditions and characteristics is included.

DREW, CHARLES EDWARD

How to pass radio license examinations. Second edition. New York: John Wiley & Sons, Inc., 1944. 320 p. illus. 25 cm. \$3.00. 3838a

Contents: Basic radio laws. Basic theory and practice. Radio telephone. Advanced radio telephone. Radio telegraph. Advanced radio-telegraphy. Appendix: Rules governing commercial radio operators. Extracts from radio laws. Q code and abbreviations. Miscellaneous.

Note: Questions and answers on radio laws, basic radio theory, commercial radio telephone, and radio telegraph. This revision of the 1938 edition contains new material on modulation, oscillators, classes of amplifiers, and rectifier power supplies.

EMERY, WILLIS LAURENS

Ultra-high-frequency radio engineering. New York: Macmillan Co., 1944. 295 p. illus. 22 cm. \$3.25. 3839

Contents (abridged): Voltage-regulated power supplies. Electronic switching and synchronization. Cathode-ray tubes and sweep circuits. Amplifiers. Square-wave testing and transient response. Ultra-high-frequency circuit elements. Oscillators. Modulation and detection. Radiation. Wave guides. Appendix. Index.

Note: The basic principles of ultra-high-frequency engineering are given in this textbook for electrical engineering students. Emphasis is placed on component parts of ultra-high-frequency systems rather than on the systems themselves. Laboratory experiments are included and coordinated with the text. Bibliographical references are given at the end of each chapter.

FEDERAL TELEPHONE AND RADIO CORPORATION

Reference data for radio engineers. New York: Federal Telephone and Radio Corporation, 1943. 200 p. illus. 22 cm. \$1.00. 3840

Contents: General engineering tables. Engineering and material data. Audio and radio design—general. Rectifiers. Vacuum tubes and amplifiers. Telephone transmission. Radio frequency transmission lines. Radio propagation and antennas. Noise and noise measurement. Non-sinusoidal waveforms. Dimensional expressions. Greek alphabet. Mathematical formulas and general information. Mathematical tables.

Note: Compiled under the direction of the Federal Telephone and Radio Laboratories in collaboration with other associate companies of the International Telephone and Telegraph Corporation, this handbook of radio reference data provides for the requirements of the practical technician as well as the engineer, although the emphasis is upon theory and mathematical analysis. The material is presented in tabular form and illustrated by numerous graphs and curves showing circuit and tube characteristics. The mathematical tables include natural and Briggian logarithms, trigonometric, exponential, hyperbolic, and Bessel functions.

FREY, AUSTIN ROGERS

Fundamentals of radio communications. New York: Longmans, Green and Co., 1944. 393 p. illus. 21 cm. \$4.00. 3841

Contents (abridged): Resonant circuits. Thermionic emission and diodes. Grid-controlled vacuum tubes. Voltage amplifiers. Power amplifiers. Oscillators. Modulation and demodulation. R-f transmission lines. Radiation. Appendix: Bessel functions. Index.

Note: This book presents the fundamental theoretical principles of radio communications in concise form. The aim has been to familiarize the student thoroughly with the terminology of radio communications, the more important types of circuits, and the methods by which vacuum tubes can be used to generate,

control, and detect the high-frequency currents which are employed. Intended for serious students of college grade, the book gives detailed mathematical treatment of certain phases of the method of analysis and the solution of circuit problems. A working knowledge of college algebra is a requisite. There are a number of bibliographic references in footnotes.

GHIRARDI, ALFRED A.

Modern radio servicing. (A revision and enlargement of the "Radio servicing course") A practical text on the theory, construction and use of modern radio service equipment and the rapid and systematic methods of radio servicing in all its branches. 706 illustrations. New York: Murray Hill Books, Inc., 1935. 1300 p. illus. 21 cm. \$5.00. 3842

Contents (abridged): Milliammeters, ammeters & voltmeters. How to construct ohmmeters. Typical commercial ohmmeters. Condenser testers and capacity meters. Output meters and V.T. voltmeters. How to construct a modern tube checker. The voltage-current set analyzer. How to construct a complete set analyzer. Typical commercial set analyzers. The service test oscillator. How to construct and calibrate a test oscillator. Typical commercial test oscillators. Preliminary tests for trouble. Peculiarities of AVC and QAVC circuits. Receiver analysis by voltage-current tests. Receiver analysis by resistance tests. Obscure troubles not revealed by analyzers. Aligning and neutralizing T-R-F receivers. Aligning and neutralizing superheterodyne receivers. Repairing individual radio components. Installing and servicing auto-radio receivers. Servicing all-wave receivers. Installing and servicing marine radio receivers. High-fidelity receiver problems. How to sell your service. Appendix: Receiving tube characteristics and basing diagram charts. Index.

Note: A self-study training course in practical repair of all types of home and vehicular radio receivers. Thorough explanation is given of radio test instruments, troubleshooting procedure, circuit analysis, testing and repair of all component parts of radio equipment, installation, adjustments, and maintenance. It also includes a chapter on how to organize and operate a radio repair business. Although this edition is described as a revision and enlargement of the *Radio servicing course*, it is essentially a new book.

GHIRARDI, ALFRED A.

Radio physics course; an elementary text book on electricity and radio. Second edition, revised and enlarged. New York: Murray Hill Books, Inc., 1931. 974 p. illus. 23 cm. \$5.00. 3843

Contents (abridged): Radio broadcasting system. Electron theory, electric current. Electrical units, Ohm's law, resistance. Electrical circuits, batteries, Magnetism. Electromagnetism. Electromagnetic induction. Inductance and inductors. Capacitance and condensers. Alternating current circuits. Electric filters. Electrical measuring instruments. Electromagnetic radiations. Radio transmission. The receiving station, detection with crystals. Vacuum tube characteristics. Construction features of vacuum tubes. Vacuum tube detector and amplifier action. Radio frequency amplification. Superheterodyne receivers. Design of R. F. amplifiers and tuning coils. Audio amplification. Loud speakers. The battery operated receiver. The power supply unit. Electric receivers. Automobile and aircraft receivers. Phonograph pickups and sound amplifier systems. Short wave reception. Vacuum tube applications and photoelectric cells. Television. The antenna and ground. Testing and servicing. Sound motion pictures. Appendixes. Index.

Note: A book which can be used for home study or as a text for radio courses in technical high schools and trade schools. It provides practical instruction in the working of radio receivers, sound amplifier equipment, photoelectric cells and devices, television equipment, and sound motion pictures. In this edition, the work has been revised to cover new developments. Numerous changes have been made in the chapters on television and on electrical courses for radio students.

GHIRARDI, ALFRED A.

Radio troubleshooter's handbook; companion book to "Modern radio servicing" by Alfred A. Ghirardi. Third revised, enlarged edition. New

York: Murray Hill Books, Inc., 1943. 744 p. illus. 28 cm. \$5.00. 3844

Contents (abridged): "Case histories" of common trouble symptoms and remedies for 4,820 models of 202 makes of "home" and "auto-radio" receivers and record changers. Electrical wiring diagrams of 88 automobiles. Receiving tubes. Special-purpose tubes. Transmitting tubes. Cathode ray tubes. Modernizing old receivers by substituting newer types of tubes. Tube testers. Reactance chart. Power transformer design chart. Wavelength frequency. Directory of manufacturers of radio accessories and parts. Index.

Note: The repair and servicing of home, portable, and auto-radio receivers, automatic record changers, and instantaneous recorders of all types are covered. In this third edition several sections of new material have been added, and concise texts have been introduced to explain the use of the data charts. Of special value is the revised section covering tube characteristics and basing diagram charts.

GRAMMER, GEORGE

A course in radio fundamentals; study assignments, experiments and examination questions, based on The radio amateur's handbook. West Hartford, Conn.: The American Radio Relay League, Inc., 1942. 103 p. illus. 24 cm. (Radio amateur's library. Publication no. 19) Paper, \$0.50. 3845

Contents: Introduction. Electricity and magnetism. Ohm's law for D.C. and A.C. Resonant circuits. Vacuum-tube fundamentals. Radio-frequency power generation. Modulation. Receivers. Antennas. Answers. Course outline.

Note: This volume is intended to serve the purpose of a self-study guide, examination book, and laboratory manual for the radio amateur who has little or no formal training in the fundamentals of radio communication. The text is based largely on chapters 2 to 10 inclusive of *The radio amateur's handbook* (see Index). Emphasis is on the principle of learning by doing and the material is adaptable for use in wartime radio courses. Problems and assignments as well as practical experiments are also included.

HARPER, AUGUSTUS EVERDELL, COMPILER

Rhombic antenna design. New York: D. Van Nostrand Company, Inc., 1941. 111 p. illus. 28 cm. \$4.00. 3846

Contents: General discussion of directional antennas. Antenna gain. Antenna location. Horizontal orientation. Vertical angles of arrival and departure. Properties of rhombic antennas. Effect of ground plane. Directivity equations. Tabulated functions for directional computations. Typical directional characteristics. Measurement and computation of antenna gains. Multiple wire and twin antenna types. Measurement and significance of terminal impedance. Transmitting antennas. Receiving antennas. Maintenance provisions. Lightning protections. Construction. Tables. Bibliography. Index. Construction drawings.

Note: This book explains the essential factors in the design and construction of the rhombic antenna. It includes an introductory discussion of directional radio transmission, followed by a description of horizontal rhombic antenna design methods and mechanical construction practices. Tabulated and graphical functions found useful in antenna development work have been included to expedite computation.

HENNEY, KEITH

Principles of radio. Fourth edition. New York: John Wiley and Sons, Inc., 1942. 549 p. illus. 20 cm. \$3.50. 3847

Contents: Fundamentals. Ohm's law. Production of current. Inductance. Capacity. Properties of alternating-current circuits. Resonance. Properties of coils and condensers. The vacuum tube. The tube as an amplifier. Audio amplifiers. The design of audio amplifiers. Radio-frequency amplifiers. Detection. Receiving systems. Rectifiers and power supply apparatus. Oscillators, transmitters, etc. Antennas, transmission. Facsimile and television transmission. Index.

Note: An elementary textbook intended for use in trade schools, and for the student or general reader with little or no background in radio. It covers both theory and practice and requires only a

basic knowledge of arithmetic and algebra. In this edition recent developments have been introduced, and new problems have been added to those found in the previous edition.

HENNEY, KEITH, EDITOR

The radio engineering handbook, prepared by a staff of twenty-three specialists, Keith Henney, editor-in-chief. Third edition. New York: McGraw-Hill Book Company, Inc., 1941. 945 p. illus. 18 cm. \$5.00. 3848

Contents: Mathematical and electrical tables. Electric and magnetic circuits, by E. A. Uehling. Resistance, by Jesse Marsten. Inductance, by Gomer L. Davies. Capacitance, by E. L. Hall. Combined circuits of L, C, and R, by W. F. Lanterman. Electrical measurements, by R. F. Field and John F. Miller. Vacuum tubes, by J. M. Stinchfield. Vacuum-tube oscillators, by Robert I. Sarbacher. Modulation and detection, by L. F. Curtis. Audio-frequency amplifiers, by Glenn Koehler. Radio-frequency amplifiers, by R. S. Glasgow. Receiving systems, by G. L. Beers. Power supply systems, by R. C. Hitchcock. High-frequency transmission and reception, by Dale Pollack. Code transmission and reception, by John B. Moore. Aircraft radio, by Harry Diamond. Antennas, by Edmund A. Laport. Television, by Donald G. Fink. Facsimile, by R. E. Mathes. Radio broadcasting, by Carl G. Dietsch. Loudspeakers and room acoustics, by Hugh S. Knowles. Index.

Note: A reference handbook for students and practicing engineers covering the fundamentals of radio broadcasting and reception, with chapters on television, facsimile systems, electronics, and aircraft navigation. Tables on design data and operating characteristics of various types of equipment are also included. The third edition contains new material covering the progress in radio technique from 1925 to 1941.

HICKS, HERBERT J.

Principles and practice of radio servicing. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 391 p. illus. 23 cm. \$3.50. 3849

Contents: Fundamentals of magnetism and electricity. Fundamentals of radio. Radio tubes. Test equipment. Theory of radio-frequency amplifiers. Theory of audio-frequency amplifiers. Power supplies. Systems of demodulation or detection. Volume, tone, and frequency control. Loud speakers. Antennas and the elimination of man-made static. Superheterodynes. Frequency-modulated receivers. Servicing radio receivers. Public address systems. The business side of radio servicing. Appendix. Index.

Note: A textbook for radio servicemen intended primarily for self-study but which may be employed as a text in vocational school courses or in schools for motion picture operators. Instructions are given for performing all the more complicated servicing procedures, and test equipment and design features are discussed at length. A chapter is included to aid the serviceman in getting and retaining business. The second edition has added new material such as frequency modulation and new types of antennas as well as new radio receiver circuits and models.

HOAG, J. BARTON

Basic radio; the essentials of electron tubes and their circuits. New York: D. Van Nostrand Company, Inc., 1942. 379 p. illus. 22 cm. \$3.25. 3850

Contents: The electron. Metallic conduction. Capacitance and inductance. Alternating currents. A.C. circuits. Resonant circuits. Coupled circuits. Radiation. Propagation of radio waves. High-vacuum diodes. Some diode rectifiers. High-vacuum triodes. Some simple amplifiers. Some simple oscillators. Some high-vacuum multielectrode tubes. The principle of modulation. The principle of detection. Gas-filled tubes. Operation of gas-filled tubes. Photoelectric cells. Cathode ray tubes. The operation of oscilloscopes. Class A, B and C amplifiers. Direct current amplifiers. A. F. amplifiers. Feedback amplifiers. R. F. and I. F. amplifiers. The modulation of R. F. amplifiers. Further discussion of oscillators. Some special circuits. Transmitters. Receivers. Frequency modulation. Direction finders. Long lines. Short lines. U.H.F. transmitters and receivers. Microwaves. Problems and questions.

Note: This elementary textbook explains the principles of radio from the standpoint of the various types of vacuum tubes and the circuits in which they are installed. The tubes are arranged in progressive order, beginning with the simplest diode tube.

The explanation of each tube and its circuits is followed directly by applications that illustrate the essential characteristics. The important formulas are given, and are used to solve, by arithmetical methods, a large number of practical problems. Applications are used throughout the book to illustrate the essential characteristics of the various tubes and circuits, which include those used in the radio industry and in other applications of electronics in television, in manufacturing industries, and in special communication problems.

HUND, AUGUST

Frequency modulation. New York: McGraw-Hill Book Company, Inc., 1942. 375 p. illus. 23 cm. (Radio communication series. Beverly Dudley, consulting editor) \$4.00. 3851

Contents: Fundamental relations and features in frequency-modulated, phase-modulated, and amplitude-modulated systems. Auxiliary apparatus employed in FM systems. Transmitters for frequency modulation. Receivers for frequency-modulated currents. Transmitter and receiver aerials.

Note: This book for engineers and advanced students gives a critical engineering treatment of all phases of frequency modulation, from basic principles to the design of commercial apparatus. The practical applications follow the best engineering practice. Phenomena and features in frequency modulation are described in comparison with customary amplitude modulation and in comparison with phase modulation.

JORDAN, EDWARD CONRAD, AND OTHERS

Fundamentals of radio, by Edward C. Jordan, Paul H. Nelson, William Carl Osterbrock, Fred H. Pumphrey, and Lynne C. Smeby. Editor, W. L. Everitt. New York: Prentice-Hall, Inc., 1942. 400 p. illus. 23 cm. \$3.75. 3852

Contents: Mathematics of radio. D.C. circuits—A.C. circuits. Electronic principles. Rectified power supplies. Sound and its electrical transmission. Audio amplifiers—vacuum tube instruments. Electromagnetic waves. Transmission of signals by radio. Radio frequency amplifiers and detectors. Amplitude modulation radio transmitters. Amplitude modulation radio receivers. Frequency modulation. Radio wave propagation. Radio antennas. Index.

Note: This work presents the basic material required for all types of radio work, both civil and military. The primary aim of the book is to make clear to the beginning student the functioning of a complete radio system and at the same time to lay the foundation for more advanced study of the subject. The reader needs only an elementary knowledge of algebra, which is reviewed briefly in the first chapter. There is a brief discussion on alternating and direct current circuits which may be omitted in a beginning course. The text is suitable for rapid training programs and for self-instruction.

MANLY, HAROLD PHILLIPS, AND L. O. GORDER

Drake's cyclopedia of radio and electronics; a practical reference book; radio transmission and reception, sound pictures, public address, photocells, television, short wave. Tenth edition. Chicago: F. J. Drake & Co., 1942. 937 p. illus. 23 cm. \$5.00. 3853

Note: A summary of practical knowledge in the field of radio and electronics. The topics are arranged alphabetically as in a dictionary, and the work is intended as a reference guide for students of radio and television, radio repairmen, and dealers in radio and television apparatus. The treatment is aimed at clarification of the fundamentals of each subject rather than extensive discussion of theory. The tenth edition contains new material on recent developments in the field.

MANLY, HAROLD PHILLIPS

Drake's electrical and radio dictionary. Chicago: F. J. Drake & Co., 1942. 300 p. illus. 22 cm. \$2.50. 3854

Note: Much of the material in this brief dictionary is covered in greater detail in Manly's *Drake's Cyclopedia of radio and electronics*, Chicago, 1942 (see above), although the present

work contains some electrical terms not included in the former volume. The definitions are brief. No knowledge of theory is assumed and the book is designed for the practical worker and beginning student.

MARCUS, ABRAHAM, AND WILLIAM MARCUS

Elements of radio. Prepared under the editorship of Ralph E. Horton. New York: Prentice-Hall, Inc., 1943. 699 p. illus. 23 cm. \$4.00. 3855

Contents (abridged): History of communication. Wave motion. A simple radio receiving set. Aerial-ground system. The tuner, reproducer, and detector. Wave form. Antenna coupler. Electron flow in the crystal detector and phones. The diode and triode. Audio-frequency amplifier. A.C.-D.C. power supply. Dynamic speaker. Radio frequency amplifier. Volume and tone control. Superheterodyne receiver. Types of vacuum tubes. Radio direction finders. Direct current. Magnetism motors and measuring instruments. Alternating currents. Inductance, inductive reactance and impedance. Capacitance. Resonant circuits. Antennas for transmitters. Vacuum tube oscillators and amplifiers. Transmitters. Cathode-ray tube. Appendix. Index.

Note: A simplified text intended primarily for self-instruction by beginners. Considerable material is included which is not usually found in elementary books in this field.

NILSON, ARTHUR REINHOLD, AND J. L. HORNUNG

Practical radio communication; principles, systems, equipment, operation, including very high and ultra-high frequencies and frequency modulation. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 927 p. illus. 23 cm. \$6.00. 3856

Contents: Preface to the second edition. Preface to the first edition. Abbreviations. Radio symbols. Direct-current electricity and magnetism. Alternating-current electricity. Introduction to radio tubes and circuits. Transmitting-circuit principles. Receiving-circuit principles. Electronic power supplies. Antennas and wave propagation. Frequency modulation. Aviation radio communication. Broadcast studio. Broadcast control room. Broadcast AM transmitters. Marine radio transmitters. Marine radio receivers. Marine automatic radio alarms. Marine radio direction finders. Motors and generators. Storage batteries. Appendices. Index.

Note: Provides radio school and home study material for prospective and experienced radio operators of all classes. Divided into four parts—radio principles—aviation radio—broadcasting—marine radio—it covers the principles, radio equipment, and power apparatus as applied to the three branches of radio. The second edition contains new material on such subjects as high efficiency r.f. amplifiers, receiver circuit design, and the cathode-ray oscilloscope, as well as four new chapters on marine radio.

NILSON, ARTHUR REINHOLD, AND J. L. HORNUNG

Radio operating questions and answers. Seventh edition. New York: McGraw-Hill Book Company, Inc., 1940. 415 p. illus. 20 cm. \$2.50. 3857

Contents: Basic radio laws. Basic theory and practice. Radiotelephone. Advanced radiotelephony. Radiotelegraph. Advanced radiotelegraphy. Appendices: Operating abbreviations, etc. Rules governing commercial radio operators. Extracts from radio laws.

Note: A well-known book in the United States for persons preparing to take radio operator license examinations. It gives nearly 1,300 questions on radio communication—theory, apparatus, circuits, laws and regulations, etc.—together with full answers for review and study. Designed to help both the beginner and the experienced operator seeking advancement to check their training and knowledge and to focus on the key points of theory and practice as covered in government license examinations. This edition was revised in accordance with new government procedure and requirements for examinations.

SARBACHER, ROBERT IRVING, AND WILLIAM A. EDSON

Hyper and ultrahigh frequency engineering.

New York: John Wiley & Sons, Inc., 1943. 644 p. illus. 22 cm. \$5.50. 3858

Contents: Electrostatics and magnetostatics. The electromagnetic equations. Maxwell's equations. Reflection and refraction of plane waves. Parallel plane wave guides. Rectangular wave guides. Cylindrical wave guides. Wave guide experimental apparatus. Transmission line theory. Cavity resonators. Radiation from horns and reflectors. The behavior of vacuum tubes at high frequencies. Amplifiers. The negative-grid oscillator. The positive-grid or retarding-field oscillator. The magnetron. Tubes employing velocity modulation. Appendices. Bibliography. Index. Table of symbols.

Note: This advanced book presents those fundamentals essential for an understanding of new communications developments, together with recent UHF engineering data. Specifically, the wide range of topics includes an introduction to mathematical and physical concepts necessary for a comprehensive understanding of micro-wave and ultra short wave transmission; elementary electromagnetic field theory, both static and dynamic; the derivation and application of field equations; a discussion of the performance of transmission lines both of conventional and hollow form, in terms of circuit and field theory; operation of the more important forms of hyper-frequency generators. Charts, diagrams, and illustrations aid in clarifying obscure points. Practical problems, not requiring advanced mathematical methods for solution, apply and review the technical data covered in each chapter.

SIMON, LEWIS S.

Radio service trade kinks. New York: McGraw-Hill Book Company, Inc., 1939. 269 p. illus. 28 cm. \$3.00. 3859

Note: The correction of uncommon troubles peculiar to 96 individual makes of American home and automobile receiving sets is noted briefly. The names of the 96 models covered are arranged alphabetically. The book is not a comprehensive work on radio servicing, but the special information it gives is useful as a supplement to standard and more general books on radio repairing.

SLURZBERG, MORRIS, AND WILLIAM OSTERHELD

Electrical essentials of radio. New York: McGraw-Hill Book Company, Inc., 1944. 529 p. illus. 21 cm. (A McGraw-Hill practical manual) \$4.00. 3860

Contents: Communication. Basic theory of electricity. Batteries. Electric circuits. Magnetism. Meters. Electrical power apparatus. Inductance. Capacitance. Alternating current circuits. Resonance. Basic radio circuits. Appendixes: Symbols. Symbols and abbreviations used in electricity and radio. Formulas commonly used in electricity and radio. Table of specific resistance and temperature coefficient of various metals at 20 deg. C. Bare copper wire tables. Table of dielectric constant (K) and dielectric strength (volts per 0.0001 inch) of various metals. Standard color coding for resistors. Standard color coding for mica capacitors. Standard color code for transformer leads. Trigonometry. Sine and cosine tables. Use of sine and cosine tables for angles greater than 90 deg.

Note: A simple introduction to electrical and radio theory for radio students and radiomen. It provides the working knowledge of electrical fundamentals needed to handle any type of radio set, test equipment, or electronic device. No previous knowledge of mathematics is required except simple arithmetic. Scores of photographs show the purpose and use of commercial radio instruments and parts. All important radio terms are defined, and 92 commonly used symbols in circuit diagrams are explained and illustrated. The 12 appendixes contain reference data.

STERLING, GEORGE E.

The radio manual; for radio engineers, inspectors, students, operators and radio fans. Third edition. New York: D. Van Nostrand Company, Inc., 1938. 1120 p. illus. 20 cm. \$6.00. 3861

Contents (abridged): Elementary electricity and magnetism. Storage batteries and charging circuits. Vacuum tube amplifiers and oscillators. Modulation systems, analysis and apparatus. Studio and control room apparatus and operating technique. Radio and audio frequency measurements and frequency monitors. Antenna resistance and field strength measurements. Marine

radiotelegraph transmitters and receivers. Transport aircraft and ground station transmitters and receivers. Marine radio direction finders (radio compass). United States auto-alarms. Police transmitters and receivers (ultra-high frequency). Extracts from the radio provisions of the Communications act of 1934 as amended. General radio regulations of the International Convention of Cairo (effective January 1, 1939). Rules and regulations of the Federal Communications Commission. Aeronautical radio and teletype procedure. Specimen examination conducted by transport companies for position of radio operator in the commercial aeronautical service. United States Coast Guard distress radio procedure. United States Coast Guard medico advice procedure.

Note: This handbook, designed to furnish the information needed by the professional radio operator and the licensed amateur, covers the subject from the elementary principles to the specific steps taken to obtain both an operator's and an amateur operator's license, together with the requirements governing license examinations and the regulations which operators must know and observe. It explains in detail the construction and operation of the equipment used in radio reception, radio broadcasting, aviation and marine radio, auto-alarms, and the high-frequency receivers and transmitters used by police and by amateur operators.

STRICHARTZ, M. H., EDITOR

Marine radio manual. New York: Cornell Maritime Press, 1944. 518 p. illus. 19 cm. \$4.00. 3861a

Contents: Foreword. Introduction. Some maritime radio history. The ship's radio station. The maritime radio operator. Laws affecting radio officers. Work in port. Work at sea. Radio operating. The "business" of radio telecommunications. Types of telecommunications service. Distress and emergency communications. Radio station bookkeeping. Radio navigation aids. Frequency. A guide to the guidebooks. Tools. Maintenance. Troubleshooting. Direction-finders. Auto-alarms. Transmitters. Receivers. Safety and first aid. Radio medical aid. The international Morse code. General information. Index.

Note: This handbook, written by a radio officer of the United States Maritime Service, was prepared to serve both as a textbook for schools training young men for radio service at sea and as a practical reference book for marine radio operators. It covers all phases of the use of radio at sea. The last chapter includes: excerpts from the Communications Act of 1934, as amended; rules governing ship stations; U.S.C.G. radio regulations; rules governing commercial radio operators; radio navigation data; radio operating abbreviations; electrical symbols; glossary of nautical terms; glossary of electrical terms; and glossary of radio terms.

SUFFERN, MAURICE GRAYLE

Basic radio principles. New York: McGraw-Hill Book Company, Inc., 1943. 271 p. illus. 21 cm. \$3.00. 3862

Contents: Introduction to radio. Terms and symbols. Resonance and coupling. Vacuum-tube theory. Rectification and power supplies. Oscillators. Amplification. Detection. Radio receivers. Transmitters. Amplitude modulation. Antennas. Test equipment. Circuit diagram index. Subject index.

Note: A short text suitable for self-instruction and for use in introductory courses. It is designed to give the radio technician a knowledge of the principles of radio transmission and reception and an understanding of the functions of the various types of radio equipment. Mathematics and formulas are avoided almost entirely in the discussion. Each chapter includes test questions.

TERMAN, FREDERICK EMMONS

Fundamentals of radio. With the collaboration of Lt. F. W. MacDonald, U.S.N. New York: McGraw-Hill Book Company, Inc., 1938. 458 p. illus. 23 cm. \$3.75. 3863

Contents: The fundamental components of a radio system, circuit elements. Resonant circuits and circuit analysis. Fundamental properties of vacuum tubes. Vacuum-tube amplifiers—power amplifiers. Vacuum-tube oscillators. Modulation. Vacuum-tube detectors. Sources of power for operating vacuum tubes. Radio transmitters. Radio receivers. Propagation of radio waves—antennas. Radio aids to navigation. Television. Acoustics. Appendix. Index.

Note: Presents the basic principles of radio communication in a form suitable for use in an introductory radio course. No knowl-

edge of complex quantities is required. The book is essentially an abridged and simplified version of the author's *Radio engineering*, described below.

TERMAN, FREDERICK EMMONS

Measurements in radio engineering. New York: McGraw-Hill Book Company, Inc., 1935. 400 p. illus. 23 cm. \$4.00. 3864

Contents: Voltage, current, and power. Circuit constants at low frequencies. Circuit constants at radio frequencies. Resistance, inductance, and capacity devices. Measurement of frequency. Wave form and phase. Vacuum-tube characteristics. Audio-frequency amplification. Receiver measurement. Oscillator, power-amplifier, and modulation measurements. Measurements on radio waves, antennas, and transmission lines. Laboratory oscillators. Cathode-ray tubes. Miscellaneous. Appendixes: Laboratory experiments. Laboratory organization and equipment.

Note: A comprehensive engineering discussion of the measuring problems commonly encountered by radio engineers. Gathers together information on measuring techniques and measuring equipment, giving considerable attention to the principles involved in the design and construction of laboratory equipment, emphasizing those methods which experience has shown to be the most practical, which require the minimum of equipment, and which are least likely of error.

TERMAN, FREDERICK EMMONS

Radio engineering. Second edition. New York: McGraw-Hill Book Company, Inc., 1937. 813 p. illus. 23 cm. \$5.50. 3865

Contents: The elements of a system of radio communication. Circuit constants. Properties of resonant circuits. Fundamental properties of vacuum tubes. Vacuum-tube amplifiers. Power amplifiers. Vacuum-tube oscillators. Modulation. Vacuum-tube detectors. Sources of power for operating vacuum tubes. Radio transmitters. Radio receivers. Propagation of waves. Antennas. Radio aids to navigation. Television. Sound and sound equipment.

Note: A comprehensive treatment covering all phases of radio communication, written from the viewpoint of the engineer who is interested not only in qualitative descriptions of radio phenomena, but also in making quantitative analyses for facilitating design and research. This thoroughly revised and enlarged edition includes a new chapter on television, extended material on diode detectors, distortion, modulation, power amplifiers, wave propagation, etc., and hitherto unpublished material on filter systems, universal amplification curves, analysis of directional characteristics of radiation, and other topics.

TERMAN, FREDERICK EMMONS

Radio engineers' handbook. New York: McGraw-Hill Book Company, Inc., 1943. 1019 p. illus. 23 cm. \$6.00. 3866

Contents: Tables, mathematical relations, and units. Circuit elements. Circuit theory. Vacuum tubes and electronics. Vacuum-tube amplifiers. Oscillators. Modulation and demodulation. Power-supply systems. Radio transmitters and receivers. Propagation of radio waves. Antennas. Radio aids to navigation. Measurements.

Note: An important reference tool which aims to summarize and bring together, under each of the above headings, all pertinent and useful facts, formulas, designs, and procedures. The material is based on a review of some 2000 technical articles which, cited as footnotes, constitute an extensive bibliography. There is no section on television and any developments brought about by the war have been omitted. There are separate author and subject indexes.

WANG, THEODORE JOSEPH

Mathematics of radio communications. New York: D. Van Nostrand Company, Inc., 1943. 371 p. illus. 22 cm. \$3.00. 3867

Contents: Arithmetic operations. Simple equations. Graphical representation. Practical computations. Algebraic operations. Exponents. Quadratic equations. Square root. Simultaneous equations. Trigonometric functions. Radian measure of angles. Average values. Rate of change. Solution of triangles. Vectors. The rotating vector. Vector forms. Logarithms. The slide rule. Natural logarithms. Trigonometric identities. Lines. Power functions and exponential functions. Differentiation. Application of derivatives. Empirical formulas. Expansions of functions. Further applications

of derivatives. Integration as inverse differentiations. Integration as summation. Fourier series. Simultaneous linear equations. Graphs.

Note: This textbook teaches the elementary mathematics needed in radio work. Many problems are worked out in the text, and many others are provided for solution by the student. These problems are generally based upon radio applications, and are arranged in the same order as that followed in courses in communications.

Television

DE FOREST, LEE

Television, today and tomorrow. New York: The Dial Press, 1942. 361 p. illus. 24 cm. \$3.75. 3867a

Contents: Foreword. The purpose of this book. What is television? History of television. Economic status of television. Projection tubes. The general television system. Cathode beam systems. Cathode-beam synchronization. Use of film in television. Transmission through space. Television for amateurs. Studio technique. The television transmitter and studio pickup. Film projectors for television pickup. Receiving antennas for television. Sweep circuits. The DuMont system. The Priess television system. Magnetic focusing and deflection. Television and frequency modulation (FM). The television profession. Suppose television is your job. Television's future and its influence upon society. Index.

Note: An authoritative book for the general reader.

FINK, DONALD G.

Principles of television engineering. New York: McGraw-Hill Book Company, Inc., 1940. 541 p. illus. 23 cm. \$5.00. 3868

Contents: Television methods and equipment. Image analysis. Fundamentals of television camera action. Formation, deflection, and synchronization of scanning beams. The video signal. Video amplification. Carrier transmission of video signals. Image reproduction. Television broadcasting practice. Television receiver practice. Appendix: Transmission standards, recommended practices, definitions, and names of controls adopted by the Radio Manufacturers Association. Index.

Note: A textbook of college grade on the fundamental processes of television transmission and reception, containing design data, transmitter and receiver circuits, and detailed descriptions of television equipment in use as of late 1939, typical transmission being given as a 441-line 30-frame picture by the iconoscope method of scanning. The presentation of material follows the sequence of operations from television camera through amplifying and transmission equipment, reception, detection and amplification and image reproduction. There are numerous bibliographic notes.

HYLANDER, CLARENCE JOHN, AND ROBERT HARDING, JR.

An introduction to television. New York: The Macmillan Company, 1941. 207 p. illus. 21 cm. \$2.00. 3869

Contents: What is television? The birth of television. The radio tube to the rescue. The ether highway. The television camera. The picture goes on the air. The television receiver. The future of television. Index.

Note: The growth of television is presented from the historical method of approach, in terms understandable to the layman or general reader. The simplest aspects are introduced first, and these are used as foundation knowledge for the succeeding concepts, culminating in the apparatus and methods in commercial use in 1941. No attempt is made to present a technical development of the electrical theory involved or to teach the elements of repairing and servicing television sets. The aim is rather to give a broad picture of the present scope and future possibilities of television as a medium of information and entertainment. There are 60 text photographs and drawings of cameras, projectors, and other television apparatus.

NATIONAL TELEVISION SYSTEM COMMITTEE

Television standards and practice; selected papers from the Proceedings of the National

Television System Committee and its panels, edited by Donald G. Fink. New York: McGraw-Hill Book Company, Inc., 1943. 405 p. illus. 23 cm. \$5.00. 3870

Contents: Television standardization in America. The National Television System standards. Television systems. Subjective aspects of television. The television channel. The television transmitter. The transmitter-receiver relationship. The scanning specifications. Synchronization of the picture. Horizontal vs. vertical polarization. Index.

Note: Compiled from the Proceedings of the National Television System Committee on which are based the standards adopted in 1941 by the Federal Communications Commission for commercial television broadcasting in the United States, this volume constitutes a summary of official television standards and a symposium on the engineering problems of the field. Intended for television engineers interested in providing and operating the equipment for public television service and for students of television in general.

ZWORYKIN, VLADIMIR KOSMA, AND G. A. MORTON

Television; the electronics of image transmission. New York: John Wiley and Sons, Inc., 1940. 646 p. illus. 23 cm. \$6.00. 3871

Contents: Part I, Fundamental physical principles: Emission of electrons from solids. Fluorescent materials. Electron optics. Vacuum practice. Part II, Principles of television: The fundamentals of picture transmission. The transmission and reproduction of high-definition pictures. Video pickup devices. Picture reproducing systems. Part III, Component elements of an electronic television system: The iconoscope. The kinescope. The electron gun. Video amplifiers. Scanning and synchronization. The television transmitter. The receiver. Part IV, RCA-NBC television project: RCA television project—studio and monitoring equipment. Empire State transmitter. Conclusion. Index.

Note: This book contains a logical development of the theory and practice of electronic television starting with the basic fundamental physical phenomena and leading up to each of the elements involved in the pickup, transmission, and reproduction of television images. It is a volume suitable for workers in electronics and television who need a single reference to supplant the numerous articles that have appeared in the technical journals in recent years. A knowledge of the fundamentals of calculus, electron physics, and radio engineering are prerequisite to a complete understanding of certain chapters, although the book is not limited to theoretical aspects but contains considerable material of interest to non-technical readers. A large amount of detailed information of a practical nature is given, for example, on such diverse matters as the techniques employed in the construction of iconoscopes and kinescopes, vacuum plumbing, and television receiver design.

CHEMICAL ENGINEERING

BADGER, WALTER LUCIUS, AND WARREN L. MCCABE

Elements of chemical engineering. With an introduction by Arthur D. Little. Second edition. New York: McGraw-Hill Book Company, Inc., 1936. 660 p. illus. 23 cm. (Chemical engineering series) \$5.00. 3872

Contents: General considerations. Flow of fluids. Transportation of fluids. Flow of heat. Evaporation. General mechanism of diffusion processes. Humidity and air conditioning. Drying. Distillation. Gas absorption. Extraction. Crystallization. Filtration. Mixing, crushing and grinding. Size separation. Conveying. Appendix.

Note: This book presents a discussion of the unit operations of chemical engineering, covering both theory and practice. The theory is developed from the simplest considerations. It classifies the various types of equipment used in the chemical industries, and coordinates theory with design.

DAVIS, DALE STROBLE

Chemical engineering nomographs. New York: McGraw-Hill Book Company, Inc., 1944. 311 p. illus. 23 cm. (Chemical engineering series) \$3.50. 3873

Contents: Acid nomographs—miscellaneous. Boiling-point corrections and elevations. Thermal conductivities of gases, vapors, liquids, and woods. Distillation, evaporation, and extraction. Flow of fluids and related nomographs. Fuel-analysis and thermal-value nomographs. Heat-transfer coefficients. Milk and cream nomographs. Nomographs of interest to the paper industry. pH nomographs. Vapor-pressure-temperature-concentration nomographs. Molecular-refraction and molecular-volume nomographs. Solubility nomographs (exclusive of vapor-pressure data). Nomographs for density corrections and physical data of various chemicals. Nomographs for contents of horizontal tanks. Line-coordinate charts for vapor-pressure-temperature data. Viscosity nomographs. Miscellaneous nomographs. Index.

Note: A compilation of the best of the Davis nomographs, together with numerous alignment charts of other authors, including Ernst Berl's *Nomographic charts for density corrections and physical data on heavy chemicals*. These nomographs and line coordinate charts, about 200 in number, are presented in a form large enough to be read easily, and are supplemented by corroboratory material and adequate directions for their use.

DODGE, BARNETT FRED

Chemical engineering thermodynamics. New York: McGraw-Hill Book Company, Inc., 1944. 680 p. illus. 23 cm. (Chemical engineering series) \$6.00. 3874

Contents: Definitions and fundamental concepts. The first two fundamental laws. Quantitative development of the two fundamental laws. The thermodynamic functions. General equations of equilibrium. Pressure-volume-temperature relations of fluids. Thermodynamic properties of fluids. Compression and expansion of fluids. Thermodynamics of fluid flow. Heat transfer. Refrigeration.

Note: A text and reference book on thermodynamics as applied particularly in the field of chemical engineering. After a thorough treatment of the fundamental laws, the book develops various applications of especial interest to chemical engineers. No attempt has been made to cover all applications; instead, a few have been selected for more detailed treatment. The treatment presupposes a knowledge of calculus but no previous study of thermodynamics.

HOUGEN, OLAF ANDREAS, AND KENNETH M. WATSON

Chemical process principles. Volume I. New York: John Wiley & Sons, Inc., 1943. 452 p. illus. 22 cm. \$4.50. 3875

Contents: Volume 1, Material and energy balances: Stoichiometric principles. Behavior of ideal gases. Vapor pressure. Humidity and saturation. Solubility and sorption. Material balances. Thermophysics. Thermochemistry. Fuels and combustion. Chemical, metallurgical and petroleum processes. Index.

Note: Volume 1 of this two-volume treatise deals primarily with the applications of general physical chemistry, thermophysics, thermochemistry and the first law of thermodynamics. Generalized procedures for estimating vapor pressures, critical constants, and heats of vaporization have been elaborated. New methods are presented for dealing with equilibrium problems in extraction, adsorption, dissolution and crystallization. The construction and use of enthalpy-concentration charts have been developed. The second volume is not yet available.

KEYES, DONALD BABCOCK, AND A. GARRELL DEEM

Chemical engineers' manual. New York: John Wiley & Sons, Inc., 1942. 221 p. illus. 16 cm. \$2.50. 3876

Note: This book contains what might be termed the permanent reference information of chemical engineering—the equations, formulas and tables upon which the calculations are based. There are data on fluid flow, heat transfer, diffusional operations, separation. There are tables of logarithms of numbers, integrals, steam tables, tables of specific heat of water and mercury, specific heat of elements, specific heat of aqueous solutions, thermal conductivities of metals, viscosity of gases and vapors, critical constants, standard pipe and line pipe, limiting bending factors for tubing, weights of square and round steel bars. There are altogether 77 convenient tables. The book is fully indexed for ease of reference.

MCCORMACK, HARRY, EDITOR

The applications of chemical engineering. Editor-in-chief, Harry McCormack; associate editors, E. W. Comings, J. C. Elgin, W. L. Faith [and others]. New York: D. Van Nostrand Company, Inc., 1940. 431 p. illus. 23 cm. \$3.75. 3877

Contents: The measurement of temperature, by R. A. Ragatz. Flow of fluids, by J. H. Rushton. Flow of heat, by H. McCormack. Evaporation and evaporators, by H. McCormack. Distillation, by Joseph H. Koffolt and James R. Withrow. The drying of solids, by O. A. Hougen. Humidification and dehumidification, by O. A. Hougen. Gas absorption, by J. C. Elgin and J. C. Whitwell. Filtration, by E. W. Comings. Classification and concentration of solids, by Henry T. Ward. Size reduction, by Lincoln T. Work.

Note: Each of the chapters listed above contains several experiments for college courses in chemical engineering. These experiments have been planned to teach the principles of chemical engineering and to give the instructor a wide selection to enable him to choose the work that meets the needs of his classes, and that suits the equipment available in his laboratory. The text was initiated and composed by a group of members of the Society for the Promotion of Engineering Education.

PERRY, JOHN HOWARD, EDITOR

Chemical engineers' handbook, prepared by a staff of specialists. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 3029 p. illus. 18 cm. (Chemical engineering series) \$10.00. 3878

Contents: Mathematical tables and weights and measures. Mathematics. Physical and chemical data. Indicators, qualitative analysis, catalysis, organic chemistry. Physical and chemical principles. Flow of fluids. Heat transmission. Evaporation. Humidification, dehumidification, and cooling towers and spray ponds. Gas absorption and solvent extraction. Adsorption. Distillation and sublimation. Drying. Mixing of materials. Mechanical separations. Crushing, grinding, and pulverizing. Measurement and control process variables. Materials of construction. High-pressure technique. Movement and storage of materials. Fuels. Power generation and mechanical power transmission. Refrigeration. Electricity and electrical engineering. Electrochemistry. Economic factors in chemical plant location. Accounting and cost finding. Safety and fire protection. Reports and report writing. Index.

Note: A reference handbook for chemical engineers, chemists, plant executives, and students, covering the field of industrial chemistry and related subjects, with information on construction materials, electrical power, accounting, and safety to the extent that these apply to the chemical industry. New material has been added on such topics as solvents, shooting, granulation, sprays, and thermodynamics, with new tables and a new index. The work is a composite effort: the sections are the work of more than 80 chemists and other specialists in the subjects mentioned in the table of contents.

PIERCE, DAVID E.

Chemical engineering for production supervision. New York: McGraw-Hill Book Company, Inc., 1942. 232 p. illus. 23 cm. (Chemical engineering series) \$2.50. 3879

Contents: General principles of chemistry and physics. Transformation of energy. Heat transfer. Evaporation. Distillation. Drying. Flow of fluids.

Note: This work is designed to give the foreman or supervisor in charge of chemical engineering equipment sound information about the basic principles on which the performance of the equipment depends. It presents the fundamentals of chemistry, physics, and thermodynamics needed by the operating man, and shows their application to five of the most important unit operations. Also shows simple methods of calculation so that the reader may check the performance of his equipment, analyze many of the operating troubles which he encounters, and predict the effect of changes in equipment and in operating methods.

RIEGEL, EMIL RAYMOND

Chemical machinery; an elementary treatise on equipment for the process industries. New York: Reinhold Publishing Corporation, 1944. 583 p. illus. 23 cm. \$5.00. 3880

Contents (abridged): Introduction. Factors in plant location. Reducing the size of solid materials. Screening and grading equipment. Conveying and elevating equipment. Tanks. Propelling and elevating liquids. Weighing and proportioning solids and liquids. Equipment for the propulsion and cleaning of gases. Mixing devices. Separation of solids from liquids. Evaporators. Crystallizers. Dryers. Distilling and fractionating equipment. Heat exchangers. Application of heat, and cold-kettles. Gas conditioning. Hydraulic pressure equipment. High pressure equipment. Instruments. Appendix. Index.

Note: This practical description of mechanical devices used in large-scale chemical operations is particularly suited to the needs of engineers faced with the tasks of selecting and installing such equipment. Machines serving the same purpose are grouped together, and the arrangement of the chapters follows the sequence of events in chemical plants. Comparison is made between similar machines with regard to efficiency, special features, and costs. Laboratory equipment and, in most cases, specialized apparatus have not been included. References to literature are given at the end of each chapter.

ROBINSON, CLARK SHOVE, AND EDWIN RICHARD GILLILAND

The elements of fractional distillation. Third edition. New York: McGraw-Hill Book Company, Inc., 1939. 267 p. illus. 21 cm. (International chemical series; J. F. Norris, consulting editor) \$3.00. 3880a

Contents: The phase rule. One-component systems. Two-component systems. More complex systems. The gas laws. Solutions. Concentrated solutions. Simple distillation and partial condensation. Ammonia. Benzolized wash oil. Methyl alcohol. Ethyl alcohol. Rectification of binary mixtures. Rectification of complex mixtures. Rectification of multicomponent mixtures. Rectification of complex hydrocarbon mixtures. Rectification of absorption naphtha. Topping stills for crude petroleum. Column performance. The condenser. Accessories. Continuous distillation.

Note: Explains the principles of fractional distillation simply and accurately, according to the best ideas of physical chemistry and chemical engineering, illustrating these principles with carefully selected applications. This revision, embracing several entirely new chapters, covers rapid development in the field occasioned by growth of the petroleum and synthetic chemical industries.

ROBINSON, CLARK SHOVE

The recovery of vapors, with special reference to volatile solvents. New York: Reinhold Publishing Corporation, 1942. 273 p. illus. 23 cm. \$4.75. 3881

Contents: Preface. Introduction. Gases and vapors. Vaporization. Liquid mixtures. Distillation of liquid mixtures. Condensation of mixed vapors. Rate and capacity. Adsorption. Adsorption of mixed gases. Rate of adsorption. Recovery of adsorbed vapors. Adsorption apparatus for solvent recovery. Commercial activated carbon systems. Solvent recovery by condensation at constant pressure. Condensation with cooling water. Cooling with refrigeration. Heat of vaporization in the absence of gases. Vaporization in the presence of inert gases. The gas under natural circulation. The gas under forced circulation. Apparatus used in forced circulation of gases. Solvent recovery by compression and cooling. Solvent recovery by scrubbing. Scrubbing apparatus. Special absorbents. Extraction by solvents. Appendix. Index.

Note: This book, written for industrial chemists and chemical engineers who are inexperienced in this particular field, contains material on both the theory and commercial processes involved in the recovery of vapors. While the author's first work on the subject, *Recovery of volatile solvents*, New York, 1922, covered solvents only, the recovery of vapors generally encountered in industry has been added to the present volume.

SHERWOOD, THOMAS KILGORE

Absorption and extraction. New York: McGraw-Hill Book Company, Inc., 1937. 278 p. illus. 23 cm. (Chemical engineering series) \$3.50. 3882

Contents: Diffusion. Transfer of material between phases. Principles of the design of absorption equipment. Design principles for multicomponent systems. Gas absorption equipment. Performance of absorption equipment. Simultaneous absorption and chemical reaction. Solvent extraction.

Note: Outlines the underlying theory of such important diffusional processes of the unit operations of chemical engineering as absorption, extraction, drying, humidification, and dehumidification. Particular attention is given to the engineering problems connected with the design and operation of equipment for absorption and extraction.

SHERWOOD, THOMAS KILGORE, AND CHARLES E. REED

Applied mathematics in chemical engineering. New York: McGraw-Hill Book Company, Inc., 1939. 403 p. illus. 23 cm. (Chemical engineering series) \$4.00. 3883

Contents: Integration and differentiation. The use of differential equations. Solution of ordinary differential equations. Applications of partial differentiation. Infinite series. Partial differential equations. Numerical analysis. Graphical treatment of chemical-engineering processes. Theory of errors and precision of measurements.

Note: A practical text on the use of differential equations, partial differentiation, partial differential equations, numerical methods of integration and differentiation, interpolation, empirical equations, graphical methods, and precision of measurements. The application of the various mathematical techniques to chemical engineering is illustrated by examples forming an integral part of the text.

VILBRANDT, FRANK CARL

Chemical engineering plant design. Second edition. New York: McGraw-Hill Book Company, Inc., 1942. 452 p. illus. 23 cm. (Chemical engineering series) \$5.00. 3884

Contents: Introduction. Foundations. Drainage. Piping installation. Pumps and pumping. The building. Power and power transmission. Development of the design project. Flow diagrams. Selection of process equipment. Plant layout and elevation. Preconstruction cost accounting. Locating the chemical plant. Appendices. Index.

Note: A book for advanced students of chemical engineering and chemical engineers, as well as for executives of chemical engineering industries. It presents an analysis of fundamental principles and factors bearing on development of an efficient plant process, through the laboratory stage and pilot plant stage, to commercial size. Changes in this text over the first edition (1934) are mainly in the chapters on development and plant location. References have been added; new information accounts for over 100 additional pages.

WALKER, WILLIAM HULTZ, AND OTHERS

Principles of chemical engineering, by William H. Walker, Warren K. Lewis, William H. McAdams and Edwin R. Gilliland. Third edition, revised and rewritten. New York: McGraw-Hill Book Company, Inc., 1937. 749 p. illus. 23 cm. (Chemical engineering series) \$5.50. 3885

Contents: Elements of industrial stoichiometry. Fluid films. Flow of fluids. Flow of heat. Fuels and power. Combustion. Furnaces and kilns. Gas producers. Crushing and grinding. Mechanical separation. Filtration. Basic principles of vaporization processes. Evaporation. General principles of diffusional processes. Absorption and extraction. Distillation. Humidity and wet- and dry-bulb thermometry. Air conditioning. Drying. Appendices. Index.

Note: A survey of the principles of science upon which chemical engineering operations are based, followed by an analysis of the various methods of applying these principles to the solution of chemical engineering problems. Intended as a textbook for advanced chemistry students. The third edition covers the developments in the practice of chemical engineering from 1923 to 1937, including extensive revision of the chapters on flow of heat and of fluids and in those involving diffusional processes; a section on dimensional analysis has also been added.

WEBER, HAROLD CHRISTIAN

Thermodynamics for chemical engineers. New York: John Wiley & Sons, Inc., 1939. 264 p. illus. 23 cm. \$3.25. 3886

Contents: Fundamental concepts of thermodynamics. The first law of thermodynamics. Equilibrium and the phase rule. Phase relations. Heat capacity and heat of reaction. Properties of materials. Perfect gases. Generalized pressure, volume, temperature relations. The second law of thermodynamics. Interpretation of the second law principle. Fluid flow. Power cycles. Steam engines and turbines. Refrigeration. Fugacity and activity. Equilibrium and equilibrium constants. Effects of pressure, volume and temperature on thermodynamic properties of substances. Partial molal quantities. Electrochemical effects. The third law of thermodynamics. Appendix. Index.

Note: This textbook, intended for undergraduate instruction, aims to present the more important thermodynamic relations in a manner particularly useful to the chemical engineer. Emphasis is therefore placed on changes of a reversible, isothermal, non-flow nature, where analysis in terms of free energy is direct and satisfactory. Attention is also given, however, to changes where conditions approximate those of steady flow, where the use of the entropy concept is convenient, and to the correlation of the two different approaches.

WENNER, RALPH RICHTER

Thermochemical calculations. New York: McGraw-Hill Book Company, Inc., 1941. 384 p. illus. 23 cm. \$4.00. 3887

Contents: Principles: Scope, definitions, and units. Thermal effects accompanying physical changes of state. Thermal effects accompanying solution processes. Thermal effects accompanying chemical changes. Equilibria in physical processes and the free-energy change. Equilibria in chemical processes and the free-energy change. Special methods (theoretical). Special methods (semi-empirical). Applications: Analytical applications. Industrial chemicals. Flame temperatures. Converter design. Gas absorption. Air conditioning. Metallurgical applications. Liquefaction of gases. Fluid flow.

Note: Gives a realistic working treatment of thermodynamics for chemists and chemical engineers, as an introduction to the modern principles, methods, and data available for the solution of a wide variety of practical laboratory and technological problems. Shows the contributions of the theoretical physicist to the field of thermodynamics and presents various semi-empirical methods for the estimation of thermodynamic functions.

APPLIED CHEMISTRY

General

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B1419 **BADGER, WALTER LUCIUS, AND E. M. BAKER**

Inorganic chemical technology. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 237 p. illus. 23 cm. (Chemical engineering series) \$2.50. 3888

Contents: Introduction. Common salt. Sulphuric acid. Fixed nitrogen and nitric acid. Hydrochloric and phosphoric acids. Sodium carbonate. Caustic soda and chlorine. Miscellaneous products.

Note: Shows the relation between the theoretical considerations and the design and operation of equipment. The authors present a discussion of modern quantity production of representative products in which the chemical nature of raw materials is changed. The book covers what is actually being done in industry today, indicating which processes are becoming obsolete, the relative importance of different processes, and the trends in equipment for those processes.

Leine
Book **BENNETT, HARRY, EDITOR**

The chemical formulary; a collection of valuable, timely, practical commercial formulae and recipes for making thousands of products in many fields of industry. Brooklyn, N.Y.: Chemical Publishing Company, 1933-43. 6 v. 22 cm. \$6.00 each volume, U.S.; \$6.40 each volume, foreign countries. 3889

— Cumulative index for volumes 1-6 of The Chemical formulary. Brooklyn, N.Y.: Chemical Publishing Company, 1944. 164 p. 22 cm. \$4.00, U.S.; \$4.40, foreign countries. 3890

Note: A collection of useful recipes and formulas in many fields. In each volume, the material is grouped under such classifications as Adhesives, Beverages, Cosmetics and drugs, Emulsions, Food products, Inks and marking materials, Lubricants and oils, Metals, alloys and their treatment, Paint, varnish, lacquer and other coatings, Photography, Polishes and abrasives, Pyrotechnics and explosives, Soaps and cleaners, Textiles and fibers. Each volume contains new material of the same nature and is not a revision of a previous volume. Patent references are given in many cases. Each volume is individually indexed and the Cumulative index provides a key to all the volumes.

BENNETT, HARRY

Practical emulsions; a handbook of emulsions, emulsifiers and methods of formulating and making emulsions of practical value in industry. Brooklyn, N.Y.: Chemical Publishing Co., Inc., 1943. 462 p. illus. 22 cm. \$5.00. 3890a

Contents: Part I, General: Emulsifying agents. Types of emulsions and foams. Methods, formulation, equipment. Stability. General technical emulsions. Dispersing agents, wetting agents. Emulsifying agents, list of. Emulsions, list of. Demulsifying and defoaming agents, list of. Part II, Formulas: Agricultural spray emulsions. Cutting oils, soluble oils, miscible oils. Emulsifying agents. Bituminous emulsions. Cleaners and soaps. Cosmetic and drug emulsions. Defoaming agents. Food emulsions. Gasoline emulsions. Lacquer emulsions. Leather treatment emulsions. Lubricant emulsions. Medicinal emulsions. Paint emulsions. Paper processing emulsions. Polish emulsions. Resin and rubber emul-

sions. Textile emulsions. Waterproofing emulsions. Wax emulsions. Miscellaneous. Dispersions. Index.

Note: This handbook and guide for the practical worker touches only lightly on the theoretical aspects and concentrates on the art of making and applying emulsions. While no attempt has been made to present a complete record of all published work on the subject, there are nearly 2,000 references to the technical literature and patents relating to this field. The second part of the work lists a considerable number of formulas under each of the headings indicated above, together with references to the original paper in which each was first published.

BERKMAN, SOPHIA, AND GUSTAV EGLOFF

Emulsions and foams. New York: Reinhold Publishing Corporation, 1941. 591 p. illus. 23 cm. \$8.50. 3891

Contents (abridged): The theory of emulsions and foams. Foams. Practical knowledge of emulsions: demulsification; asphalt and bitumen emulsions; lubricants and lubricating oil emulsions. Laboratory methods used in examination of emulsions. Bibliography. Author index. Subject index.

Note: The emphasis in this volume is on petroleum emulsions and the methods used in breaking them, such as electric dehydration, desalting, and centrifuging. The principles expounded, however, hold good for emulsions in general, hence the book is of value to anyone concerned with emulsions. Bibliographies follow the chapters.

BURK, ROBERT EMMETT, AND OTHERS

Polymerization and its applications in the fields of rubber, synthetic resins, and petroleum, by Robert E. Burk, Howard E. Thompson, Archie J. Weith, and Ira Williams. New York: Reinhold Publishing Corporation, 1937. 312 p. illus. 23 cm. (American Chemical Society monograph series. No. 75) \$7.50. 3892

Contents (abridged): Introduction. The relation between molecular structure and rate of polymerization. Catalysis and polymerization. The mechanisms of polymerization. The liquid state and the structure of polymers. Polymerization in the rubber industry. Polymerization and synthetic resins. Polymerization in the petroleum industry. Index.

Note: The purpose of this volume is to bring together the facts and theories relating to polymerization and its applications, so that they will be readily available to workers in the field. Although polymerization has a practical bearing in numerous industries, the study of its applications is here limited to the rubber, synthetic resin, and petroleum industries. The chapter on catalysis and polymerization consists of references to literature dealing with the catalytic polymerization of various substances. It contains a subject index. Extensive bibliographies are given at the end of each chapter and there are separate author and subject indexes.

ELLIS, CARLETON

Hydrogenation of organic substances, including fats and fuels. Third edition, rewritten and enlarged. New York: D. Van Nostrand Company, Inc., 1930. 986 p. illus. 23 cm. \$15.00. 3894

Contents (abridged): Catalytic hydrogenation. Absorption. The mechanism of catalysis. Conditions of hydrogenation. Promoters and co-catalysts. Nickel catalysts. Nickel oxides as catalysts in hydrogenation. Non-nickel base metal. Non-metal catalysts and carbonyls. Hydrogenation in organic chemistry. Hydrocarbons, ethers, alcohols, aldehydes. Hydrogenation at nitrogen linkages I; II. Hydrogenation of heterocyclic compounds I, II. Dehalogenation. Catalytic hydrogenation of fatty oils. Miscellaneous processes

and devices for oil hardening. Hydrogenation of fatty oils—industrial practice. Food products made with the hydrogenated glycerides. The use of hydrogenated oils in non-edible products. Hydrogenation of coal. Hydrogenation of mineral oils. Electrical methods of hydrogenating fatty and mineral oils. Hydrogen by electrolysis of water. Miscellaneous processes for making hydrogen. Precautions in handling hydrogen. Safety devices—purification of gas. Appendix.

Note: Starting with an account of the principles of hydrogenation catalysis, this book covers systematically the scientific work on the hydrogenation of individual organic compounds, and then presents the details of the industries themselves. The design of equipment and the operation of the various processes is described. The third edition contains a revision of the entire text, and new chapters on the hydrogenation of coal and petroleum oils, and on the reaction between carbon monoxide and hydrogen in the solvent field.

GRADY, ROY ISRAEL, AND JOHN W. CHITTUM,
EDITORS

The chemist at work. Easton, Pa.: The Journal of Chemical Education, 1940. 454 p. illus. 21 cm. \$3.00. 3894a

Contents (abridged): The plant chemist, by J. Alfred Hall. Chemistry in the insurance business, by Warren A. Hough. The field of nutrition, by Wm. E. Krauss. The chemist in the lead-silver smelter, by Franklin G. Hills. Chemical research in the glass industry, by William J. Arner. Medical technologist, by Eleanor Breitwieser. Activities of the chemist in sugar industries, by William D. Horne. Research work in a government laboratory, by Earle O. Whittier. Invention, by A. B. Miller. The railway water chemist, by R. C. Bardwell. The chemist in the pharmaceutical industry, by Randolph J. Owen. The chemist in the canning industry, by E. F. Kohman. The chemist in the glass industry, by S. R. Scholes. Biochemical research, by Marjorie P. Benoy. The petroleum chemist, by Cary R. Wagner. The university professor, by Francis Earl Ray. Chemistry in a tuberculosis sanatorium, by Georgine A. Moerke. Chemistry in the education of a forester, by Edwin C. Jahn. Appendix: The chemical technician; a trade analysis, by R. E. Bowman.

Note: A collection of short papers by specialists in a wide variety of chemical fields, outlining the aims and techniques of their specialties and their relation to the broader fields of science and technology. Although intended as a guide for youths of college age who intend to specialize in chemistry, the book is of interest also to the general reader.

GREGORY, THOMAS C., COMPILER

Uses and applications of chemicals and related materials; a guide to their current industrial uses; potential applications and sales possibilities. New York: Reinhold Publishing Corporation, 1939-44. 2 v. 23 cm. Vol. I, \$10.00; Vol. II, \$9.00. 3895

Note: The first volume covers 5,167 products current in industry as of 1939, while the second lists 2,642 substances and is presented as a supplement to the earlier work. Substances are arranged alphabetically and under each is listed briefly its uses and applications. There is a separate listing of synonyms and cross references in both volumes, while additional features of volume II include an index of uses of chemicals covering the two volumes, a numerical index to the patents cited in both books, and a list of the names and addresses of the patentees. The material is founded on data published in the *Oil, paint and drug reporter* under the titles "Where you can sell" and "Industrial uses of chemicals and related materials."

HAYNES, WILLIAMS

The chemical front. New York: Alfred A. Knopf, 1943. 264 p. illus. (part col.) 22 cm. \$3.00. 3896

Contents (abridged): Ammunition. Black powder to block-buster. Chemistry revises tactics. Some super-explosives. Smoke without fire. The curse of Callinicus. Poison gas. Sulfa drugs. Penicillin. Serums and vaccines. Plasma. Breaking Japanese monopolies. Land versus laboratory. Petroleum. The virtue of levity. Plastics. High octane gasoline. Synthetic materials. Index.

Note: An exposition for laymen of the role of chemistry in World War II, of the men responsible for the discoveries, of the

processes of production, and of the promise of chemical invention for the future.

HAYNES, WILLIAMS

This chemical age; the miracle of man-made materials. Second edition, revised and enlarged. New York: Alfred A. Knopf, 1942. 401 p. illus. (part col.) 22 cm. \$3.50. 3897

Contents (abridged): Molecules made to order. Black tar to bright dye. The rise and fall of the German dye trust. Mars: chemical dictator. Sweet smells and savory flavors. In vitro: the sulfanilamide family. Two monopolies: Japanese and American. The great caoutchouc mysteries. The elastic Eldorado. Not rubber, but rubberlike. Chemists in spite of themselves. Manna becomes a chemical. The skeleton in the vegetable closet. Bargain basement to haute couture. New fibers: new fabrics. The herald of the plastic age. Materials for tomorrow. Our chemical armory. Chemicals on active service. Bibliography. Glossary of terms. Index.

Note: A book for laymen on the accomplishments of modern chemistry, including stories of research, discovery, invention, and industrial development. Explanations of chemical principles involved and interpretations of the significance of recent developments for everyday life are also included.

HOLMES, HARRY NICHOLLS

Out of the test tube. Fourth edition, revised and expanded. 103 illustrations. New York: Emerson Books, Inc., 1943. 311 p. illus. 23 cm. \$3.00. 3898

Contents (abridged): The upward sweep. With fire man rose above the beasts. The importance of nothing at all. Language and tools. The lightest substance known. The elixir of life. Chemical warfare. Brimstone or cornerstone. The fall of the house of uranium. Atom-smashing. The romance of the lazy elements. High explosive—the liberator. Silks and cellulose. Fuels and smoke. Chemistry and the motor car. Sugars and sweetness. Shall we have medicines and anesthetics to order? Let the yeasts, molds, and bacteria do the work. Chaining the sun. The chemist in crime detection. The farm as a factory. What transportation owes to the chemist. Minerals and world power. The three light metals. Strategic raw materials. Chemistry after the war. Winners of the Nobel prize in chemistry. Index.

Note: An account of the part played by chemistry in our daily life, and its relation to economics, sociology, national defense, warfare, and international affairs. Written in non-technical language for the layman and illustrated with pictorial drawings and graphs. This edition is only slightly changed from the third edition.

HOPKINS, ALBERT ALLIS, EDITOR

The Scientific American cyclopedia of formulas. Partly based upon the twenty-eighth edition of Scientific American cyclopedia of receipts, notes, and queries. 15,000 formulas. New York: Munn and Co., Inc., 1932. 1077 p. illus. 21 cm. \$5.50. 3899

Contents: Accidents and emergencies. Agriculture. Alloys and amalgams. Art and artists' materials. Beverages. Cements, glues, pastes, mucilages. Cleansing, bleaching, renovating. Coloring of metals. Dyeing. Electrometallurgy and hot and cold coating of metals. Glass. Heat treatment of metals, annealing, brazing, etc. Household formulas. Ice cream, confectionery and chewing gum. Insecticides and extermination of vermin. Lapidary art, artificing in ivory, bone, etc. Leather. Lubricants. Paints, varnishes, bronzing, lacquers, etc. Photography. Preserving and canning, condiments, etc. Rubber. Soap and candles. Soldering. Toilet preparations and perfumes. Waterproofing and fireproofing. Writing materials. Appendix. Index.

Note: A collection of miscellaneous formulas for use in the laboratory, factory, office, and home. The material is based upon the formulas and recipes published in American and foreign drug and technical journals. A number of formulas are given for the same product in order to show all types and to permit substitutions where certain ingredients are not available. The subject matter is arranged in chapter groups rather than in a single alphabetical order, and the index provides a key to the entire work.

LANDIS, WALTER SAVAGE

Your servant the molecule. New York: The Macmillan Company, 1944. 238 p. illus. 22 cm. \$2.75. 3900

Contents: Preface. Our dependence on chemistry. History of the art. The science. Organic chemistry. Fairy tales and hard facts. Food. Shelter. Clothing. Pulp and paper. Soap and detergents. Petroleum. Rubber, natural and synthetic. Resins and plastics. Explosives. Pigments and dyes. Drugs, pharmaceuticals, and vitamins. Cosmetics, toiletries, perfumes. Colloids. Chemical research. Appendix. Index.

Note: This publication gives the chemical background of many common materials for the lay reader. The chemical terminology is simple and kept to a minimum. The material is mainly descriptive and brief; no topic is covered in detail. Often the manufacture and applications are given as well as the chemistry.

✓ LEWIS, WARREN KENDALL, AND OTHERS

Industrial chemistry of colloidal and amorphous materials, by Warren K. Lewis, Lombard Squires, and Geoffrey Broughton. New York: The Macmillan Company, 1942. 540 p. illus. 24 cm. \$6.00. 3901

Contents: Structure of liquids. Viscosity. Surface tension. Surface tension and orientation. Adsorption. Suspensions. Amorphous solids. Emulsoids. The electrochemical behavior of colloids. Gelation. Emulsions and foams. Crystalline and amorphous states. Thermoplastics, glass. Plasticization by solution. Paper. The plastic fibers. Leather. Rubber. Ceramic industries. Synthetic resins and plastics. Textile fibers. Index.

Note: A college textbook which has also considerable reference value to practicing chemical engineers. Its purpose is to give readers beginning the study of the subject with a general background of chemistry, a satisfactory introduction to the field. A selected bibliography appears at the end of each chapter.

✓ MANTELL, CHARLES LETNAM

Industrial electrochemistry. Second edition. New York: McGraw-Hill Book Company, Inc., 1940. 656 p. illus. 23 cm. (Chemical engineering series) \$5.50. 3901a

Contents (abridged): Part I, Theoretical electrochemistry: Electrical units and Faraday's laws. Electrolytic dissociation and conductance. Electromotive force and energy relations. Part II, Technical electrochemistry: Electrochemical analysis. Electrolytic reduction and oxidation. Colloid electrochemistry. Primary cells. Secondary cells. Rectifiers and lightning arresters. Part III, Electrolytics: Electroplating and electroforming. Electrorefining of metals. Electrolysis of alkali halides. Electrolysis of fused salts. Part IV, Electrothermics: Electrothermics in general. Electric furnaces for metal melting. Metallic electrothermal products. Calcium carbide and cyanamide. Nonmetallic electrothermal products. Part V, Electrochemistry of gases: Electrical discharges in gases. Electronics. Part VI, Engineering: Materials of construction. Power generation and economics. Appendix. Index.

Note: A textbook for students of chemical engineering and a reference work for the practicing chemical engineer, emphasizing the technological importance of electrochemical processes and stressing their practical aspects. It covers theory, the various types of processes, their applications and products, equipment and methods in each, and presents a large amount of technical and operating data gathered in the field. The second edition contains 128 additional pages of new textual and bibliographic material covering advances from 1931 to 1940.

✓ MELLAN, IBERT

Industrial solvents. New York: Reinhold Publishing Corporation, 1939. 480 p. illus. 23 cm. \$11.00. 3902

Contents: Solution, theories and aggregates. Solvents, latent solvents, nonsolvents. Plasticity. Vapor pressure, evaporation rate, boiling point. Viscosity. Volatility, inflammability, toxicity. Solvents and their use in the industries. Hydrocarbons and their hydrogenated derivatives. Halogenated hydrocarbons. Alcohols. Aldehydes. Acids. Ketones. Ethers. Esters. Plasticizers. Graphical expression and interpretation. Nitroparaffins.

Note: A comprehensive collection of data relating to the preparation, properties, and industrial uses of various types of sol-

vents. Numerous tables and graphs are presented to provide the reader with specific and comparative information. There is a bibliography at the end of each chapter and separate author and subject indexes. The volume will be of interest to industrial chemists, particularly those engaged in the lacquer and plastics industries.

PARR, SAMUEL WILSON

The analysis of fuel, gas, water and lubricants. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1932. 371 p. illus. 21 cm. (International chemical series) \$3.00. 3903

Contents: Power. Distribution and production of coal. The development of fuel research. Calorimetry in America. The constitution of coal. The classification of coal. Oxygen absorption by coal. The ignition temperature of coal. The storage of coal. Combustion of coal. Impurities in coal. Coal contracts. Smoke. The fundamental properties of coal related to carbonization. Carbonization methods. Processed fuels—coke and briquets. Fuel gas. Wood. Liquid fuels. Boiler waters, their character and treatment. Embrittlement of boiler plate. Lubricants. The sampling of coal. The proximate analysis of coal. The calorimetry of fuels—the oxygen-bomb calorimeter. The calorimetry of fuels—the sodium peroxide calorimeter. Sulfur determinations. The ultimate analysis of coal—short method. Fuel-gas analysis. The analysis of flue gases. Analysis of boiler waters. Examination of lubricants. Appendix. Index.

Note: This book is based upon a course for juniors in mechanical and railway mechanical engineering at the University of Illinois. It discusses methods and procedure to be used in the analysis of fuel, gas, water, and lubricants. This revision, completed after the death of the author, reflects progress made between 1916 and 1932 in research covering the technology of fuels and changes in industry resulting from this progress. New material is provided on the constitution of coal and its relation to carbonization, and on the effect of boiler waters on steel.

READ, WILLIAM THORNTON

Industrial chemistry. Third edition. New York: John Wiley and Sons, Inc., 1943. 631 p. illus. 22 cm. \$5.00. 3904

Contents: The relation of chemistry to industry. The work of chemists and chemical engineers. Chemical organizations. Sources of information. Analytical control of chemical industry. Chemical economics. Unit operations and equipment. Materials of construction. Units and calculations. Water, fuel and lubricants. Sulfur and sulfuric acid. Fixed nitrogen. Silicate industry. Sodium, calcium, and magnesium compounds. Mixed fertilizers. Hydrochloric acid. Electrochemical industries. Metallurgy. Petroleum. Animal and vegetable oils, fats, and waxes. Carbohydrate industries. Protein industries. Rubber. Coal products. Drugs, dyes and plastics. Explosives. Protective coatings. Index.

Note: A balanced picture of modern industries from the standpoint of chemical compounds and changes, chemical engineering operations, sources of raw materials, uses of products, and economic relationships. The chemical industry is viewed in perspective, and the way in which research, analysis, control, sales, advertising, consultants, and administrators fit into the whole scheme is brought out. The last seventeen chapters of the book contain a great deal of information on industrially important chemicals. This third edition presents an entire section on petroleum, rewritten to include new material. The chapter on water discusses newer industrial uses for water. Synthetic rubber and modern plastics are discussed in relation to recent information. Technical terminology has been kept to a minimum without sacrificing technical detail.

RIEDEL, EMIL RAYMOND

Industrial chemistry, an elementary treatise ✓ for the student and general reader with the support of a large number of collaborators. Fourth edition. New York: Reinhold Publishing Corporation, 1942. 861 p. illus. 23 cm. \$5.50. 3905

Contents (abridged): Sulphuric and nitric acids. Sodium compounds. Nitrogen products. Phosphates. Fertilizers. Cements. Ceramic industries. Glass. Fuels. Industrial gases. Processes based on the activity of yeasts and bacteria. Cellulose. Sugar. Petroleum. Dyes. Oils. Paints. Soap. Explosives. Plastics and synthetic resins. Leather, gelatin and glue. Photography. Insecticides. Rub-

ber. Patents. Appliances and materials used by chemical engineers. Control instruments. Metals. Appendix. Index.

Note: The fourth edition of this book for general reading and students of chemical engineering is essentially the same in scope as the third, but it has been brought up to date by the inclusion of new industrial achievements. The two chapters on paper and synthetic textile fibers have been rewritten, and new material on petroleum is added. "Reading references" and patent notes are given at the end of each chapter.

✓ ROGERS, ALLEN, EDITOR

Rogers' Industrial chemistry; a manual for the student and manufacturer. Sixth edition, edited by C. C. Furnas, in collaboration with Allen Abrams, Jerome Alexander, Arthur A. Backus [and others]. New York: D. Van Nostrand Company, Inc., 1942. 2 v. illus. 23 cm. \$17.00. 3906

Contents: Section I, Background of the chemical industry: The economic pattern. The unit operations. The organic unit processes. High pressure processes. Industrial instrumentation. Water for municipal and industrial use. Section II, Heavy chemicals and allied products: Sulfuric acid. The nitrogen compounds. Natural salts and by-products. Alkali and chlorine production. Chlorine products. Electrochemical industries. Fertilizers. Section III, Fuels and their by-products: The petroleum industry. Manufactured city gas. Coal tar and its distillation products. Wood distillation industry. Industrial carbon, blacks, and chars. Industrial gases. Section IV, Refractories and allied materials: Glass. The clay products industries. Cement, lime and plaster. Section V, Metallurgical products: The metallurgy of iron and steel. Non-ferrous metallurgy. Section VI, Surface coatings: Surface coatings. White lead. Section VII, Products of organic synthesis: Industrial organic chemicals. Manufacture of intermediates and dyes. Application of dyestuffs. Industrial solvents. Synthetic plastics. Explosives. Military gases. The manufacture of pharmaceuticals. Section VIII, Natural organic materials: Sugar. Starch: its sources, manufacture and products. The pulp and paper industry. Cellulose industries. Rubber and rubber-like products. The natural resins, gums and gum resins. Natural oils, fats and waxes. Soap and glycerine. Glue and gelatine. Casein and allied materials. Leather.

Note: This set contains accounts of 49 important chemical industries written by leading American chemists and chemical engineers. Each of the authors has drawn upon his intimate knowledge of his industry to furnish the most essential facts and figures. Each of these industries is covered from raw materials to finished products, including the basic economic and chemical principles, and the details of the processes and equipment. An important feature of this sixth edition is the emphasis placed upon the physical unit operations and the chemical unit processes. It also includes the more recent advances in chemical technology, especially in the plastics and petroleum industries—and it tells how increased yields and greater efficiencies have been obtained by the application of modern chemical engineering methods.

SADTLER, SAMUEL SCHMUCKER

Chemistry of familiar things. Seventh edition, revised, with an additional chapter on photography. Philadelphia: J. B. Lippincott Company, 1937. 359 p. illus. (part col.) 21 cm. \$3.50. 3907

Contents: Introduction. Brief chemical outline. Historical development of chemistry. The periodic system of elements. The chemistry and production of light. Heat, combustion, and insulation. Air, oxidation, and ventilation. Water. Alkalies and salts. Metals. Gold and silver. Chemistry of the earth's evolution. Soil and its conservation. Food elements and food classes. Individual foods. Animal feeding. Fermentation. Chemistry of the body. Soaps, solvents, and paints. Paper and textiles. Leather and rubber. Silicious substances and glass. The chemical element in scenery. Chemistry since the World War. The rise of rayon. The chemistry of photography. Index.

Note: A summary in narrative style of simple chemical knowledge for the general reader. The author has dwelt at some length upon the chemistry of such subjects as air, water, metals, rocks, soil, food, textiles, chemical evolution, and physiological chemistry, but his discussion of basic chemical theory is brief. An outline of the fundamental principles of the chemistry of photography is included in the seventh edition, but there is no discussion of developing and fixing formulas, reducers, or the like.

SNELL, FOSTER DEE, AND FRANK M. BIFFEN

Commercial methods of analysis. With photomicrographs by George Lord. New York: McGraw-Hill Book Company, Inc., 1944. 753 p. illus. 21 cm. (International chemical series; L. P. Hammett, consulting editor) \$6.00. 3908 ✓

Contents: General. Tools of the analyst. General procedures. Preliminaries to the analysis. Qualitative analysis by micro and spot tests. Hydrogen-ion determination and electrometric titrations. Halogens. Combined nitrogen. Sulfur and its compounds. Minerals. Water analysis. Fixed alkalies and alkaline salts. Cement and mortar. Ferrous metals. Aluminum and light aluminum alloys. Copper-base alloys. Saponifiable fats and oils. Sulfated oil and related products. Soap and soap products. Heavy-metal soaps. Lubricating greases. Waxy substances. Solvents and thinners. Alcohols. Paints, varnishes, lacquers, and resins. Synthetic resins. White pigments, extenders, and mineral fillers. Mixed white pigments, extenders, and mineral fillers. Colored pigments and mineral colors. Oil and wax emulsions. Rubber. Miscellaneous rubber analyses and synthetic elastomers. Analysis of coal. Gas analysis. Paper, paper fibers, textile fibers, and starches. Sugar and sugar products. Petroleum products. Pyrethrins and rotenone. Indicator, reagent, and volumetric solutions. Index.

Note: A treatise for chemists outlining the method of approach to analysis of the numerous complex commercial products existing on the market at the present time (1944). Standard methods such as those recommended by the American Society for Testing Materials and the Association of Official Agricultural Chemists have in many cases been introduced, though not often in the exact words of the original methods. Simplification and explanation of steps, together with reasons, are a feature of the work. Emphasis is laid on the growing importance of the determination of minute quantities. The volume is of use to the professional analyst as well as to the student who is familiar with the tools of quantitative analysis.

THOMPSON, MAURICE DE KAY

Theoretical and applied electrochemistry. Third edition. New York: The Macmillan Company, 1939. 535 p. illus. 22 cm. \$5.00. 3908a ✓

Contents: Theoretical electrochemistry: Faraday's law of electrolysis. The electrolytic dissociation theory and the migration of ions. Electrical conductance. Electrokinetic phenomena. Electromotive force. Electrolysis and polarization. Applied electrochemistry of aqueous solutions: Electrochemical analysis. Electroplating and galvanoplasty. The electrolytic extraction and refining of metals. Electrolytic oxidation and reduction. The electrolysis of alkali chlorides. The electrolytic production of hydrogen, oxygen, and heavy water, and the electrolytic purification of water. Primary cells. Storage cells. Applications of electrokinetic phenomena. Corrosion. Electric furnaces and their products: Electroic furnaces. The products of resistance and arc furnaces (excluding electrothermic metallurgy). Electrothermic metallurgy. The fixation of atmospheric nitrogen. Products of the glow discharge. Solutions of problems. Principal symbols. Index.

Note: This text provides a basic knowledge of all the important modern electrochemical industries, and the theories upon which their processes are based. The present edition explains the new points of view in electrochemical theory, and describes recent industrial and laboratory developments such as the electrolytic extraction of new and rare metals, the production of heavy water, etc. There are bibliographies at the end of some chapters, and many new problems with solutions to all problems are included. There are 234 illustrations and 53 useful tables.

Plastics

AMERICAN SOCIETY FOR TESTING MATERIALS

Symposium on plastics. Philadelphia district meeting, February 22-23, 1944. Philadelphia: The American Society for Testing Materials, 1944. 200 p. illus. 23 cm. Paper, \$1.75; cloth, \$2.00. 3909

Contents (abridged): Introduction, by Robert Burns. Heat resistance of laminated plastics, by E. O. Hausmann and others. Effect of environmental conditions on the mechanical properties of organic plastics, by T. S. Carswell and H. K. Nason. Diffusion of water through plastics, by G. Deeg, Jr. and C. J. Frosch. Stiffness and brittleness properties of nonrigid vinyl chloride-acetate resin compounds, by R. F. Clash, Jr. and R. M. Berg. The behavior of plastics under repeated stress, by B. J. Lazan and A. Yorgiadis. Testing in connection with the development of strong plastics for aircraft, by Henry Sang. Differentiation between cold flow and shrinkage of laminated phenolic materials, by J. J. Martin. Summary of properties, uses, and salient features of families of plastics.

Note: A collection of technical papers summarizing the results of experimental research on the physical properties of various organic plastics. Brief discussions follow most of the papers.

D'ALELIO, GAETANO FRANCIS

A laboratory manual of plastics and synthetic resins. New York: John Wiley and Sons, Inc., 1943. 134 p. illus. 26 cm. \$2.00. 3910

Note: This book comprises 88 experiments and 26 test methods illustrating the essential principles and chemical laws that cover the important industrial plastics. Practically all the well-known resins and plastics which can be prepared readily have been included. As a few examples, the preparation of various phenol-formaldehyde resins, urea-formaldehyde resins and intermediate products, melamine-formaldehyde resins, alkyd resins, both saturated and unsaturated types, various vinyl polymers and the like and numerous others are included. The section on test methods gives those usually applied to an evaluation of the chemical and physical properties of the polymeric materials prepared in the initial part of the manual. An appendix lists the industrial sources of supply of chemicals and equipment suitable for these experiments, for those requiring relatively large amounts of materials. Not an elementary book.

DEARLE, DENIS ARTHUR

Plastic molding and plant management. Brooklyn, N.Y.: Chemical Publishing Company, Inc., 1944. 196 p. illus. 22 cm. \$3.50, U.S.; \$3.90, foreign countries. 3911

Contents (abridged): The thermosetting plastics. Thermoplastic materials. Molds; their construction and maintenance. Compression molding. Injection molding. Problems of production. Cost control. Custom and proprietary molds. Molding plant management. Questions and answers. Future applications. Bibliography. Index.

Note: A practical book designed to acquaint manufacturers, designers, laymen, and students with plastic molding advances, problems, and limitations. Although written in non-technical terms, a knowledge of compound molding is presupposed. A chapter on the most frequent problems arising in the ordering and construction of molds and the solutions of these problems is included in the book.

DELMONTE, JACK

Plastics in engineering. Second edition. Cleveland: Penton Publishing Company, 1942. 601 p. illus. 23 cm. (Machine design series) \$6.00. 3912

Contents: Introduction to organic plastics. Types, characteristics, and preparation of organic plastics. Effects of fillers on properties of molded plastics. Laminated plastics and their manufacture. Cast plastic materials. Physical, thermal, electrical and chemical properties of plastics. Design and specification of plastics for production. Design principles for molded plastic parts. Factors affecting the hot molding of plastics. Hot molding of plastics. Cold molding of plastics. Extrusion of plastic materials. Molds, their construction and design. Non-metallic bearings and their uses. Non-metallic gears and pinions. Non-metallic cams couplings, and clutches. Engineering applications of plastics and transparency plastics. Styling the machine with plastics. Fabricating and finishing plastics. Organic plastics in surface coatings. Synthetic rubbers and rubber-like resins. Common failures and defects in plastic materials. Test methods applicable to plastics. Comparative costs of plastics and molds. Trends in plastics. Index.

Note: This text and reference book for design engineers and students emphasizes the recent improvements and increased

facilities in the art of forming and fabricating plastic materials and their application to engineering problems. Several chapters are devoted to a survey of the chemistry of plastics and the art of molding them. Data on important engineering properties are conveniently tabulated and compared, together with analyses of some of these properties in terms of the fundamental nature of the materials and such related phenomena as condensation and polymerization. Typical examples of commercial and industrial applications are described and illustrated. This edition is extensively revised and expanded.

Du BOIS, JOHN HARRY

Plastics, a simplified presentation of the manufacture and use of the important plastics materials and products with tables of their properties and the basic design information required by engineers and designers. Revised edition. Chicago: American Technical Society, 1943. 435 p. illus. 21 cm. \$3.75. 3913

Contents: An introduction to plastics. Phenolic plastics. Urea or amino plastics. Cellulose plastics. Acrylic, vinyl and styrene plastics. Cast phenolic and protein plastics. Other plastic materials. Cold-molded plastics and shellac. Laminated plastics. Compression and transfer molding. Injection molding and continuous extrusion. Finishing and decorating plastic products. Selecting materials for molded products. Design of molded products. Synthetic rubber. Low-pressure laminating. Trends and developments. General properties and uses for molded plastics materials. Index.

Note: This volume was written as a textbook for industrial schools, and as a reference book for designers. It is not intended to give a detailed study of the chemistry of plastics. Treatment is given to history, origin, and raw material sources, physical, chemical, and electrical properties and limitation, fabrication and design. Chapters on types of plastics have footnote lists of United States trade marks and manufacturers. The chapters on synthetic rubber, low-pressure laminating and trends and developments are new in this edition. Other minor changes have been made.

ELLIS, CARLETON

The chemistry of synthetic resins. New York: Reinhold Publishing Corporation, 1935. 2 v. in 1. illus. 23 cm. \$20.00. 3914

Contents: Volume I: Definitions, classifications. Need for synthetic resins and types desired. The resinous state. Nature of resins formation. Cumaron and indene. Production of cumaron resins. Applications of cumaron resins. Resins from acetylene. Polymerization of hydrocarbon olefins and diolefins. Resins from petroleum. Polystyrene and related resins. Miscellaneous resins from hydrocarbons and from phenols. Phenol-aldehyde resins. Modified phenol-aldehyde resins. Uses of phenol-aldehyde resins. Aldehyde resins. Furfural resins. Ketone resins. Ureaformaldehyde resins. Urea resins. Thiourea resins. Modified urea resins. Amine-aldehyde resins. Sulphonamide-aldehyde resins. Miscellaneous nitrogen-containing resins. Resins from wood and from carbohydrates. Hardened rosin. Natural resin esters. Uses of natural resin esters. Volume II: The diene synthesis. Polyhydric alcohol-polybasic acid resins. Alkyd resins. Modified alkyd resins. Alkyd resin salts. Alkyd resins. Drying-oil alkyd resins. Alkyd resins in moulding compositions. Miscellaneous resins containing oxygen linkages. Polyvinyl esters. Polyvinyl alcohol. Polyacrylic acid and its derivatives. Resins from rubber. Resins from halogenated compounds. Plastic sulfur. Sulfur-olefin resins. Sulfur-phenol and sulfur-aniline resins. Various sulfur-treated (vulcanized) products. Resin-like materials from fatty oils and miscellaneous vegetable oils. Inorganic resins. Miscellaneous resins. Analytical and physical tests of synthetic resins. Preparation of hot-molding compositions. Cold molding. Molding equipment. Methods of molding. Testing of laminated and molded materials. Testing of synthetic resin coatings. Trade names list. Indexes.

Note: In order to include the theoretical and practical developments, relating to synthetic resins, which took place after the publication of the author's *Synthetic resins and their plastics*, New York, 1923, this edition had to be increased from the original 514 pages to 1614 pages. It brings together extensive data and references to periodical literature, which will serve as a guide to research workers and practitioners in the field of synthetic resins and plastic materials. The section on plastic molding has been considerably enlarged and numerous footnotes constitute an extensive bibliography. There is a trade name index and separate author and subject indexes.

LEADERMAN, HERBERT

Elastic and creep properties of filamentous materials and other high polymers. With a foreword by Harold deWitt Smith. Washington, D.C.: The Textile Foundation, 1943. 278 p. illus. 26 cm. Paper, \$2.00. 3914a

Contents: Foreword. Preface. Part I, Creep and structure: Primary creep and the superposition principle. Mechanical models and the Wiechert theory. The structure of high polymers. Part II, Elastic and creep properties of filamentous materials: Experimental investigation of the creep properties of filamentous materials. The creep properties of silk and rayon filaments under standard conditions. Creep properties of acetate rayon: temperature effect. The creep properties of nylon. Bibliography. Index.

Note: This book is a technical report for specialists concerned with plastic materials and synthetic fibers. Its object is to discuss in detail certain fundamental mechanical properties of high polymers and the relation of these properties to structure. The volume is concerned almost entirely with the significance of time in the laws of mechanical deformation of high polymeric materials. Part I deals with the historical and theoretical aspects of the study of the time-effect and considers the general relation between load, time, deformation, and structure. Part II deals chiefly with an experimental investigation of the time-effect in filamentous materials under longitudinal load, in which the procedures developed in Part I are used.

MANSPERGER, DALE E., AND CARSON W. PEPPER

Plastics, problems and processes. Second edition, edited by William H. Varnum. Scranton, Pa.: International Textbook Company, 1942. 350 p. illus. (part col.) 23 cm. (The Arts and industries series, W. E. Warner, consulting editor) \$3.00. 3915

Contents: The story of plastics, kinds of plastics. Materials, production and application of plastics. Tools, equipment, and supplies. Forming and shaping operations. Surfacing, finishing, and assembling operations. Design for plastics. Hand-work problems. Machine-work and hand-work problems. Supplementary information on common plastics. Equipment and supplies. Glossary. Bibliography. Index.

Note: A textbook prepared for the orientation of students planning a career in the plastics industries. Considerable new material with added emphasis on design adapts the new edition to use in fine arts and practical arts on a college level, as well as for junior-senior high schools. There are 65 problem plates, 453 figures, and a bibliography.

POWERS, PAUL ODELL

Synthetic resins and rubbers. New York: John Wiley & Sons, Inc., 1943. 296 p. illus. 22 cm. \$3.00. 3916

Contents: Theories of polymer formation: Introduction and statistics. Principles of resin formation. Condensation polymers: Phenol aldehyde resins. Urea and melamine formaldehyde resins. Vinyl polymers: Polyvinyl acetate resins; polyvinyl chloride and polyvinylidene chloride resins; acrylate and methacrylate resins; polystyrene; hydrocarbon resins. Synthetic rubbers: polychloroprene, polybutadiene; polysulfide and polybutene rubbers. Resins from natural products; cellulose nitrate; cellulose esters of organic acids; cellulose ethers; resins and rubbers. Application of synthetic resins; solvents and plasticizers for synthetic resins; application of synthetic resins as plastics; use of synthetic resins in protective coatings. Index.

Note: The chemistry of synthetic resinous materials and the raw materials from which they are made is discussed in this book. Besides the chemistry of the reactions and their complete structural formulas, there are also given a history of those reactions, numerous charts and tables, and methods of manufacture and commercial uses of the products. The polymers are divided into four major groups, with a thorough discussion of each; the polymers of commercial importance are described at greater length, however, than those of only theoretical interest. The chapter on synthetic rubbers was written by Dr. K. H. Weber.

RAHM, LOUIS FRANK

Plastic molding; an introduction to the materials, equipment and methods used in the fabrication of plastic products. New York: McGraw-Hill Book Company, Inc., 1933. 246 p. illus. 23 cm. \$3.00. 3917

Contents: Part I, The molding process and the plastics: The molding process. The plastics. Part II, Molds. Types and uses. Style. General design details. Special details. Die hobbing. Part III, Operating equipment: Molding presses. Accessory equipment. Part IV, The molding equipment: Plant equipment.

Note: Offers the manufacturer and the user of molded products an explanation of how plastic materials are molded, suggestions on the selection of proper materials, information on the construction and maintenance of equipment, and descriptions of various methods now employed by leading manufacturers.

SASSO, JOHN

Plastics for industrial use, an engineering handbook of materials and methods. New York: McGraw-Hill Book Company, Inc., 1942. 229 p. illus. 23 cm. (Product development series) \$2.50. 3918

Contents: Types available, basic compounding materials. Comparative properties of plastic materials. Basic principles of molding and molded sign. Principles of design, Common faults, causes and remedies in molded parts. Machining and finishing plastic parts. Phenolic plastics. Cast phenolics. Urea plastics. Acrylic plastics. Polystyrene materials. Vinyl plastics. Vinylidene chloride. Cellulose acetate plastic. Ethyl cellulose. Laminated plastics. Plywoods and adhesives. Appendix: Directory of trade names, suppliers, and molders.

Note: The emphasis in this book for design engineers and others concerned with the use of plastic materials in industry is on properties and methods of molding and finishing. Chemistry is discussed only when it affects performance.

SIMONDS, HERBERT RUMSEY, AND CARLETON ELLIS

Handbook of plastics. New York: D. Van Nostrand Company, Inc., 1943. 1082 p. illus. 24 cm. \$10.00. 3919

Contents: Part I, Introduction: Survey of the industry. Part II, Physical properties of plastics: Tables of properties of plastics. Test methods for physical properties. Plastics catalogues. Part III, Materials: Ingredients of the plastics mix. Plastics materials. Synthetic textile fibers. Synthetic rubbers and elastomers. Natural resins. Films. Plywood. Synthetic coatings. Part IV, Manufacture of plastics: Manufacturing process. Plastics plant equipment. Part V, Processing and fabrication: Methods of processing and fabrication. Methods of finishing plastics. Equipment for molding plants. Molds. Part VI, Chemistry of plastics: Chemistry of plastics. Analysis of plastics. Part VII, Applications of plastics: Plastics in industry. Designing molded plastics parts. Part VIII, Commercial considerations: Plant practice. Selection of materials. Estimating and paper work in the plastics industry. Part IX, Appendix. Tables. Glossary. Bibliography.

Note: This comprehensive reference manual was prepared with the cooperation of an advisory committee from the plastics industry, to supply the facts and figures most frequently used by the chemists, engineers, and plant men engaged in manufacturing plastics or in fabricating products from them. It covers the chemical and physical properties of the various types of plastics, their raw materials, manufacture and finishing, their use in the production, by various processes, of many varieties of plastic parts and articles, and, also, the business aspects of the industry.

SIMONDS, HERBERT RUMSEY

Industrial plastics. Second edition. New York: Pitman Publishing Corporation, 1941. 400 p. illus. 23 cm. \$5.00. 3920

Contents: Introduction to the plastics industry. Basic materials. Ten important plastics. Molding practice. Fabrication of plastics. Physical properties of plastics. Plastics and metals.

Equipment and plant. Industrial applications. Other plastics and borderline materials. Design and plastics. Future of plastics. Foreign practice. Chemistry of plastics. Plastics trade names and trademarks. Index.

Note: Written primarily for the user and prospective user of industrial and structural materials, but suitable also for technical schools. The composition, physical properties, fabrication, design, and application of plastics are discussed. Fourteen pages are occupied by the listing of trade names, with the types of plastic used and the manufacturers. The second edition incorporates advances in the industry made between 1939 and 1941, with new material on the chemistry of plastics, plastics in wartime, new fibres and bristles, together with several new illustrations and charts.

THAYER, GORDON B.

Plastic molds: design, construction, use. Second edition. Cleveland, O.: American Industrial Publishers, 1944. 136 p. illus. 23 cm. \$3.50.

3920a

Contents: Introduction: definition, requirements, types, factors. Suggestions on design procedure. Types of molds for compression molding. The design of a simple compression type mold. The design of a split cavity compression type mold. The design of a side-opening compression mold, by F. G. Woodiwiss. Design of a transfer type mold. The design of a simple injection type mold. The design of a stripper-plate injection mold. The design of a loose-bar injection mold. An injection mold for a plastics lens, by C. Huber Whitlock. Loading the injection mold, by Don F. Hoffman. Direct ejector systems for injection molds, by Don F. Hoffman. Indirect ejector systems for injection molds, by Don F. Hoffman. Molding screw threads in plastics. Standard mold bases, by Don F. Hoffman. Methods of mold sinking. Mold building methods and equipment. Finishing methods and equipment. Practical points in mold design and construction. Shrinkage charts. Nomenclature of plastics molding. Index.

Note: The first edition of this work appeared in 1941 under the title *Plastics mold designing*. The second edition is revised and enlarged, with contributions by other specialists in the field. The work is a reference manual on the technical aspects of the design, construction, and use of plastic molds, and is intended for engineers, designers, and molders dealing with plastic molds.

WEIL, BENJAMIN HENRY, AND VICTOR J. ANHORN

Plastic horizons. Lancaster, Pa.: Jaques Cattell Press, 1944. 169 p. illus. 20 cm. (Science for war and peace series) \$2.50.

3921

Contents: What are plastics? Plastics and our modern world. Plastics in a world at war. Synthetic fibers and synthetic rubbers. Plastics and the future. Names, chemical types, and manufacturers of familiar plastics and related materials. Index.

Note: A short book for general readers on present and probable future uses of plastic materials.

Petroleum Chemistry

AMERICAN SOCIETY FOR TESTING MATERIALS

A.S.T.M. standards on petroleum products and lubricants (with related information). Prepared by A.S.T.M. Committee D-2 on petroleum products and lubricants. Methods of testing, specifications, definitions, charts and tables. October, 1944. Issued annually. Philadelphia: The American Society for Testing Materials, 1944. 514 p. illus. 23 cm. Paper, \$2.75.

3921a

Contents (abridged): Report of Committee D-2. Standards and tentative standards: Methods of test, specifications, definitions, recommended practices, and tables for various petroleum products and lubricants. Index.

Note: This pamphlet brings together in convenient form the 1944 Report of Committee D-2, the various A.S.T.M. standard and tentative methods of test, and the regulations and a list of personnel of the Committee. Several proposed test methods are also included in draft form.

AMERICAN SOCIETY FOR TESTING MATERIALS

Conversion tables for kinematic and Saybolt universal viscosities. Based on and amplified from A.S.T.M. standard method for conversion of kinematic viscosity to Saybolt universal viscosity (D 446 - 39). Philadelphia: The American Society for Testing Materials, 1940. 10 p. 22 cm. \$0.25.

3921b

Note: These tables afford a quick means of converting from kinematic to Saybolt universal viscosity. The tables range from 2.00 to 330.0 centistokes, and from 32.60 to 1524.6 Saybolt seconds at 100°F and at 210°F. Intended for use with A.S.T.M. Standard D 446. Multipliers are provided for determining Saybolt universal viscosity equivalents for kinematic viscosities higher than those given in the tables.

AMERICAN SOCIETY FOR TESTING MATERIALS

Viscosity index tables. Based and amplified from A.S.T.M. tentative method for calculating viscosity index (D 567-40 T). Philadelphia: The American Society for Testing Materials, 1940. 31 p. 23 cm. \$0.50.

3921c

Note: These reference tables, providing viscosity indexes of the effect of change of temperature on the viscosity of an oil, are calculated from basic Saybolt universal viscosity values as given in A.S.T.M. method D 567. The tabulated figures show Saybolt values in seconds at 100° F corresponding to single even units of viscosity index for each whole second Saybolt universal viscosity as 210° F from 40 to 161 seconds, inclusive.

BORGSTROM, PARRY, AND OTHERS

Bibliography of organic sulfur compounds (1871-1929) by P. Borgstrom, R. W. Bost, and D. F. Brown. New York: American Petroleum Institute, 1930. 187 p. 23 cm. \$4.00.

3922

Note: The literature and patent references listed in this book present a concise summary of the available publications as of 1930 on sulfur chemistry related to the petroleum industry. The work is based on an examination of the *Journal of the Chemical Society (London)* for the period 1871 to 1907 inclusive, and of *Chemical abstracts* for the period 1907 through 1929. Each patent reference has been checked with the official patent file in the United States Patent Office at Washington, D.C. The literature references have been classified into 34 groups based on the chemical classification of the subject-matter, such as sulfides, thiosulfates, sulfonic acids, etc., with publications listed by author within each group. The patent references cover only United States patents between 1852 and 1929 and are listed by patent number. The index lists only authors and firms.

CROSS, ROY

A handbook of petroleum, asphalt and natural gas; physical and chemical properties, specifications, methods of analysis, economics and statistics, refining processes, patents, tables and bibliography. 1931 revision. Kansas City, Mo.: Kansas City Testing Laboratory, 1931. 864 p. illus. 20 cm. (Kansas City Testing Laboratory. Bulletin no. 25) \$7.50.

3922a

Contents: Economics of petroleum. Transportation, storage and gauging. Properties of crude petroleum. Refining and cracking of petroleum. Properties of refined petroleum. Fuel oil. Oil shale. Asphalt. Natural gas. Methods of analysis. Tables. Patents and publications. Addenda. Index.

Note: This reference handbook sets forth in condensed form the technical and statistical information on the production, properties, handling, refining, and methods of evaluation of petroleum and related products. It is intended for the practical oil man and the student of petroleum engineering as a source of quick reference. No attempt has been made to incorporate matter found in the usual engineering handbooks, but rather the aim was to include data not found in such publications. The revised edition

contains new statistics and additional material on gasoline and lubricants, octane number hydrogenation, properties of crude oils from new pools, and other data, some of which has of course been superseded by developments since 1931.

ELLIS, CARLETON

The chemistry of petroleum derivatives. New York: Reinhold Publishing Corporation, 1934-37. 2 v. 23 cm. Vol. I, \$18.00; Vol. II, \$20.00.

3923

Contents (abridged): Chemical nature of petroleum and natural gas. Cracking processes and their products. Production of aromatic hydrocarbons. Carbon black industry. Direct hydration of olefins to alcohols. Properties and uses of isopropyl alcohol. Production, properties, and uses of ketones. Reactions of olefins with halogens. Production, properties, and uses of haloalcohols, simple glycols, olefin oxides. Some important reactions of diolefins. Halogenation of methane, cycloparaffins, and benzene. Oxidation of methane, unsaturated hydrocarbons, and aromatic hydrocarbons. Analysis of natural gas.

Note: A comprehensive survey of the work which has been done by investigators regarding the preparation and chemical utilization of aliphatic hydrocarbons. The author has attempted to have his references to literature and patents on the subject as complete as possible. Volume two is actually a supplement to volume one, for it continues the subject matter of the earlier volume, and except for new material on petroleum asphalts, petroleum hydrocarbons, and the application of thermodynamics to petroleum technology, the chapter headings are the same. Each volume contains separate author and subject indexes.

GRUSE, WILLIAM ARTHUR, AND DONALD R. STEVENS

The chemical technology of petroleum (published formerly as *Petroleum and its products*). Second edition. New York: McGraw-Hill Book Company, Inc., 1942. 733 p. illus. 23 cm. (Mellon Institute technochemical series) \$7.50. 3924

Contents: Composition, classification, and description of crude petroleum. Chemical composition of petroleum. Group reactions of petroleum oils. Physical properties. Production chemistry. Origin of petroleum. Distillation. Refining by chemical methods. Refining by physical methods. Cracking of petroleum oils. Chemical thermodynamics of petroleum hydrocarbons. Gasoline and other motor fuels. Kerosene. Lubrication and petroleum lubricants. Paraffin, amorphous waxes and petrolatum. Fuel oils. Petroleum asphalts. Miscellaneous petroleum products and by-products. Appendix: Physical properties of hydrocarbons.

Note: A discussion of the properties, refining, and utilization of petroleum from the chemical viewpoint. Compared to *Petroleum and its products*, this volume is extensively revised. New chapters have been added on thermodynamics as applied to the problems of hydrocarbon chemistry, production chemistry, etc.; and new material has been included on distillation, physical properties, motor fuels, lubricants, cracking, crude oils, refining of oil stocks, etc.

JAPOUR, MAXCINE J.

Petroleum refining and manufacturing processes. Refining processes, grease manufacturing, petroleum specialties, by-products. Los Angeles, Calif.: Wetzel Publishing Co., Inc., 1939. 310 p. illus. 23 cm. \$5.00. 3925

Contents: Petroleum. Gasoline. Ethyl gasoline. Naphtha. Natural gas and gasoline. Kerosene. Aluminum chloride. Synthetic solvents. Lubricating oil. Paraffin. Asphalt and road oils. Fuel oil. Greases. Recommendations. Questions and answers from leading technical men. Useful data. Index.

Note: The object of this reference work is to offer in a compact form to the petroleum worker the fundamentals of the refinery industry, a general knowledge of petroleum products, and the application of petroleum to various industries. The material is based on information appearing in trade journals, manufacturer's specifications, and pertinent literature of the field. The treatment is semi-technical. The tables include data on temperature correction for petroleum oils, specific gravities, thermometer conversion scales, and other information.

KALICHEVSKY, VLADIMIR ANATOLE

The amazing petroleum industry. New York: Reinhold Publishing Corporation, 1943. 234 p. illus. 19 cm. \$2.25. 3926

Contents: Preface. Introduction. The production and nature of petroleum. Transportation and storage. Petroleum emulsions and natural gas. Gasoline and crude oil distillation. Cracking. Hydrogenation and aviation gasoline. Chemical treatment of light petroleum products. Chemical treatment of lubricating oils. Wax, asphalt, and greases. Waste refinery products. Chemicals from petroleum. Glossary. Treatises on petroleum. Index.

Note: A brief outline of the existing petroleum manufacturing processes, intended to assist college students and young engineers beginning a career in the petroleum industry. Technical details are omitted in the elementary description of processes, such as polymerization, isomerization, and chemical refining.

KALICHEVSKY, VLADIMIR ANATOLE, AND BERT ALLEN STAGNER

Chemical refining of petroleum; the action of various refining agents and chemicals on petroleum and its products. Revised edition. New York: Reinhold Publishing Corporation, 1942. 550 p. illus. 24 cm. (American Chemical Society monograph series. No. 63) \$7.50. 3927

Contents: General introduction. Preface to first edition. Preface to revised edition. Composition of petroleum. Treatment with sulfuric acid. Sulfuric acid sludge and hydrogen sulfide; recovery and manufacture of sulfuric acid. Treatment with alkaline reagents. Sweetening operations, elimination of elemental sulfur, and reduction of total sulfur in light distillates. Refining by adsorption. Refining with solvents. Detonation and antidetonants. Inhibitors of atmospheric oxidation of petroleum products. Antioxygens. Gums and cracked petroleum products. Deterioration of lubricating and similar oils. Addition agents. Supplementary list of United States patents on petroleum refining. Appendix. Special tables. Patent index. Author index. Subject index.

Note: Proposed and commercially practiced processes used in refining petroleum and its products are presented for students, petroleum chemists, and technologists. A general survey of data and investigations in chemical refining but only those processes in common industrial use are discussed in detail. Excellent bibliographies are given at the end of each chapter.

KALICHEVSKY, VLADIMIR ANATOLE

Modern methods of refining lubricating oils. New York: Reinhold Publishing Corporation, 1938. 235 p. illus. 23 cm. (American Chemical Society monograph series. No. 76) \$6.00. 3927a

Contents: Preface: Properties of refined oils. Modern refining methods. Petroleum waxes. Dewaxing with filter-aids. Solvent dewaxing. Removal of oil from petroleum waxes. Asphaltic substances. Conventional deasphalting methods. Deasphalting with solvents. General principles of solvent refining processes. Variables involved in refining oils with selective solvents. Single solvents. Mixed solvents. Double solvents. Disposal of solvent extracts. Four point depressants. Viscosity index improves. Oiliness carries. Oxidation inhibitors. Fluorescence. Appendix. Patent index. Author index. Subject index.

Note: Written for the petroleum chemist and technologist, this book reviews modern refining methods and classifies proposed commercial processes. Although only those means of refining actually practiced in industry are covered, additional or substitute methods can be followed up through the bibliographies. Pertinent tables and charts accompany the text.

KLEMGARD, EDWIN NEAL

Lubricating greases: their manufacture and use. New York: Reinhold Publishing Corporation, 1937. 873 p. illus. 23 cm. \$15.00. 3927b

Contents: Preface. Introduction. Colloidal nature of lubricating greases. Materials used in grease manufacture. Theory of lubricating grease manufacture. Grease manufacturing equipment and plant. Calcium base greases. Sulf greases. Sodium base greases. Aluminum base greases. Lead base greases. Miscellaneous metallic soap base greases. Inorganic-hydrocarbon lubricants.

Organic lubricants and extreme-pressure compounds. Miscellaneous organic lubricants. Grease plant management and research. Appendix: Analytical methods and tests. Indexes.

Note: A compilation of practical and scientific data on the manufacture and uses of lubricating greases for grease research chemists and lubrication technologists. Although based on the author's *Lubricating greases*, New York, 1927, it bears little resemblance to the earlier work. It now discusses greases marketed in Europe, Asia, and the United States, provides material on the chemical and physical characteristics of grease-making materials, and presents the fundamental theories of grease manufacture and the dispersion of soaps in oil. Literature of the subject and patents are cited as bibliographic footnotes.

NELSON, WILBUR LUNDINE

Petroleum refinery engineering. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 715 p. illus. 23 cm. (Chemical engineering series) \$6.00. 3928

Contents: Chemical engineering and petroleum engineering. History and development of refining. Introduction to processing. Composition of petroleum. Routine laboratory tests. Design data and the laboratory. The evaluation of oil stocks. Physical properties of petroleum oil. Refinery products. Fluid mechanics. Combustion. Heat and material balances. Heat transfer. Vaporization and condensation. Countercurrent operations. Corrosion. Thermal decomposition (cracking). Rebuilding hydrocarbons. Distillation processes. Auxiliaries to processing. Exchangers, coolers, condensers, and steam heaters. Tubestill heaters. Fractionating towers. Cracking and other chemical processes. Natural gasoline. Chemical and clay treatment. Solvent treating or extraction processes. Dewaxing. Economics of design. Typical design calculation. Appendix. Index.

Note: A treatment from the viewpoint of the chemical engineer of the processing of petroleum and the design and operation of equipment. The book is designed for engineering students, plant superintendents, engineers, and chemists. The second edition represents a revision of the text, with new chapters on rebuilding hydrocarbons, auxiliaries to processing, and extraction processes. An appendix, containing tables which provide pounds per gallon, specific gravities, and degrees A. P. L., has also been added.

ROHMAN, ARTHUR, AND JUSTUS M. KRAPPE, EDITORS

Handbook of butane-propane gases. Third edition. Los Angeles, Calif.: Western Business Papers, Inc., 1942. 342 p. illus. 30 cm. \$5.00. 3929

Contents: Part I, Introduction: The progress of the industry. The ABC of LP-gas. Part II, Physical and chemical properties: Properties of the hydrocarbons in LP-gas. Properties of butane-propane mixtures. Volume correction factors. Analytical determination and testing. Fire protection and control. Part III, Production of LP-gas: Natural gasoline plants, recycling plants, oil refineries. Part IV, Transportation and storage: Delivery by truck, rail, water, and pipe line. Storage tank and pressure vessel design. Liquid metering and pumping systems. Part V, Distribution of LP-gas: Installing and servicing LP-gas systems. Semi-bulk systems. Bottled gas systems. Gas utility service from central plants. Multiple utility service from a central plant. Part VI, Utilization of LP-gas: Comparative performance with other fuels. Appliance installation and testing. Domestic, commercial, and industrial applications. Enrichment, peak load, and standby uses. A fuel for internal combustion engines. Part VII, Regulations. Part VIII, Appendix. Indexes. Catalogue. Buyers' guide.

Note: A comprehensive reference volume containing information and data on the approved methods and processes of the liquefied petroleum gas industry. It is intended for the industrial engineer and plant operator as well as the dealer and distributor who are engaged in the liquefied petroleum gas industry. Properties, tests, processes, uses, and advantages are described in detail, with numerous charts, tables, and illustrations. The third edition contains new photographs and statistical data covering the years 1938 to 1942.

SACHANEN, ALEXANDER NICHOLAS

Conversion of petroleum; production of motor fuels by thermal and catalytic processes. New York: Reinhold Publishing Corporation, 1940. 413 p. illus. 23 cm. \$6.00. 3930

Contents: Thermal and catalytic reactions of hydrocarbons. Fundamental factors of cracking. Fundamental factors of hydrogenation. Cracking equipment. Cracked gasoline. Treatment of cracked gasolines. Cracked products other than gasoline.

Note: A technical account of the fundamental principles and practices of converting petroleum products into gasoline and other fuels. Due to the large amount of material on the subject, the author refers to, and discusses, only those works which he considers the most important. References to patents have also been omitted. A bibliography is included in each chapter, and there are separate author and subject indexes.

SAGE, BRUCE HORN BROOK, AND WILLIAM N. LACEY

Volumetric and phase behavior of hydrocarbons. Stanford University, Calif.: Stanford University Press, 1939. 299 p. illus. 23 cm. \$5.00. 3930a

Contents: List of symbols. Introduction. Some mathematical concepts. Behavior of pure substances. Two-component systems. Three-component systems. Multi-component systems. The phase rule. Partial quantities. Ideal solutions. Appendix. Index.

Note: The phenomena discussed in this study are general in character, but the emphasis and the many illustrations relate to hydrocarbons. These substances furnish examples of the type of behavior treated and, as a group, their behavior has been extensively studied experimentally. The hydrocarbons, furthermore, constitute the working medium of the petroleum and natural gas industries. They are important in the processes of petroleum and natural gas production and transportation, of natural gasoline manufacture, and of certain parts of petroleum refining. Throughout the operation of these industries volumetric and phase changes occur. The intelligent control of these operations depends upon a thorough knowledge of the principles discussed in this book.

VAN WINKLE, MATTHEW

Aviation gasoline manufacture. New York: McGraw-Hill Book Company, Inc., 1944. 275 p. illus. 21 cm. (Pennsylvania State College. Mineral industries series) \$3.00. 3931

Contents: History and development of aviation fuel. Development of aviation fuel, 1930 to 1942. Specifications and test methods on aviation fuels. Hydrocarbons in aviation fuel and in aviation-fuel manufacture. The production of aviation-fuel base stocks. Manufacture of high-antiknock hydrocarbons. Production of finished aviation gasolines. Special aviation fuels and aviation-fuel components. Performance of aviation gasolines. Appendix: Test methods for evaluation of aviation fuels. Index.

Note: In this book the author has prepared a logically organized text and reference book in the specialized field of aviation gasoline manufacture. It treats the manufacture of base stocks, high octane hydrocarbons, the finished fuels, special fuels, and the characteristics of such fuels in use in aircraft engines. The book also covers processes used, specifications, tests, etc. Lists of pertinent literature including patents are appended to each chapter.

Explosives

BEBIÉ, JULES

Manual of explosives, military pyrotechnics, and chemical warfare agents; composition, properties, uses. New York: The Macmillan Company, 1943. 171 p. 22 cm. \$2.50. 3932

Contents: Nomenclature, arrangement, and abbreviations. Introduction. Explosives, military pyrotechnics, and chemical warfare agents. Bibliography. Patents.

Note: The chemistry and structural formulae for about 500 war chemicals, including approximately 350 explosives and 150 pyrotechnics, are given in this manual, together with brief information about their uses and the precautions necessary in their handling. The explosives are listed alphabetically under their chemical names, with cross references under trade names, American and foreign warfare symbols, etc. An introduction describes the discovery, development, and uses of explosives and current trends in the explosives industry.

CLIFT, GEORGE DIXON, AND B. T. FEDOROFF

A manual for explosives laboratories. Philadelphia: Lefax Society, Incorporated, 1943-44. 3 v. illus. 17 cm. Vol. I, \$2.00; Vol. II, \$2.25; Vol. III, \$2.00; all three volumes, \$5.75. 3933

Contents: Volume I: Acids. Laboratory practice. Manufacture of T.N.T. acids. Toluene tests. Trinitrotoluene tests. Purification of crude T.N.T. Impurities in crude T.N.T. Nitration of toluene. Analysis of commercial acids. Dinitrotoluene. Nitroglycerine. Nitrocellulose. Amatol. Picric acid. Nitrostarches. Tetryl. Black powder. Primers. Bibliography. Volume II: Explosive compounds and allied substances; a descriptive list. Volume III: Comprising supplements number One and Two. Index.

Note: These three volumes present condensed data in loose-leaf form for reference use in emergency training programs where chemists who have not previously specialized in explosives must be quickly trained in the manipulation, analysis, and preparation of explosive compounds. Volume I deals with the manufacture and properties of T.N.T., D.N.T., nitroglycerine, and related explosives. Volume II contains in alphabetical order a list of various explosive substances and materials connected with the preparation of them, together with references to the existing literature, the physical and chemical properties, Beilstein system number, and specialized uses. Corrections and additions to the contents of the first two volumes are included in Volume III, which includes abstracts of current literature on explosives through 1943 together with a general index for all three volumes.

DAVIS, TENNEY LOMBARD

The chemistry of powder and explosives. New York: John Wiley & Sons, Inc., 1943. 490 p. illus. 22 cm. \$4.50. 3934

Contents: Properties of explosives. Black gunpowder. Pyrotechnics. Aromatic nitro compounds. Nitric esters. Smokeless powder. Dynamite and other high explosives. Nitroamines and related substances. Primary explosives, detonators, and primers. Index.

Note: An exposition, for trained chemists, of the modes of behavior of explosive substances and the phenomena, both chemical and physical, which they exhibit. It presents the properties, classification, and tests of explosives. The first half of the book is elementary in the sense that it contains nothing which is not the common knowledge of those who are skilled either in chemistry or in the manufacture and use of explosives. The second half supplies a basis for an understanding of manufacturing processes and analytical tests, as well as an insight into their interpretation and significance. This edition represents a combination, without change of text, of Volume I published in 1941 and Volume II published in 1943.

MEYER, MARTIN

The science of explosives; an introduction to their chemistry, production and analysis. New York: Thomas Y. Crowell Company, 1943. 452 p. illus. 22 cm. \$4.50. 3935

Contents (abridged): A general survey. The nature of explosives. Black powder, pyrotechnics, and incendiaries. Nitrocellulose and other nitropolysaccharides. Nitroglycerine and related explosives. Elementary theory of explosive action. Grain size and shape. The problem of nitration. Sulphuric acid. Nitric acid, the fixation of nitrogen, and ammonium nitrate as an explosive. Smokeless powder. T.N.T. nitro compounds in general, and other explosives, including gases. Chemistry of initiators; explosion flame. Practical explosive devices. Practical initiating devices. Inspection and analysis. Application and use. Packing, shipping, storage, and safety. Bibliography. Tables: temperature correction for barometric readings; vapor tension of water; summary of characteristics of explosives; logarithms; units of work and energy. Index.

Note: The principal purpose of this work is to furnish a single source of information in the field of explosives. As a consulting chemist, the author has emphasized a fundamental and practical viewpoint and avoided making this a textbook on synthetic organic chemistry or a treatment of special topics in organic chemistry.

OLSEN, ALLEN LESLIE, AND JOHN W. GREENE
Laboratory manual of explosive chemistry.

New York: John Wiley & Sons, Inc., 1943. 106 p. illus. 22 cm. \$1.75. 3936

Contents: Safety. Propellants, raw materials. Propellants, nitrocellulose and smokeless powder. High explosives. Primers, igniters, and initiators. Appendix: Sampling. Index.

Note: Specialized information on explosive chemistry is available in this manual. It offers factual information, descriptions of laboratory procedures, and explanations of important manipulative techniques. Wherever possible experiments involving cellulose in preference to nitrocellulose, and trinitrotoluene in preference to tetryn have been chosen. The analysis of smokeless powder represents the best current practice. The discussion of testing is carefully arranged to proceed from the non-hazardous and elementary to the more hazardous procedures. Explanatory notes following each test include many details for making the experiments successful. These notes tell what results are to be expected, and what variations from these results will mean in the performance of the final product.

ROBINSON, CLARK SHOVE

Explosions, their anatomy and destructiveness. New York: McGraw-Hill Book Company, Inc., 1944. 88 p. illus. 21 cm. \$1.50. 3937

Contents: What is an explosion? How an explosion starts. How detonation of an explosion progresses. The results of detonation. Missiles from explosions. Earthwaves from explosions. Craters from explosions. The effect of explosion blast on structures. The effect of missiles on structures. Seismic effects on structures. A study of some notable explosions.

Note: This book deals with the destructiveness of bombs and shells in warfare, and with the effects of accidental explosions in munition plants and elsewhere. The book describes the sequence of events that lead up to an explosion, the phenomena produced, and the results of these phenomena on the surroundings. A feature is the discussion and analysis of 125 notable explosions. The book is based on lectures given in the fall of 1943 to members of a branch of the United States Army Service Forces.

WEINGART, GEORGE WASHINGTON

Pyrotechnics, civil and military. Brooklyn, N.Y.: Chemical Publishing Co., Inc., 1943. 220 p. illus. 22 cm. \$5.00, U.S.; \$5.40, foreign countries. 3938

Contents (abridged): Ingredients. Manipulation: tools and appliances used. Articles of manufacture and formulas. Exhibition fireworks. Glossary. List of pyrotechnical books.

Note: A revised and reset edition of the author's *Pyrotechny*, 1939, which in turn was based on his *Dictionary and manual of pyrotechny*. A considerable amount of new material, including a glossary and a bibliography, has been added, and the format of the book has been much improved. The terminology is now technical. The material and style of treatment are designed for persons interested in the manufacture of fireworks and other pyrotechnical devices.

Ceramics

ANDREWS, ANDREW IRVING, AND RALPH L. COOK

Enamel laboratory manual. Champaign, Ill.: The Garrard Press, 1941. 64 p. 23 cm. \$1.25. 3939

Contents: Introduction. Laboratory technique. Laboratory notes and reports. Raw materials. Enamel calculations. Enamel grade iron and steel. Cleaning and pickling. Sheet iron ground coats. Properties of enamel slips. Sheet iron cover enamels. Dry process cast iron enamels. Wet process cast iron enamels. Special problem. Laboratory equipment. Definitions of enamel terms. Miscellaneous tables.

Note: An introductory handbook for the student of the technique of porcelain enamels. Includes fundamental information on materials used, methods of making and applying enamels, methods of control in manufacture, and properties of enamels.

ANDREWS, ANDREW IRVING

Enamels. The preparation, application, and properties of vitreous enamels. Champaign, Ill.: The Twin City Printing Company, 1935. 410 p. illus. 23 cm. \$5.50. 3940

Contents: The history of enameling. Raw materials for enamels. Fundamental considerations. Cast iron, sheet iron and steel. Preparation of metal surfaces for enameling. Enamel calculations. Enamel compositions. Frit making. Milling and mill additions. Application and control. Firing (burning). Enamel properties and tests. Appendix. Index.

Note: A text and reference book for the industrial man and the student, presenting the technology of enameling based upon a summary of the literature of the field and upon the author's experience. The text is written in a fairly simple style and complicated physical or chemical theory is avoided, the emphasis being upon the description of modern processes of manufacture. There are 62 tables of data and footnote references to bibliographic sources.

HANSEN, JAMES EDWARD, EDITOR

A manual of porcelain enameling. Cleveland, O.: Published for the Ferro Enamel Corporation by the Enamelist Publishing Company, 1937. 513 p. illus. 23 cm. \$5.00. 3941

Contents: History of the art, by R. A. Weaver. Design and fabrication of sheet iron parts, by L. B. Hart. Cast iron for enameling purposes, by R. B. Schaal. Preparation of metal surfaces, by A. H. Haessler. Enamel mill room practice, by J. E. Hansen. Mill additions, by M. J. Bahnsen. Water and air supplies for enameling plants, by J. T. Irwin. Application of enamel, by G. S. Lindsey. Drying, by R. R. Sherrill. Brushing, by C. D. Parkhill. The enameling of signs, by H. C. Beasley. The enameling of hollowware, by G. H. McIntyre. Burning, by H. A. Connor. Inspection, by J. E. Hansen. Decorative effects, by J. E. Hansen. Shop troubles, by L. B. Hart. Process control, by W. N. Noble. Development of enamel furnaces and refractories, by F. S. Markert. Muffle furnace atmosphere and temperature gradient effects, by G. H. McIntyre. Fuels and their combustion in porcelain enamel plants, by J. T. Irwin. Enamel shop construction, equipment, and layout, by E. W. Dany. Enamel plant management, by D. L. Cable. Future of the art, by R. A. Weaver. Enameler's dictionary, by Kenneth Hossack. Useful data. Index.

Note: A revision of the editor's *The technique of vitreous enameling*, Cleveland, 1927, and *The advanced technique of porcelain enameling*, Cleveland, 1932. The present volume, prepared by executives and engineers of the Ferro Enamel Corporation, summarizes the recent approved practices and engineering accomplishments of the industry as of 1937. Intended for the industrial engineer and plant superintendent specializing in porcelain enameling. Bibliographies are given after most of the chapters and there are numerous photographs showing various types of apparatus and procedures.

KOENIG, JOHN HENRY, AND W. H. EARHART

Literature abstracts of ceramic glazes. Chicago: Ceramic Industry, 1942. 285 p. 24 cm. \$4.00. 3942

Note: For this reference work, the literature on glazes was reviewed up to and including 1940. The length of the abstract in each case depends on the value and availability of the source material. The references are arranged by the source from which they were taken and then by date, the latest references appearing first. There is a subject index.

MCCLELLAND, ELLWOOD HUNTER, COMPILER

Enamel bibliography and abstracts, 1928 to 1939, inclusive, with subject and coauthor indexes. Columbus, O.: The American Ceramic Society, Inc., 1944. 352 p. 27 cm. \$5.00. 3942a

Note: This work covers the American and foreign literature, including books, patents, and periodical articles. The abstracts are concise but adequate. The main arrangement is alphabetical by author, but an index of co-authors and an extensive subject index are provided.

NATIONAL RESEARCH COUNCIL. COMMITTEE ON CHEMICAL DATA FOR CERAMISTS

Data on chemicals for ceramic use; formulas, molecular weights, colors, crystal forms, densities, refractive indices, melting points, boiling points, transition points, decomposition temperatures. Based on report of the Committee on Chemical Data for Ceramics, Division of Chemistry and Chemical Technology, National Research Council. Alexander Silverman, chairman. George W. Morey, Frederick D. Rossini. Washington, D.C.: The National Research Council, National Academy of Sciences, 1943. 94 p. 24 cm. (Bulletin of the National Research Council. No. 107, June 1943) \$2.50. 3943

Contents: Introduction. Arrangement. Abbreviations and key to tables. Substances and properties. Bibliography.

Note: This table lists all elements and a large number of compounds alphabetically according to names. Data on physical and chemical properties are given in condensed form. These include atomic weight, crystal form, density at a specified temperature, melting point in degrees Centigrade at 760 mm. pressure, boiling point in degrees Centigrade at 760 mm. pressure, sublimation point in degrees Centigrade, decomposition temperature in degrees Centigrade, refractive index or indexes at room temperatures for the sodium D lines, refractive index for the extraordinary ray, refractive index for the ordinary ray, greatest, intermediate, and least refractive indexes, and chemical formulas. Polymorphic and artificial forms are also indicated. Numbered references to the bibliography at the back of the book are given after all numerical values quoted. The choice of these values was based on such considerations as the following: contents of original papers concerning purity of materials, methods of measurement, accuracy of results, reliance on investigators and laboratories of prominence, use of artificial or synthetic products instead of natural substances, as the latter usually contain impurities which alter the properties, and experimental density calculated from X-ray data.

Paint and Varnish

ADAMSON, NATHANIEL E.

Technology of ship-bottom paints and its importance to commercial and naval activities. Washington, D.C.: Government Printing Office, 1937. 36 p. illus. 23 cm. (United States. Navy Department. Bureau of Construction and Repair. C. and R. bulletin no. 10) Paper, \$0.10. 3944

Contents: Introduction. Historical. Analysis of the problem. Raw materials. Formulation. Importance of ship-bottom paints. Bibliography.

Note: This bulletin is from a thesis submitted for the degree of Chemical Engineer to the Georgia School of Technology. It is published by the Navy because interest shown in the subject led to the belief that the contents of the thesis would be of value to the Navy Department in general.

AMERICAN SOCIETY FOR TESTING MATERIALS

Symposium on paint. Philadelphia: The American Society for Testing Materials, 1943. 60 p. illus. 23 cm. Paper, \$1.00. 3945

Contents: Drying oil and fatty acid development, by A. Schwarzman. Surface coatings of opaque pigments, by Roscoe H. Sawyer. Surface coating of calcium carbonate extenders, by E. W. Boughton. Emulsion paints, by Carl Iddings. Protective concealment paints, by Paul O. Blackmore. Blackout paints, by John J. Bradley, Jr. Luminous paints, by G. F. A. Stutz.

Note: A collection of technical papers describing new developments and techniques in the composition and use of paint, the last three papers having special reference to wartime applications.

EDWARDS, JUNIUS DAVID

Aluminum paint and powder. Second edition, revised and enlarged. New York: Reinhold Publishing Corporation, 1936. 216 p. illus. 23 cm. \$4.50. 3946

Contents: Preface. Manufacture of aluminum powder. Some properties of aluminum powder. Examination of aluminum powder. Composition of aluminum paint. Aluminum paint in the protection of metals. Special properties and uses of aluminum paint. Aluminum paint in the protection of wood. Aluminum powder in the arts. Appendix. Indexes.

Note: A practical manual for the paint technologist, dealing with the manufacture and uses of aluminum paints and powder. Much of the technical information presented here is based on research carried on by the Aluminum Company of America. This edition incorporates recent developments in the field, and is more than twice the length of the previous edition. Lists of references are given at chapter endings, and there are separate author and title indexes. The first edition was entitled: *Aluminum bronze powder and aluminum paint*.

HUFF, RALPH H.

Scientific methods of varnish manufacture. St. Louis, Mo.: American Paint Journal Company, 1940. 159 p. illus. 22 cm. \$2.00. 3947

Contents: Primary properties of some varnish raw materials. Rosin varnishes. Ester gum varnishes. Modified alkyd varnishes, maleic acid type. 100% phenolic type of resin and varnishes. Varnishes and resins of modified phenolic type. Coal tar hydrocarbon resins for varnish manufacture. Oils used in varnishes and synthetic resins. Heat bodied oils and oil treated vehicles. Alkyd resin varnishes, phthalate type.

Note: This work was originally published in serial form in the *American paint journal*. It is a comprehensive summary of modern varnish production methods, with particular reference to the numerous types of synthetic varnish resins in present use, for both technical and practical workers.

JOACHIM, BENJAMIN

Applied paint and varnish chemistry for the chemist and the layman. St. Louis, Mo.: American Paint Journal Company, 1934-37. 2 v. 21 cm. \$2.00 per volume. 3948

Contents: Volume I, Pigments and oils: Elementary chemistry. Metallic soaps or driers. White lead and zinc pigments. The theory of solutions. The chemistry of lithopone. Titanium and antimony oxides. Extender pigments. Black pigments. Inorganic colored pigments. Toners and lakes. Metallic pigments. Correct blending of colors. Raw linseed oil. Special linseed oils. Linseed oil paints. Tung oil. Linseed and tung oil in flat white formulation. Fish oil, soybean, perilla, and other oils. Volume II, Thinners and resins: Paint thinners. Metallic soaps. Gum rosin, wood rosin, limed rosin. Ester gums. Synthetic resins. Natural resins. The art of formulation.

Note: These volumes are made up of two series of articles which appeared originally in the *American paint journal*. Some of the basic principles and methods of chemistry are discussed, but most of the material is made up of discussions, largely from the viewpoint of practical chemistry, of substances used in paints and varnishes and of their reactions when so used.

MARTIN, RAY C.

Glossary of paint, varnish, lacquer and allied terms. St. Louis, Mo.: American Paint Journal Company, 1937. 94 p. 22 cm. Paper, \$1.00. 3949

Note: This glossary defines approximately 1,000 words and phrases in common use. Various tests and processes in use in the industry are included, and the chemical formulas of many of the substances are given. A number of colloquial terms are also defined. All brand or trade names have been purposely excluded with the exception of two or three which are commonly used erroneously in the generic sense.

MARTIN, RAY C.

Lacquer and synthetic enamel finishes. New York: D. Van Nostrand Company, Inc., 1940. 526 p. illus. 23 cm. \$5.50. 3950

Contents: Genealogy. Nitrocellulose—cellulose acetate—film scrap—cellulose derivatives. Solvents, non-solvents. Plasticisers. Resin. Pigments. Plant and equipment. Requirements—types. Formulation. Analytical methods. Laboratory and field tests. Faults and corrections. Applications. Furniture finishes. Motor car finishes. Glossary. Index.

Note: A practical handbook for use in the preparation and application of lacquers and synthetic enamels. It covers the raw materials, natural and synthetic, and their types and specifications. It explains the manufacturing processes and the various methods of application that have been designed for different types of surfaces and conditions of use. It includes a considerable number of formulas, and the methods by which they have been developed. There are a number of pages on faults and troubles, and how to prevent them; and there is a glossary of more than one hundred pages.

MATTIELLO, JOSEPH J., EDITOR

Protective and decorative coatings; paints, varnishes, lacquers, and inks. Prepared by a staff of specialists under the editorship of Joseph J. Mattiello. New York: John Wiley & Sons, Inc., 1941-44. 4 v. illus. 23 cm. Vol. I and II, \$6.00 each; Vol. III, \$7.50; Vol. IV, \$5.00. 3951

Contents (abridged): Volume I, Raw materials for varnishes and vehicles. The paint and varnish industry. Drying oils. Resins. Driers. Thinners, solvents and lacquer solvents. Natural minerals. Ethers. Index. Volume II, Raw materials; pigments, metallic powders, and metallic soaps: Classification, chemistry, microscopic identification, and particle size. Colored pigments. White hiding pigments. White extender pigments. Black pigments. Metallic powders. Metallic soaps. Index. Volume III, Manufacture and uses: Colloids. Oleoresinous vehicles. Oleoresinous paints. Water and emulsion paints. Lacquers. Printing inks. Luminescent coatings. Paint manufacturing procedure. Stains. Index. Volume IV, Special studies: Theoretical and practical aspects of wetting. Theory of grinding. Color. Consistency. Hiding. Adhesion of dried coatings. Adsorption, permeability, water resistance, and structure of organic surface coatings. Livering of printing inks. Microscopy. High-vacuum technology. Emulsions. Ultraviolet absorption studies of drying oils. Index.

Note: A comprehensive and authoritative treatise covering the paint and varnish industry. Contributors are specialists engaged in the various phases of the industry. The work is designed for use in the research laboratories of the paint, varnish, lacquer, and ink industries, or in the laboratories of the raw materials companies which supply those industries. Specific formulas have been kept at a minimum, while the fundamentals in technology have been stressed. Many citations to periodical and patent literature are given at the ends of most chapters. Volume four is designed to summarize and indicate further possibilities in the fields covered. A fifth and final volume on analysis and testing methods is in preparation.

STEWART, JEFFREY R., AND OTHERS

The national paint dictionary; a handy reference volume for chemists, production managers, purchasing agents, formulators, technologists, salesmen, advanced painting contractors, distributors, and all those engaged either directly or indirectly in the manufacture, distribution, consumption, or application of paint and allied products. By Jeffrey R. Stewart, assisted by Frances E. Spicer and Mary R. Brookfield. 250 illustrations. Second edition. Washington, D.C.: Stewart Research Laboratory, 1942. 224 p. illus. 31 cm. \$7.50. 3952

Contents (abridged): Dictionary. Addenda to the dictionary. Supplement: Conversion tables of common units of measurement. Temperature conversion tables. International atomic weights. Universal dilution table. Flash points of oils and volatile liquids. Chart showing the correction of the volume of alcohol for various temperatures. Color identification tests for pigments. Useful information on electric motors. Chart on radiation. Hydrogen ion control and its practical significance. Constants of some important oils. Synthetic resin summary. Average balking values of pigments. Tank capacities calculations. Flow diagram for the

production of petroleum. Specific gravity of solids. Selected representative alcohols.

Note: An attempt to standardize the terminology used in the paint industry in order to avoid confusion. In order to avoid partiality in choice of terms, the author has consulted several leading authorities in the field. Useful reference information on a wide variety of subjects connected with the paint industry is provided in the supplement. Addenda to the dictionary are included in the monthly issues of the *National paint bulletin*.

Various Substances

ABRAHAM, HERBERT

Asphalts and allied substances, their occurrence, modes of production, uses in the arts and methods of testing. Fifth edition. New York: D. Van Nostrand Company, Inc., 1944. 2045 p. illus. 23 cm. \$20.00. 3953

Contents (abridged): Part I, General consideration. Part II, Semi-solid and solid bitumens and pyrobitumens. Part III, Tars, pitches and pyrogenous asphalts. Part IV, Pyrogenous asphalts and waxes. Part V, Manufactured products and their uses. Part VI, Methods of testing. Bibliography. References. Index.

Note: This two-volume work deals with asphalts, tars and pitches, and with the industrial products and processes for which they are used. The various deposits throughout the world of natural asphaltic material are discussed, country by country, and the tars and pitches which are produced by distillation and other industrial processes are described. Detailed accounts are given of the industrial operations in which the asphaltic materials are used, and the methods of testing are given for these various raw materials and their finished products. Special features of this new edition are a bibliography, itemizing over 900 treatises, and references to patents and citations to the general literature.

AMERICAN SOCIETY FOR TESTING MATERIALS

Symposium on the applications of synthetic rubbers. Philadelphia: The American Society for Testing Materials, 1944. 134 p. illus. 23 cm. Paper, \$1.50; cloth, \$1.75. 3954

Contents: Introduction, by A. W. Carpenter. The origin and development of synthetic rubber products, by Harry L. Fisher. Physical testing of synthetic rubber products, by L. V. Cooper. The physical properties of the synthetic rubbers, by J. M. Ball and G. C. Maassen. Specifications for synthetic rubber compounds, by M. J. De France. The processing characteristics of the synthetic rubbers and their use in the manufacture of extruded products, by A. E. Juve. Synthetic rubber tires and inner tubes, by P. M. Torrance. Belting and hose made from synthetic rubber, by W. L. White. The use of synthetic rubbers in molded products, by M. J. Sanger. Cellular rubbers, by Louis P. Gould. Hard rubber products from synthetic rubbers, by Walter H. Juve. Synthetic rubbers in the wire and cable industry, by R. A. Schatzel. Use of synthetic rubber in footwear, by Stanton Glover. Synthetic rubber adhesives, by Fred J. Wehmer.

Note: These technical papers summarize the latest available information on the chemical composition, physical properties, and industrial applications of synthetic rubber. Bibliographies are included.

BISSEON, CHARLES STEWART, AND OTHERS

Investigations on the physical and chemical properties of beeswax, by Charles S. Bisson, George H. Vansell, and Walter B. Dye, in co-operation with the University of California Agricultural Experiment Station. Washington, D.C.: Government Printing Office, 1940. 24 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 716) \$0.05. 3955

Contents: Introduction. Collection and preparation of samples. Methods of analysis. Contaminating materials. Clarification of crude beeswax. Decolorizing processes. Comparison of properties of crude and refined waxes. Observations on wax bloom. Spec-

tographic observations on color in beeswax and pollens. Summary.

Note: This bulletin presents the results of a study made of the physical and chemical properties of about 60 crude beeswaxes from different western states, together with the kinds of impurities and some of their physical and chemical properties. The response of the crude waxes to miscellaneous tests with metals and to several bleaching tests is also reported.

DAVIS, CARROLL CAMPBELL, AND JOHN T. BLAKE, EDITORS

The chemistry and technology of rubber. New York: Reinhold Publishing Corporation, 1937. 941 p. illus. 23 cm. (American Chemical Society monograph series. No. 74) \$15.00. 3956

Contents: Preface. Terminology used. Composition of crude rubber, by A. van Rossem. Physical properties of raw rubber, by G. Stafford Whitby. Chemistry and structure of rubber hydrocarbon, by Harry L. Fisher and Roscoe H. Gerke. Mastication and plasticity, by Wilfred Gallay. Structure and behavior of rubber in solvents, by Warren F. Busse. Theories and phenomena of vulcanization, by Ira Williams. Vulcanization without sulfur, by Iwan I. Ostromislensky. Accelerators: their history and use, by Sidney M. Cadwell and J. W. Temple. Theories of acceleration, by Winfield Scott and L. B. Sebrell. The physics of vulcanized rubber, by W. W. Vogt. Fillers and reinforcing agents, by Norman A. Shepard and others. History and use of materials which improve aging, by Waldo L. Semon. Auto-oxidation and deterioration by oxygen, pro-oxygens and antioxidants, by Charles Dufraisse. Deterioration of rubber by heat, light and ozone, by F. Harriss Cotton. The electrical behavior of rubber, by Archibald T. McPherson. Properties of latex, by W. A. Gibbons and P. D. Brass. Industrial uses of latex, by D. F. Twiss and others. Hard rubber (ebonite), by A. R. Kemp and F. S. Malm. Rubber derivatives of commercial utility, by T. R. Dawson and Philip Schidrowitz. Synthetic and substitute rubbers, by Thomas Midgley, Jr. Gutta-percha and balata, by J. N. Dean. Reclaimed rubber, by George W. Miller. Practical compounding, by W. F. Russell. Physical testing and specifications, by Arthur W. Carpenter. Chemical analysis of rubber and rubber products, by R. P. Dinsmore and others. Literature on the chemistry of rubber, by C. C. Davis. Author index. Subject index.

Note: Representing the combined efforts of more than 30 specialists, this volume attempts to systematize and coordinate the exact knowledge on the chemistry of rubber, to discuss critically such knowledge in the light of theory and practice, to call the attention of the research worker to original sources of information, and to supply the non-rubber chemist with authoritative information on all phases of rubber chemistry. Bibliographies are included in each chapter.

DE NAVARRE, MAISON G.

The chemistry and manufacture of cosmetics, with a chapter on the Federal Food, Drug and Cosmetic Act of 1938 as it relates to cosmetics, by Ralph J. Mill with a foreword by Roland T. Lakey. New York: D. Van Nostrand Company, Inc., 1941. 745 p. illus. 23 cm. \$8.00. 3957

Contents: Introduction. Metrology—allegation. Equipment for the small manufacturer—cosmetic materials. Fundamental principles. Preservatives, antioxidants and corrosion. Cosmetic colors—table of certified colors. Emulsions—patent digest. Cold creams and other cosmetic creams—patent digest. Lotions—patent digest. Face powder—miscellaneous powders—patent digest. Make-up—patent digest. Miscellaneous cosmetic preparations—patent digest. The Federal Food Drug and Cosmetic Act of 1938. Appendix and tables. Bibliography. Index.

Note: This is a general reference and formula book for the preparation of cosmetics. It explains the general principles and requirements which determine the properties of the various types of cosmetics, and shows how those requirements are met by proper formulation, and by the various operations of mixing and blending. This book includes formulas and rules for small scale production of cosmetics as well as for large scale manufacture.

ELLIS, CARLETON

Printing inks, their chemistry and technology. New York: Reinhold Publishing Corporation, 1940. 560 p. illus. 23 cm. \$7.00. 3958

Contents: Preface. Introduction. History of printing inks. Printing ink vehicles. Driers. Printing ink modifiers. Pigments. Typographic inks—drying-oil types. Typographic inks—mineral-oil and quick-drying. Planographic inks. Intaglio inks. Photo-mechanical preparation of matrices. Transfer inks. Emulsion inks. Special types of printing inks. Printing inks for miscellaneous purposes. Printing ink problems. The testing of printing inks. Paper for printing. Glossary. Name index. Subject index.

Note: Although intended primarily for the industrial chemist, this book on the chemistry of inks composed from synthetic resins is not too technical in phraseology for the interested layman. Since the book covers the whole field of printing inks, separate topics could not be covered in great detail. To fill out the subject coverage, very extensive bibliographical footnotes have been included.

FAIRLIE, ANDREW MILLER

Sulfuric acid manufacture. New York: Reinhold Publishing Corporation, 1936. 669 p. illus. 23 cm. (American Chemical Society monograph series. No. 69) \$9.75. 3959

Contents: Historical. Chemistry and theory relating to sulfuric acid manufacture. Construction materials. Production materials. Burners, roasters and furnaces. Burner- or furnace-gas. Nitration processes—methods of nitration. Glover tower. Lead chambers and chamber substitutes. Recovery of nitrogen oxides. Auxiliary equipment of a nitration-process plant. Complete plant design—operation of a nitration-process plant. Purification and concentration of sulfuric acid. Contact or catalytic processes. General discussion. The composition of burner- or furnace-gas. Cleansing, cooling and drying the gas. Blowers, preheaters, heat-exchangers, converters. Catalysts. Comparison of platinum and vanadium catalysts. SO₂ gas coolers, SO₂ absorbers, oleum manufacture, miscellaneous contact-process equipment. Complete contact plant. Operation. Methods of control of process. Special types of contact plant; individual installations. Mixing and shipping sulfuric acid, hazards and safety measures, costs and cost-accounting, to buy or to build, choice of process, trends in the industry. Index.

Note: Only modern processes commonly encountered in industry are treated in this book designed for the consumer, industrial chemist, student, and manufacturers. Somewhat more emphasis is placed on American than European methods.

HAYNES, WILLIAMS

The stone that burns; the story of the American sulphur industry. New York: D. Van Nostrand Company, Inc., 1942. 345 p. illus. 21 cm. \$3.75. 3960

Contents: Sulphur mine in Louisiana. The Frasch process. The sulphur deposits of the Gulf Coast. Sicilian sulphur and pyrites. American vs. Sicilian sulphur. Freeport and Bryanmound. The first World War period. Old Gulf and the new competition. Additional production. Hoskins mound. Boling, the biggest dome. Duval and Jefferson Lake. Grand Ecaille, the latest dome. Sulphur: today and tomorrow. Statistical appendix. Index.

Note: This book gives an account of the development of the American sulphur deposits in Louisiana and Texas. These deposits were known for many years, but did not become available until special mining methods were developed, a process which required a number of years for its accomplishment. This book explains, in a popular non-technical style, the story of that development.

HOU, TE-PANG

Manufacture of soda, with special reference to the ammonia process; a practical treatise. With 182 tables and 149 illustrations. Second edition. New York: Reinhold Publishing Corporation, 1942. 590 p. illus. 23 cm. (American Chemical Society monograph series. No. 65) \$9.50. 3961

Contents (abridged): Historical survey of the alkali industry. Natural soda. History of ammonia soda process. Preparation of brine. Burning of limestone. Ammoniation of saturated brine. Filtration of crude sodium bicarbonate. Decomposition of sodium bicarbonate by calcination. Recovery of ammonia. Manufacture of caustic soda. Allied products of ammonia soda industry. Special requirements of the ammonia soda industry.

Chemical analyses and tests in the alkali industry. Behavior of soda ash in storage. Layout and design of the ammonia soda plant. Index.

Note: A detailed and practical account of the ammonia soda industry. Most of the material is based on the author's personal experience in an alkali plant over a period of ten years. The figures given regarding costs and amount of material produced represent the average of what holds good under normal conditions. There are a few bibliographic footnotes.

JAMIESON, GEORGE SAMUEL

Vegetable fats and oils; their chemistry, production, and utilization for edible, medicinal and technical purposes. Second edition. New York: The Reinhold Publishing Corporation, 1943. 508 p. illus. 23 cm. (American Chemical Society monograph series. No. 58) \$6.75. 3962

Contents: Fats and oils. Non-drying fats and oils. Semi-drying oils. Drying oils. Fatty acids. Methods. Various other seed oils. Tables. Index to botanical names. Index.

Note: This volume brings together detailed information regarding the sources, properties, and uses of all types of vegetable fats and oils. Within each of the above groups the material is arranged alphabetically by the name of the substance. A final chapter describes the procedure for the preparation of samples suitable for examination and experimental purposes. The material constituting the sixty additional pages of this edition is to be found chiefly in the chapters on non-drying fats and oils and on drying oils. The appendix giving data on the quantity and character of oils from the seeds of ornamental plants and trees is also new. References to literature of the subject are extensive.

KERR, RALPH WALDO EMERSON, EDITOR

Chemistry and industry of starch; starch sugars and related compounds. New York: Academic Press, Inc., 1944. 472 p. illus. 23 cm. \$8.50. 3963

Contents: Occurrences and varieties of starch. The manufacture of corn starch. Manufacture of modified corn starches. Manufacture of tapioca starch. Manufacture of wheat, potato, and other industrial starches. Evaluation of modified starches in practice. Physical properties of starch. Chemical properties of starch. Composition and structure. The hydrogen bond in starch as a basis for interpreting its behavior and reactivity. Derivatives of starch. Oxidation of starch. Dextrinization. Manufacture of dextrins. Acid hydrolysis of starch. The amylases. Properties and production. Modification of starch by enzymes. Miscellaneous reactions. Uses of starch in paper manufacture. Uses of starch and starch products in the fermentation industries. Use of starch and starch products in foods. Use of starch products in the textile industry. Starch adhesives. Indexes.

Note: A survey and review of the extant knowledge of starch and of the more important products derived therefrom, intended for the carbohydrate chemist and the technologist concerned with starch production as well as for the student of carbohydrate chemistry. The manner of presentation of the subject is that of descriptive chemistry, and the authors have attempted to emphasize the American viewpoint and practice in the discussion of the technological methods. Representative topics are treated by individual authors who are professionally associated with the particular line of study. There are extensive bibliographies after each chapter.

KIRSCHENBAUER, H. G.

Fats and oils; an outline of their chemistry and technology. New York: Reinhold Publishing Corporation, 1944. 154 p. illus. 23 cm. \$2.75. 3964

Contents (abridged): Introduction. Constituents and components of fats. Structure and classification of fats. Nature of fats and fatty acids. Analytical methods. Technology of fats. Some important fats. Waxes. Appendix. Bibliography. Index.

Note: The origin, chemical composition, manufacture, and uses of common fats and oils are treated in condensed, simplified form. Although intended for workers in the fat and oil using industries, the non-technical presentation makes it intelligible to the layman. Two important features are the section on the manufacture and uses of widely used fats and the extensive table giving the major characteristics of over one hundred and sixty fats and waxes.

MANTELL, CHARLES LETNAM, AND OTHERS

The technology of natural resins, by C. L. Mantell, C. W. Kopf, J. L. Curtis, and E. M. Rogers. New York: John Wiley & Sons, Inc., 1942. 506 p. illus. 23 cm. \$7.00. 3965

Contents: Introduction. Early history of the natural resins. Accroïdes. Congo. Damar. The East Indias: batu, black, and pale. Elemi. Kauri. The manilas. Mastic. Sandarac. Physical and chemical properties. Solubility. Compatibility with other materials. Thermal processing. Chemical modification. Purification. Oil varnishes. Spirit varnishes. Lacquer formulations. Paints and enamels. Printing inks. Emulsions and water dispersions. Miscellaneous applications. Detection and identification. Physical and chemical testing methods. Appendix. Index.

Note: For chemists, chemical engineers, technologists in the protective and decorative coating industries, technologists in the plastics industry, technologists in the textile and paper industries. This book covers the important damar, copal, East India, and related resins from the standpoint of their properties, applications, industrial uses, development, and technology. From the viewpoint of terminology in this book, shellac and rosin are not included within the term "natural resins." The material presented is authoritative and authenticated by extensive laboratory investigation, forestry investigation, and commercial practice. A large number of practical formulae are included, as well as tables of basic information such as solubility, chemical and physical properties, compatibility, etc. A brief descriptive section is given on methods of harvesting and gathering resins.

MARCHIONNA, FREDERICK

Latex and its industrial applications. New York: The Rubber Age Publishing Co., 1933-37. 3 v. 24 cm. \$30.00. 3966

Contents (abridged): Volume I: Rubber plants. Planting and cultivation of rubber. Collecting and extracting latex. Preservation of latex and rubber. Behavior and characteristics of latex. Coagulation of latex. Preparation of rubber. Direct use of latex in industry. Artificial latex. Electrodeposition of rubber. Structure of rubber. Indexes. Volume II, Part I, Latex and its industrial applications: Latex and its properties. Conditioning of latex. Vulcanized latex and vulcanization process. Compounding and compounded latex. Depositing latex processes and dipped articles. Rubber threads and filaments manufacture. Textile fabric manufacture. Paper and artificial leather manufacture. Coating and impregnation—generic. Electrical insulation. Porous rubber products. Floor and road coverings. Shoe manufacture. Volume III: Rubber powders. Miscellaneous processes and products. Artificial latex and mixed dispersions. Electrodeposition of rubber. Part II, Rubber derivatives and their industrial application: Oxidized rubber. Hydrogenated rubber. Halogenated rubber products. Cyclized rubber. Condensation products of rubber. Index.

Note: A compilation of patent abstracts and an annotated bibliography covering latex and rubber derivatives. The first volume is complete in itself up to 1933, and comprises approximately 2,490 abstracts, of which 1,887 are patents and over 600 scientific or technical papers. Volumes II and III were issued as supplements to Volume I to cover the literature of rubber technology during the period 1934-1937. They contain a total of 4,440 abstracts with a much larger proportion devoted to abstracts of various American, British, French, and German patented processes for the industrial application of latex and rubber derivatives. Patent number, date, title, owner, and a synopsis of the process are given under each patent listed. In addition there is a technical résumé of the general subject at the beginning of each chapter. There are indexes of patentees, patents, subjects, and authors.

MARKLEY, KLARE STEPHEN AND WARREN H. GOSS

Soybean chemistry and technology. Brooklyn, N.Y.: Chemical Publishing Company, Inc., 1944. 261 p. illus. 22 cm. \$3.50, U.S.; \$3.90, foreign countries. 3967

Contents (abridged): Composition and properties. Mineral constituents. Protein and other nitrogenous constituents. Enzymes. Carbohydrates. Glycosides. Pigments. Vitamins. Oil and oil-soluble constituents. Physical and chemical characteristics of soybean oils. Fatty acids and glycerides. Sterols. Oil-soluble pigments. Anti-oxidants. Phosphatides. Literature cited. Develop-

ment of the soybean processing industry. Grading and storage. Processing by means of continuous presses. Processing by means of continuous solvent. Hydraulic pressing. Soy flour. Cost of processing soybeans. Production and refining phosphatides. Processing soybean oil for food uses. Literature cited. Index.

Note: A concise, practical book for the manufacturer, chemist, and layman. Processing mills in the United States are listed, also the manufacturers of mill equipment. Patent references are included in the bibliographies.

SCHWARCZ, LEONARD

Sanitary products, their manufacture, testing and use: a practical handbook dealing with disinfectants, insecticides, liquid and oil soaps, floor waxes, deodorizing blocks, soap dispensers, sprayers, etc. New York: MacNair-Dorland Company, 1943. 305 p. illus. 23 cm. \$5.00. 3967a

Contents: Introduction. Sanitary products industry. Discovery of bacteria. Principles of disinfection. Coal tar disinfectants. Cresol compounds. Pine oil disinfectant. Hypochlorites. Formaldehyde. Oil soaps. Liquid soaps. Soap dispensers. Floor waxes. The insect problem. Pyrethrum insecticides. Rotenone materials. Synthetic insecticides. Activators. Roach control. Bedbug liquids. Livestock sprays. Sprayers. Moth preparations. Deodorant and urinal blocks. Labeling and packaging. Appendix. Index.

Note: This volume presents a review of the composition, testing, and use of such sanitary products as insecticides, disinfectants, liquid soaps, floor waxes. The book is designed to be of service to the manufacturers and users of these sanitary specialties.

SUTERMEISTER, EDWIN, AND FREDERICK L. BROWNE, EDITORS

Casein and its industrial applications. Second edition. New York: Reinhold Publishing Corporation, 1939. 433 p. illus. (part col.) 23 cm. (American Chemical Society monograph series. No. 30) \$6.50. 3968

Contents: Introduction. Casein in milk and its isolation, by F. L. Browne. The organic chemistry of casein, by R. A. Gortner. The physical chemistry of casein, by F. L. Browne. The manufacture of casein, by A. O. Dahlberg. Testing and analysis of casein, by Edwin Sutermeister. Storage of casein, by A. H. Warth. Casein plastics, by George H. Brother. Casein glues, by Frederick L. Browne and Don Brouse. Casein in paper making, by Edwin Sutermeister. Casein paints, by Albin H. Warth and Frederick L. Browne. Casein in the leather industry, by Edwin S. Cavett. Alimentary and medicinal uses of casein, by Henry A. Schuette. Miscellaneous uses of casein, and statistics, by Edwin Sutermeister and Louis A. Olney. Indexes.

Note: Notable changes in the chemical knowledge and applications of casein, since the first edition (New York: Reinhold, 1927) are given in this rewritten second edition. New material includes treatment of casein plastics, casein paste paint, and synthetic textile fiber, and of the heterogeneity of casein. Periodical and patent literature citations have been expanded. The book is written by and for industrial and research chemists.

WILSON, CHARLES MORROW

Trees & test tubes; the story of rubber. New York: Henry Holt and Company, 1943. 352 p. illus. 22 cm. \$3.50. 3969

Contents: Foreword. Rubber is vegetable. Rubber before Goodyear. Charles Goodyear. Amazon rubber. Malayan and East Indian rubber. Henry Fordlandia. Synthetics, or elastomers. Our rubber-dependent world. Singapore and Japan. Crisis. War and rubber. Looking forward. Notes. Baruch committee report, digest. Baruch committee report, complete. Chronology of Goodyear's life. Bibliography. Index.

Note: A comprehensive survey for the general reader. Accounts are given of the economic, political, and physical aspects of rubber cultivation in Brazil and the Far East. The work of the pioneers in the rubber industry is outlined. The extent to which our civilization has become dependent on rubber is discussed and a summary given of the development of synthetic rubbers. The bibliography lists 153 titles.

WISE, LOUIS ELSBERG, EDITOR

Wood chemistry. Contributing authors: Harry P. Brown, Carl C. Forsaith, Richard D. Freeman, and others. New York: Reinhold Publishing Corporation, 1944. 900 p. illus. 23 cm. (American Chemical Society monograph series. No. 97) \$11.50. 3970

Contents (abridged): Growth and anatomy of wood. Physical properties of wood. Cellulose. Chemically modified cellulose. Chemistry of lignin. Chemistry of the cell walls of wood. Extraneous components of wood. Surface properties of cellulosic materials. Introduction to wood analysis. Preparation of wood samples. Determination of cellulose. Determination of lignin. Combustion of wood. Delignification of wood. Chemical behavior of wood. Decomposition of lignin. Index.

Note: This volume, although based on Wise and Hawley's *Chemistry of wood*, New York: Chemical Catalog Co., 1926, is much more than an expansion of the earlier volume. It now represents the work of fifteen authors, all experts in the field. The emphasis is placed on the chemical and physical properties of wood and cellulose, and the treatment is selective rather than exhaustive. No attempt has been made to present detailed information on the technological aspects of wood utilization. The book will be of interest to chemists and engineers engaged in the pulp and paper, turpentine, charcoal, rosin, and tanning industries. Each chapter contains numerous references to literature and patents on the subject.

WOLFE, HERBERT JAY

Printing and litho inks. Third and completely revised edition, formerly titled *Manufacture of printing and lithographic inks*. New York: MacNair-Dorland Company, 1941. 423 p. illus. 23 cm. \$6.00. 3971

Contents: The history of printing ink. General characteristics of inks. Printing ink vehicles. Solvents for inks. Pigments. Natural mineral pigments. Manufactured mineral pigments. Organic pigments. Black pigments. Resins. Driers and drying. Ink compounds. Addition agents. Typographic printing inks. Planographic inks. Intaglio printing inks. New types of printing inks. Special inks. Factory equipment. Testing. Bibliography. Appendix. Index.

Note: A study of the principles and technology of printing inks, designed to help young men entering the industry and also

those already engaged in printing ink manufacturing. A history of the art is given and a knowledge of the properties of the raw materials is developed. The third edition has been revised to cover new types of inks and new raw materials appearing on the market since the publication of the second edition.

WORDEN, EDWARD CHAUNCEY

Technology of cellulose ethers; a theoretical and practical treatise on the origin, history, chemistry, manufacture, technical application and analysis of the etherified celluloses and carbohydrate carboxylate ethers (esterified cellulose ethers, etherified organic cellulose esters). Milburn, N.J.: Worden Laboratory and Library, 1933. 5 v. illus. 24 cm. \$45.00. 3972

Contents: Volume I, Historical development of cellulose ethers. Volume II, Rise and development of the cellulose ester industry. Volume III, Cellulose ethers, raw materials and manufacture: Raw materials. Alkalicellulose theory and manufacture. Carbohydrate etherifying agents. Cellulose alkyl ethers. Manufacture of alkylcellulose. Starch ethers. Carbohydrate aryl and aralkyl ethers, benzylcellulose. Mixed cellulose ethers. Carbohydrate ether-esters and esters. Volume IV, Cellulose ether solvents and commercial applications: Solvents, non-solvents, plasticizers. Commercial application of cellulose ethers, artificial filaments and textiles. Commercial applications of the cellulose ethers. Analytical determinations. Volume V: Index of patents. Name index. Subject index.

Note: This work is now sold by the Reinhold Publishing Corporation. It is an exhaustive summary of the available knowledge to 1933 on the technical usefulness of the etherified celluloses, based on the then extant literature in the field and upon the author's own experience. Intended for the chemical engineer and research student, the work covers in more or less chronological order the multiplicity of processes, methods, experimental research and the results obtained, both in the industry and in the laboratory. The work is mainly a guide for those seeking further information, and copious footnote references on every subject give literature and patent citations, as well as cross references to allied subjects. European publications and patents appear extensively in the notes, while brief outlines of the then current processes and techniques are described in the text. The indexes in Volume V have been thoroughly prepared and include a listing of patents arranged numerically by country but not referred to specific processes. This is a companion series to the author's *Technology of cellulose esters*, Easton, Pa.: Eschenbach Printing Company, 1921.

HEAT AND POWER ENGINEERING

Applied Thermodynamics

BAILEY, NEIL PHILLIPS

Principles of heat engineering. New York: John Wiley & Sons, Inc., 1942. 264 p. illus. 23 cm. \$2.75. 3973

Contents: Basic concepts. Characteristics of gases. Thermal energy. Properties of vapors and gases. Gas and vapor mixtures. Combustion of fuels. Heat transfer. Compression of gases. Utilization of heat. Internal-combustion engines. Steam engines. Nozzles. Turbines. Condensers. Boilers. Power plant cycles. Refrigeration. Problems. Index.

Note: The principles governing the knowledge of heat and its uses are presented in this introductory book. The information is given in a framework of theory and is expressed quantitatively so that it may be useful for the solution of engineering problems. Constant use is made of the kinetic theory of gases and other qualitative concepts that aid in making the subject a logically connected science. Modern, accurate tables of the physical constants are given. Forty-one pages of problems are included at the end of the book. In the text, sample solutions are provided for the important applications of theory.

CROFT, TERRELL WILLIAMS

Practical heat. Revised by R. B. Purdy. Second edition. New York: McGraw-Hill Book Company, Inc., 1939. 726 p. illus. 21 cm. (Power plant series) \$5.00. 3973a

Contents: Force, pressure, work, energy, power. Matter, heat, temperature. The source of heat. Heat—its measurement and transformations. Transfer of heat. Effects of heat. Expansion and contraction of solids and liquids. Heat phenomena of gases. Melting and freezing of substances. Vaporization. Steam and other vapors. Gas and vapor cycles. Fuels. Combustion. Steam power plants. Internal-combustion-engine power plants. Building warming. Refrigeration. Instruments. Solutions for problems. Index.

Note: This text is intended for the practical student of limited mathematical training and stresses the practical applications of heat without reference to matters of purely theoretical interest. Fundamental theory, such as the laws of thermodynamics, the heat-transfer equation, the laws of gases, the Carnot cycle, and coefficients of expansion, is expounded in a simple manner and requires only a working knowledge of arithmetic for its understanding. The work is well adapted for self-study. The second edition contains new material on power plant design based on the developments in the field from 1923 to 1939.

CROSS, CHARLES NORMAN

Heat engines. New York: The Macmillan Company, 1930. 607 p. illus. 22 cm. (Engineering science series; edited by Dugald C. Jackson and Earle R. Hedrick) \$5.00. 3973b

Contents: Preface. Power from nature's forces. Energy and matter. Heat and work. Thermometers and temperature units. Fundamental laws of gases. Heat measurement—specific heat. Transformation of heat energy into mechanical work and specific heats of gases. Gas expansions. Air compression. Vapors and their properties. Engine cycles, second law of thermodynamics, and thermodynamic scale of temperature. Fuels and combustion. Steam boilers. Steam engines. Steam turbines. Internal-combustion engines. Index.

Note: This textbook for mechanical engineering students stems from a course given at Stanford University. The book considers the fundamental laws of gases and the laws of thermodynamics, together with descriptions of the modern forms of prime movers, their operating characteristics, and representative performance results of each type and size. The volume contains many references to original papers in the literature of the subject. The book may also be useful to practicing engineers as a reference book.

ELLENWOOD, FRANK OAKES, AND CHARLES O. MACKEY

Thermodynamic charts; steam, water, ammonia, "Freon-12", and mixtures of air and water vapor, also special tables for turbine calculations. Second edition. New York: John Wiley & Sons, Inc., 1944. 46 p. illus. 21 cm. \$2.75. 3974

Contents: Note regarding enthalpy. Index chart for steam. Steam charts. Water charts. Low-quality steam chart. Ammonia charts. "Freon-12" charts. Psychrometric charts. Examples of the use of the charts. Tables I, II, and III, corrections of barometric readings. Table IV, jet velocity from an ideal nozzle for each BTU. Table V, jet velocity from an ideal nozzle for each tenth of a BTU. Table VI, squares of numbers. Table VII, common logarithms.

Note: This book comprises charts on steam, water, ammonia, "Freon-12," and mixtures of air and water vapor; also special tables for turbine calculations. In the second edition plates 8 and 9 have been redrawn in order to include the pressure scale for the saturated liquid. For the ammonia and "Freon" charts scales to give the specific volumes for the saturated liquids have been added. An entirely new form of chart, plate 10, has been made for steam and water mixtures having qualities less than 80 per cent. Values for qualities above 80 per cent may be found from the original charts. In plate 10, the coordinates are quality as abscissa with saturation pressure and temperature as ordinates. This arrangement enables the entire area of the chart to be effectively utilized; and the values of enthalpy, entropy, pressure, temperature, and volume for low qualities may be easily read. For all these properties this chart permits linear interpolation to be correctly used for any constant pressure or constant temperature line. The previous edition was entitled *Vapor charts*.

EMSWILER, JOHN EDWARD

Thermodynamics, revised by F. L. Schwartz. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1943. 335 p. illus. 21 cm. \$3.00. 3975

Contents: Thermodynamics. Energy. First law of thermodynamics. Power plants. Working substances. Second law of thermodynamics. Cycles for vapors. Perfect gases. Compression and expansion of gases. Cycles for gases. Refrigeration. Mixtures of gaseous substances. Flow of fluids. Kinetic engines. The steam turbine and the injector.

Note: A concise presentation intended for engineers and students with a knowledge of mathematics and physics. In this edition more emphasis is placed on gases and the general energy equation for steady flow processes, and there is new material on absorption refrigeration, gas turbines, gas cycles, adiabatic saturation of air-water vapor mixtures, and supersaturation. Problems follow each chapter.

EVERETT, HAROLD ARTHUR

Thermodynamics; a course developed for

students in engineering colleges. Second edition. New York: D. Van Nostrand Company, Inc., 1941. 466 p. illus. 23 cm. \$3.75. 3976

Contents: Preface. Symbols. Greek letter chart. Energy and the mechanical theory of heat. The mechanical theory applied to gases. Fundamentals. Gases. The second law of thermodynamics. Engines using gases for working fluid. Gaseous mixtures. Flow of fluids (gases). Vapors. Flow of vapors. Engineering devices using vapors. Mixtures of gases and vapors. Refrigeration. General thermodynamic relations. Index.

Note: The basic principles of the subject are explained clearly along with a discussion of their engineering applications. Special features are the presentation of the general mathematical relations in one chapter, the extensive use of simple graphs and charts to illustrate the processes and properties of thermodynamic media, and a large selection of problems.

FAIRES, VIRGIL MORING

Applied thermodynamics. New York: The Macmillan Company, 1938. 374 p. illus. 23 cm. (Engineering science series; edited by E. R. Hedrick) \$3.90. 3977

Contents: The general energy equation. Characteristic equation of a perfect gas. Energy equations of a perfect gas. Reversible non-flow processes of gases. The Carnot and Ericsson cycles. Entropy and the second law of thermodynamics. Cycles for internal combustion engines. Performance of internal combustion engines. Compression and expansion of air. Air refrigeration. Steady-flow processes and devices for gases. Mixtures of gases. Combustion and the products of combustion. Variable specific heats. Liquids and vapors. The steam power plant and auxiliary apparatus. Vapor cycles. Reciprocating steam engine. Modern cycles for steam power plants. Flow of steam in nozzles and turbines. Vapor refrigeration. Mixtures of vapors and gases. The transfer of heat. Index.

Note: A standard text designed for full-length college courses. Available for use with it is the manual prepared by the author and Alexander V. Brewer, *Problems on applied thermodynamics*, New York: The Macmillan Company, 1938, 137 p., \$1.40.

HIRSHFELD, CLARENCE FLOYD, AND OTHERS

Elements of heat-power engineering, by William N. Barnard, Frank O. Ellenwood, and Clarence F. Hirshfeld. New York: John Wiley & Sons, Inc., 1926-33. 3 v. illus. 23 cm. Part I, \$4.50; Part II, \$5.50; Part III, \$4.50. 3977a

Contents (abridged): Part I, Thermodynamics and prime movers: Energy and its transformation. Illustrations of modern power plants. Energy equations. Equilibrium. Reversibility and availability. Entropy. Properties of gases. Thermodynamic processes of gases. The indicator diagram. Compressed air. Gas cycles. Efficiencies and performances of engines. Internal combustion engines. Properties of vapors. Vapor engines. The reciprocating steam engine. Steam turbines. Appendix. Index. Part II, Steam-generating apparatus, prime movers, fuels, combustion and heat transmission: Performance of steam prime movers and plants. Governors. Valve gears. Heat transmission. Fuels. General principles of combustion. Steam-generating units. Burning of coal. Burning of gas. Burning of oil in furnaces. Burning by-product fuels and refuse. Combustion control. Superheaters, reheaters and desuperheaters. Economizers and air heaters. Appendix. Index. Part III, Auxiliary equipment, plant ensemble, air conditioning and refrigeration: Flow of fluids. Draft system. Condenser system. Feedwater heaters, evaporators, pumps and traps. Boiler water conditioning. Water cooling. The steam power plant. Ventilation, heating, cooling, and air conditioning. Mechanical refrigeration. Appendix. Problems. Index.

Note: This three-volume work is based on Hirshfeld and Barnard's *Elements of heat-power engineering*, second edition, New York, 1915. The portions of the present work dealing primarily with thermodynamics have been substantially rewritten to include new methods of treatment and new technical advances between 1915 and 1926. Special attention is given to reversibility and entropy, but with omission of a rigorous mathematical treatment, and to the cycles of prime movers using vapors. Included also are the fundamentals of performance and determining features of prime movers, engine governors, fuel and combustion, elementary hydraulics, cooling ponds, plant economies, and cost data. The work is intended primarily as a textbook for college courses but is useful also as a reference tool in engineering offices and libraries.

KIEFER, PAUL JAMES, AND MILTON C. STUART
Principles of engineering thermodynamics.
New York: John Wiley & Sons, Inc., 1930. 545 p.
illus. 24 cm. \$4.50. 3978

Contents: Energy: Stored energy. Energy in transition. Energy equations. The availability of energy: Reversible cycles. The Carnot principle. The fundamental temperature scale. Entropy, the index of unavailability. Properties of fluids: Liquids, vapors and liquid-vapor mixtures. The perfect gas. Gas and gas-vapor mixtures. Applications: Flow through the nozzle, orifice, etc. Steam power plant cycles. Reciprocating steam engine. Steam turbine. Combustion. Internal combustion engine. Compressors and blowers. Refrigeration. General thermodynamic equations.

Note: Offers a basic analysis of the aspects of thermodynamics which are of concern in the design and operation of power producing and transforming machines. The first and second laws of thermodynamics are explained with unusual clarity. A definite distinction is made between energy stored in a system and energy in a state of transition. Heat and work are forms of the latter, potential and kinetic energy are forms of the former. Entropy is described as an index of the unavailability of energy. The term heat content is discarded and the term enthalpy is substituted.

LICHTY, LESTER CLYDE

Thermodynamics; the principles of thermodynamics and their application to engineering processes. New York: McGraw-Hill Book Company, Inc., 1936. 281 p. illus. 23 cm. \$3.00. 3978a

Contents: Preface. Symbols and abbreviations. Thermodynamic media and their coordinates. Energy and energy factors. The energy equation and thermodynamic processes. Properties of media and processes. Mixtures of media. Availability of energy. Thermodynamic cycles. The combustion process. Internal-combustion engine processes. The flow of fluids. Relations for coordinates and properties of media. Index.

Note: This text for second-year engineering students is an attempt to simplify the usual college course on this subject by eliminating as many of the mathematical manipulations as is consistent with scientific accuracy, and by consolidating the treatment into logical groupings from a standpoint of thermodynamic analysis rather than mechanical equipment. It is also an attempt to establish a better balance between vapor and combustion processes, since the latter are usually neglected in introductory courses. Throughout the text, the analysis leads to the development of simple fundamental relationships, which are not further combined or manipulated into mere formulas in which data can be substituted and a result obtained, so that the student is thus put on his own responsibility to substitute only those terms which will make any equation dimensionally correct. Although mathematical theory is de-emphasized, a knowledge of integral calculus is assumed on the part of the student.

MOYER, JAMES AMBROSE, AND OTHERS

Elements of engineering thermodynamics, by James A. Moyer, James P. Calderwood and Andrey A. Potter. Sixth edition, rewritten. New York: John Wiley & Sons, Inc., 1941. 217 p. illus. 23 cm. \$2.50. 3978b

Contents: Thermodynamic principles and definitions. Properties of perfect gases. Thermodynamic processes for gases. Cycles of heat engines using gas. Properties of vapors. Entropy. Thermodynamic processes of vapors. Vapor cycles. Flow of fluids. Applications of thermodynamics to compressed air; refrigerating machinery and air conditioning. Index.

Note: The purpose of this book remains the same as in previous editions—to emphasize the basic principles of engineering thermodynamics as a foundation for the more advanced and practical applications of the theory. Professor W. J. Cope of Purdue University assisted in the revision. Among the changes are these: additional space is given to cycles, heat transfer, refrigeration and air conditioning; reversible and irreversible processes are given more attention. Material is now included on the thermodynamic treatment of uniform flow processes; new vapor tables are given. The symbols have been changed to conform to recent practice. A large number of new problems have been prepared for this edition, and only the best of the old ones have been retained.

MYERS, DAVID MOFFAT

Reducing industrial power costs. New York: McGraw-Hill Book Company, Inc., 1935. 378 p. illus. (part col.) 23 cm. \$4.00. 3979

Contents: Why bother about power. The human factor in power and industry. Viewpoint—its economic importance. Opportunities—the field of rehabilitation. Steam plant losses—wastes and savings. Control of efficiency—records, meters and instruments. Is it cheaper to make or to buy power? If you buy power—how to economize. The right fuel—how to select it. Is oil cheaper than coal? Pulverized coal—in its place. Automatic stokers—in their place. High pressure steam—what it means for industry. The boiler plant and modernization. Combustion—what is it? How much heat goes up the chimney? Sources of power and prime movers—steam engines and turbines, water wheels, Diesels and gas engines. Heating systems and cost cutting. Air conditioning—what is it? How does it work? When to purchase steam supply. The characteristics of steam. Water power versus steam power. Boiler feed water and its treatment. Power-loss check chart for industrial plants. Power facts and data.

Note: This book provides management and factory executives with the knowledge of steam and power generation, comparison of methods, power plant rehabilitation, and kindred problems that is important in increasing profits through avoiding excessive power, heat, and light costs in manufacturing.

NORRIS, EARLE BERTRAM, AND ERIC THERKELSEN

Heat power. Second edition. New York: McGraw-Hill Book Company, Inc., 1939. 432 p. illus. 23 cm. \$4.00. 3980

Contents: Introduction. The internal-combustion engine. Internal-combustion engine details. Fuels for internal-combustion engines. Principles of combustion. Work and power. Heat and work. Analysis of internal-combustion engine cycles. The Otto cycle. The Diesel cycle. Actual performance of internal-combustion engines. The steam-power plant. Steam. Steam-engine performance. Improving steam-engine performance. Steam-engine mechanisms. The steam turbine. Condensing equipment. Steam boilers. Boiler fuels and furnaces. Boiler accessories and auxiliaries. Boiler performance. Refrigeration. Index.

Note: An introductory book for students of mechanical engineering in engineering colleges. The book gives a thorough description of internal combustion engines from the mechanical and then from the thermodynamic point of view. Steam machinery is dealt with in the same manner. In this second edition, the description of boiler types has been simplified. The most recent available data on specific heats of gases and properties of steam have been added. Another important addition is the chapter on refrigeration.

RECK, FRANKLIN MERING, AND CLAIRE RECK

Power from start to finish. New York: Thomas Y. Crowell Company, 1941. 154 p. illus. 24 cm. \$2.00. 3981

Contents: We depend on the sun. The beginning of steam. James Watt brings on the modern age of steam. Steam conquers the water. Steam conquers the land. Men experiment with electricity. The first dynamo. Oil goes to work. Men ride and fly on oil. Capturing the sun's power today. Power in falling water. Power for cities. Power for factories. What next? Index.

Note: A popular account of the history of power written for the layman and the young reader. Descriptions are given of windmills, steam engines, Diesel engines, and turbines.

STANSEL, NUMAN R.

Industrial electric heating. New York: John Wiley & Sons, Inc., 1933. 444 p. illus. 23 cm. \$5.00. 3982

Contents: The transfer of heat. Heating and cooling of metals. Electric heating. Heating chambers. The resistor furnace. Atmospheres of resistor furnaces. Applications of the resistor furnace. Melting metals. Melting pots. Arc furnaces. Induction furnaces. Supplement: Factors affecting the economics of industrial electric heating. Index.

Note: Presents briefly some of the important principles of thermal engineering. This is followed by a discussion of the construction of the various types of electric furnace and of their uses, with examples of their application. Low-temperature heat-

ing, induction heating of solids, the production of ferro-alloys, and some other phases of heating are not included.

STOEVEER, HERMAN JULIUS

Applied heat transmission. New York: McGraw-Hill Book Company, Inc., 1941. 226 p. illus. 23 cm. \$2.50. 3983

Contents: Introduction. Conduction. Radiation. Convection. Convection coefficients. Calculation of pressure drop. Types of industrial heat-transfer equipment. Insulation.

Note: Presents the fundamentals of heat transmission at a generally practical level for all who encounter problems in the design and use of power plant and chemical processing apparatus. Gives the information required to solve the ordinary heat transfer problems that arise in practice, in understandable and usable form, and illustrates the method of applying it by solution of a number of numerical problems. Also familiarizes the reader with the construction and fields of application of the ordinary types of heat transfer equipment used in industry and with commonly used industrial insulating materials and methods of applying them.

TRINKS, WILLIBALD

Industrial furnaces. Third edition. New York: John Wiley and Sons, Inc., 1934-42. 2 v. illus. 23 cm. Vol. I, \$6.00; Vol. II, \$5.00. 3984

Contents: Volume I, Principles of design and operation: Introduction. The heating capacity of furnaces. The fuel economy of furnaces. Heat-saving appliances in combustion furnaces. Strength and durability of furnaces. Movement of gases in furnaces. Appendices. Index. Volume II, Fuels, furnace types and furnace equipment; their selection, and influence upon furnace operation: Fuels and sources of heat energy. Combustion devices and heating elements. Control of furnace temperature. Control of furnace atmosphere. Labor-saving appliances. Critical comparison of fuels and furnace types. Index.

Note: Covers the theory and practice of industrial furnace design and operation. Volume I presents the theory, using tables, charts, and graphical methods, while Volume II puts the emphasis on practical operation of furnaces. Each volume is complete in itself and may be used independently. The books contain a large number of graphic illustrations, as well as numerous typical examples to reinforce the data presented. Volume I is available in the third edition published in 1934, and Volume II in the second edition, published in 1942. The third edition of Volume I represents an extensive revision of earlier editions, two-thirds of the text having been rewritten. The second edition of Volume II contains complete revisions of some parts, and many new illustrations.

YOUNG, VINCENT WILLARD, AND GILBERT A. YOUNG

Elementary engineering thermodynamics. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 243 p. illus. 23 cm. \$2.75. 3985

Contents: Introduction. General laws and equations. Thermodynamic characteristics of gases. Nonflow processes—gas systems. The Carnot cycle—entropy. Heat-engine cycles—gas systems. Air compression. Properties of vapors—vapor tables. Nonflow processes for vapors. Flow processes for gases and vapors. Vapor cycles. Refrigeration. Mixtures of air and water vapor. Index.

Note: An introductory text for students of mechanical engineering, dealing with the fundamental theory of heat-work apparatus. In this edition the sections on flow energy and mixtures of air and water vapor have been revised, and the use of the Keenan and Keyes steam tables has been introduced. New sets of problems are given at the end of each chapter.

Steam Engineering

ALLEN, JOHN ROBINS, AND JOSEPH A. BURSLEY

Heat engines; steam, gas, steam turbines and their auxiliaries. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1941. 576 p. illus. 23 cm. \$4.00. 3986

Contents: Heat. Elementary thermodynamics. Properties of steam. Calorimeters and mechanical mixtures. Fuels and combustion. Boilers or steam generators. Boiler auxiliaries. Steam engines. Power and performance of steam engines. Steam turbines. Condensers. Air compressors and refrigerating machinery. The internal-combustion engine. Fuels and fuel systems. Auxiliary systems. Rating and performance. Economy of heat engines.

Note: The forms of heat engines discussed in this book include the steam engine with its boiler and auxiliaries, the gas engine with its producer, oil engines, and the principal types of steam turbines. In the present edition particular attention has been given to the chapters on boiler auxiliaries, turbines, and internal combustion engines.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS

Bibliography on deterioration of condensing equipment. A.S.M.E. research publication. New York: The American Society of Mechanical Engineers, 1931. 55 p. illus. 26 cm. Paper, \$1.25. 3987

Note: This bibliography offers abstracts of some length of a number of articles considered by the compilers to be of special importance. Less important articles are cited and in some cases are annotated briefly. In addition to the bibliography, there is a brief, general introductory chapter discussing the deterioration of condensing equipment. The bibliography was compiled by A. E. White and C. L. Clark, and was reviewed and brought up to date by B. Houghton, W. R. Webster and W. H. Bassett, and supplemented by material prepared by the Engineering Societies Library.

AMERICAN SOCIETY FOR TESTING MATERIALS

Symposium on the identification of water-formed deposits, scales, and corrosion products by physico-chemical methods. Philadelphia: The American Society for Testing Materials, 1943. 41 p. illus. 22 cm. Paper, \$0.65. 3987a

Contents: Introduction, by H. C. Miller. X-ray diffraction methods in the study of power-plant deposits, by C. E. Imhoff and L. A. Burhardt. Diagnosis of water problems on Limbo Station, by E. P. Partridge and others. The interpretation of analyses and problems encountered in water deposits, by J. A. Holmes and A. O. Walker. General discussion.

Note: These technical papers stress the use of the petrographic microscope and the X-ray as methods for the examination of corrosion deposits. Analyses of typical deposits are given and there is a short general discussion.

BUTTERFIELD, THOMAS EDWARD, AND OTHERS

Steam and gas engineering, by Thomas Edward Butterfield, Burgess H. Jennings, and Alexander W. Luce. Third edition. New York: D. Van Nostrand Company, Inc., 1938. 490 p. illus. 23 cm. \$4.50. 3988

Contents: Introduction. Fuels. Combustion. Combustion equipment for steam generation. Energy-units, laws. Properties of steam. Steam cycles. The steam boiler. Boiler plant auxiliary apparatus. Laws of gases. Gas cycles. The steam engine, slide-valve type details. The Corliss engine, the uniflow engine. Thermodynamics, testing and performance of steam engines. Valve gears and diagrams. Governing steam engines. Steam turbine types and performance. Nozzle calculations. Turbine blade calculations. Condensers and condensing equipment. Steam power plant cycles, heat balances. The internal-combustion engine. Gas and gasoline engine types and performance. Heavy-oil engines. Refrigeration. pH chart for ammonia. Abstract of Keenan's steam tables. Index.

Note: A college textbook for engineering students. Emphasis is placed upon operating characteristics rather than mathematical analysis. In this third edition the book is brought up to date and new or considerably revised sections are provided on the use of high-pressure steam, latest types of steam boilers, stokers, and pulverized coal burning equipment, high-speed Diesel engines, and automotive and airplane engines.

CHURCH, EDWIN FAYETTE

Steam turbines. Second edition. New York: McGraw-Hill Book Company, Inc., 1935. 327 p. illus. 23 cm. \$3.00. 3989

Contents: Types and characteristics. Flow of steam in nozzles. Blading diagrams. Blading proportions. Losses. Efficiency, reheat factor, and condition line. Output variation and governing. Design. Problems. Index.

Note: A concise text on steam turbines presenting the general form and principal characteristics of a variety of turbines together with the application of thermodynamic principles to the calculation of the flow of steam through the nozzles and blade passages of the turbine, the changes in its energy pressure and volume, and the various factors affecting efficiency. The second edition contains new material on supersaturation, the flow of wet steam in nozzles and blading, runaway speed, and stalling conditions, together with new illustrations and new reference material.

CRAIG, DUDLEY PEAK, AND HERBERT J. ANDERSON

Steam power and internal combustion engines. Second edition. New York: McGraw-Hill Book Company, Inc., 1937. 571 p. illus. 23 cm. \$4.50. 3990

Contents: Fundamentals of power plants. Principles of thermodynamics. Fuels and combustion. Steam-power boilers. Stoker, and coal handling. Equipment for burning pulverized coals, oil, gas, and wood. Draft equipment and compressors. Air pre-heaters. Steam superheaters and separators. Feed-water heating and treatment. Steam-engine study. Special designs of steam engines. Steam turbines. Condensing equipment. Pumping equipment. Internal combustion engines.

Note: This textbook aims to present the fundamental principles of heat-power machinery and a description of the development, construction, and operation of essential equipment of the modern power plant. The importance of engineering methods used to determine exact results pertaining to efficiency and performance of various equipment is stressed. In this edition all material was revised in the light of engineering developments up to 1937.

CROFT, TERRELL WILLIAMS, EDITOR

Steam boilers, revised by R. B. Purdy. Second edition. New York: McGraw-Hill Book Company, Inc., 1937. 417 p. illus. 21 cm. \$4.00. 3991

Contents: Function, classification and requirements of the steam boiler. Evolution of the steam boiler. Steam generation and boiler capacity. Fire-tube boilers. Water-tube boilers. Superheaters. Water walls. Materials used in steam boiler construction. Stresses in and strength of steam boilers. Joints. Braces and stays. Fire tubes and water tubes. Manholes and handholes. Boiler accessories. Fuels. Combustion and hand firing. Stokers and pulverized coal. Petroleum and gaseous fuels. Boiler settings and furnaces. Draft and its production. Chimneys, breechings and dampers. Mechanical draft. Economizers and air preheaters. Feed water and feed-water treatment. Management, inspection, and maintenance of steam boilers. Selection of steam boilers. Index.

Note: This book covers the functions, types, construction, accessories, capacities, ratings, and selection of steam boilers. Codes and inspection regulations are also discussed, and changes in code requirements are reflected in this new edition. Other changes occur in the treatment of types of boilers, stokers, pulverized coal, oil burning, boiler settings, furnaces, etc.

CROFT, TERRELL WILLIAMS, EDITOR

Steam-engine principles and practice. Revised by E. J. Tangerman. Second edition. New York: McGraw-Hill Book Company, Inc., 1939. 513 p. illus. 21 cm. (Power plant series) \$3.50. 3992

Contents: Function and principle of the steam engine. Steam-engine mechanisms and nomenclature. Steam-engine indicators and indicator practice. Slide valves and their setting. Corliss and poppet valves and their setting. Fly-ball steam-engine governors, principles and adjustment. Shaft steam-engine governors,

principles and adjustment. Compound and multi-expansion engines. Condensing and non-condensing operation. Steam-engine efficiencies and how to increase them. Steam engines of later types. Steam-engine testing. Reciprocating-engine management, operation, and repair. Use of superheated steam in engines. Selecting an engine. Steam-engine lubrication. Solutions to problems. Index.

Note: A practical text and reference book for the operating engineer or plant superintendent. It is limited to a discussion of the uses and practical applications of steam engines and their selection, operation, care, and methods of repair. No attempt has been made to include mathematical theory of operation or principles of design. A large number of drawings illustrate the text and there are descriptive expositions with worked out arithmetical examples and a number of review questions following each chapter. The second edition incorporates data on newer types of engines and describes applications developed between 1922-1939.

CROFT, TERRELL WILLIAMS, EDITOR

Steam-turbine principles and practice. Revised by S. A. Tucker. Second edition. New York: McGraw-Hill Book Company, Inc., 1940. 298 p. illus. 21 cm. (Power plant series) \$3.00. 3993

Contents: Steam-turbine fundamental principles. Steam-turbine nomenclature and classification. Steam-turbine types and construction. Steam-turbine installation. Steam-turbine shafts, bearings and packing glands. High-pressure, extraction, mixed-pressure, and exhaust-steam turbines. Steam-turbine governors and valves. Steam-turbine reduction gears and couplings. Steam-turbine lubrication. Steam-turbine operation and maintenance. Steam-turbine testing. Effect of steam pressure, superheat, and vacuum on steam-turbine economy. Steam-turbine economics and selection. Steam-turbine applications. Index.

Note: A reference manual presenting a simplified treatment of the information on steam turbines needed by plant owners, managers, and operators. Only sufficient theory is given to enable the practical man to understand the correct way of operating a turbine. Many types of turbines are described and illustrated, with brief accounts of their principles of operation, their construction, and performance. The second edition incorporates new material on recent features of design and construction, including new illustrations and discussions of governors, glands, lubrication, and other physical details. The material is based partly on manufacturer's specifications and trade literature.

GAFFERT, GUSTAF ADOLF

Steam power stations. Second edition. New York: McGraw-Hill Book Company, Inc., 1940. 592 p. illus. 23 cm. \$4.50. 3994

Contents: Introduction. Steam engines. Steam turbines. Condensers. Feed-water heaters and evaporators. Feed-water treatment. Fuels and combustion. Steam generating units. High-pressure and binary-cycle boilers. Dust collectors. Economizers and air heaters. Superheaters and reheaters. Fuel-burning equipment. Dustwork and piping. Draft system. Coal and ash handling. Pumping equipment. Steam station costs. Load curves and plant location. Selection of prime movers and steam generating equipment. Cycle arrangement. Binary vapor cycles. Optimum cycle and units. Station design. Index.

Note: A textbook for colleges and a reference book for practicing engineers, covering steam power plant machinery from the standpoint of construction of the various types of equipment, their performance characteristics, economics, and integration in the complete plant. The subjects of high pressure steam cycles, binary cycles, and station design are given special attention. The second edition covers developments in steam power station design from 1936 to 1940 and several new chapters have been added, including new material on electrostatic dust collectors, optimum cycle and units, Mollier steam diagram, a steam flow nomograph, as well as new data tables and illustrations of equipment.

HARDING, LOUIS ALLEN

Steam power plant engineering. New York: John Wiley & Sons, Inc., 1932. 777 p. illus. 24 cm. \$10.00. 3995

Contents: Fuels and combustion. Power boilers and furnaces. Natural and mechanical draft for power boilers. Mechanical

stokers. Fuel pulverizers and oil burners. Superheaters, desuperheaters, resuperheaters, economizers and air preheaters. Feed-water heaters, deaerating heaters, evaporators, and feed-water purification. Pumps, steam engines. Steam turbines. Regenerators and reheaters. Steam condensers and cooling towers. Power plant cycles and heat balance. Pipe, fittings, valves, heat insulation coverings, accessories and power-plant piping. Arrangement of steam power plants. Index.

Note: A comprehensive discussion, for engineering students and practicing engineers, of the major problems involved in the design of power plant apparatus, the rating of the apparatus, their co-relation in the scheme of power plant engineering, and the economic factors involved in their selection. Many data concerning the efficiencies and characteristics of the various apparatus are included in charts and tables. A knowledge of elementary thermodynamics, applied mechanics, and chemistry is assumed. The material and illustrations for several of the chapters have been adapted from Volume II of *Mechanical equipment of buildings*, New York: John Wiley & Sons, Inc., 1917, of which title Harding was a joint author.

KEENAN, JOSEPH HENRY, AND FREDERICK G. KEYES

Thermodynamic properties of steam, including data for the liquid and solid phases. New York: John Wiley & Sons, Inc., 1936. 89 p. illus. 26 cm. \$2.75. 3996

Contents: Introduction. Symbols used in tables. Table 1. Saturation: temperatures. Table 2. Saturation: pressures. Table 3. Superheated vapor. Table 4. Compressed liquid. Table 5. Saturation: solid-vapor. Table 6. Viscosity. Table 7. Heat conductivity. Table 8. Conversion factors. Table 9. Thermometer calibration formulas. Table 10. Logarithms to the base of 10. Table 11. Logarithms to the base of *e*.

Note: This new edition of the steam tables incorporates general revisions of the values utilizing a new basis for the evaluation of the properties of water. In addition, the range of temperature and pressure has been extended to 1600 degrees F. and 5500 lbs. per square inch. Tables giving viscosity, heat conductivity, specific heat, compressed liquid properties, data on ice and its vapor, as well as other physical variables are included.

MACNAUGHTON, EDGAR

Elementary steam power engineering. Second edition, rewritten and reset. New York: John Wiley & Sons, Inc., 1933. 649 p. illus. 23 cm. \$5.00. 3997

Contents: Elementary steam power plants. Steam boilers and settings—boiler and setting fittings—physical units and their measurement. Properties of air, water and steam. Steam calorimeters. Fuels. Combustion, flue gas analysis, boiler losses. Smoke-prevention, furnaces and stokers. Rating and efficiency of steam boilers. Steam boiler testing. Pipe systems, pipe valves and pipe accessories. Feedwater heaters and purifiers. Feedwater purification. Boiler scale. Corrosion. Tube cleaners and soot blowers. Superheaters. Draft and methods of producing draft. Coal and ash handling equipment. Reciprocating steam engine. Simple engines. Slide valve engines, valve diagrams and slide valve setting. Multi-valve engines. Steam engine indicator and its applications. Steam engine efficiencies and losses. Compound and multiple expansion engines. Methods of lubrication. Engine accessories. Steam engine testing. Steam turbines. Steam and power driven pumps. Condensers and condenser auxiliaries. Typical modern power plants. Index.

Note: A discussion of the fundamental principles underlying the construction, operation, and testing of steam power plant equipment, including the various types of steam boiler. A minimum of mathematics is used, and practical phases of each topic are described before the theory is considered. Among the major additions in the second edition are: use of Keenan steam tables, a discussion of intrinsic energy, work done under the expansion used in steam-power apparatus, theoretical steam-power cycles, boiler performance, furnace refractories, automatic combustion control, handling of ashes from pulverized coal furnaces, heat balancing, trends in boiler rating, fan performance, pump performance, modern power-plant trends, power-plant location and costs, power-plant buildings, and the mercury-vapor steam cycle.

MOYER, JAMES AMBROSE

Power plant testing; a manual of testing steam generating equipment, engines, turbines,

pumps, refrigerating machinery, fans, fuels, lubricants, etc. Fourth edition, rewritten, enlarged. New York: McGraw-Hill Book Company, Inc., 1934. 614 p. illus. 23 cm. \$5.00. 3998

Contents: Measurement of pressure. Measurement of temperature. Determination of the moisture in steam. Measurement of areas. Engine indicators, reducing motions, and speed-measuring instruments. Measurement of power—dynamometers. Flow of fluids. Calorific value of fuels—solid, liquid, and gas. Flue-gas analysis. A.S.M.E. code on general instructions regarding power plant tests. Testing of boilers and other steam-generating units. Steam-engine testing. Testing steam turbines and turbogenerators. Methods of correcting steam-turbine and engine tests to standard conditions. Tests of complete steam power plants—coal fired. Gas- and oil-engine and producer testing. Testing of ventilating fans or blowers and air compressors. Testing of refrigeration plants. Testing of condensers and feed-water heaters. Testing atmospheric water-cooling equipment—cooling towers, spray-nozzle installations and cooling ponds. Tests of hoists, belts, and friction wheels. Testing of lubricants. Tests of hydraulic machinery. Testing of governors. Outlines of suggested tests. Appendix. Steam tables. Properties of common substances. Metric conversion table. Pressure equivalents. Index.

Note: A treatment of the generally approved methods of testing engines, turbines, boilers, and auxiliary equipment found in power plants. This fourth edition has been revised to cover new methods based upon the use of high steam pressures and rotary prime movers in plant equipment. New codes and testing methods are included in the book, including the code proposed and recommended by the American Society for Mechanical Engineers Research Committee to determine for "guarantee" tests the steam consumption of noncondensing and bleeder steam turbines by the calculated flow through suitable nozzles.

NEWMAN, LOUIS E., EDITOR

Modern turbines, by Louis E. Newman, Allen Keller, John M. Lyons, and Lawrence B. Wales. Prepared for engineers interested in the specification, selection, application, and operation of steam turbines. New York: John Wiley & Sons, Inc., 1944. 175 p. illus. 22 cm. (General Electric series) \$2.50. 3999

Contents: Fundamentals of steam turbines. Types of steam turbines and range of conditions. The steam chart and theoretical steam rate. Estimating performance in terms of steam rate. Estimating performance in terms of heat rate. Performance charts for condensing, noncondensing, and automatic extraction turbines. Changed conditions. Steam turbine governors. The generator. Appendix: Turbine-generator recommended practices. Reference list. Index.

Note: Supplies not only essential basic information but the working tools for thoroughly understanding simple and complex turbines, their performance characteristics, how to select them for most efficient and economical performance, and methods for quickly and accurately estimating steam performance without elaborate calculations. It is prepared for power plant engineers and operators, for mechanical and electrical engineers. The specification, selection, application, and operation of steam turbines are all covered.

POTTER, ANDREY ABRAHAM, AND JAMES P. CALDERWOOD

Elements of steam and gas power engineering. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1938. 374 p. illus. 21 cm. \$2.75. 4000

Contents: Fundamentals of power engineering. Fundamental principles. Steam power fuels and combustion. Steam. Boilers. Boiler auxiliaries. Piping and boiler-room accessories. Steam engines. Steam turbines. Engine and turbine auxiliaries. Steam power plant testing. Internal-combustion engines. Internal-combustion engine fuels and gas producers. Auxiliaries for internal-combustion engines. Gas power plant testing. Mechanical power in transportation. Index.

Note: Intended as a textbook for students in engineering schools and colleges to familiarize them with power plant equipment as a preparation for the study of thermodynamics and power plant design. Operating principles and structural details of steam and gas power plants are described, followed by a

discussion of the practical applications to locomotives, automobiles, trucks, and tractors. The fourth edition contains new chapters on the elements, thermodynamics, fuels, and combustion, a survey of power producing capacity in the United States, and a chapter on mechanical power in transportation.

SEVERNS, WILLIAM HARRISON, AND HOWARD E. DEGLER

Steam, air, and gas power. Third edition. New York: John Wiley & Sons, Inc., 1939. 511 p. illus. 23 cm. \$4.00. 4001

Contents: Introduction. Principles of thermodynamics. Heat-power plants. Steam and steam calorimetry. Steam fuels and combustion. Steam generators or boilers. Steam generator auxiliaries. Feedwater treatment and feedwater heaters. Draft apparatus; chimneys and fans. Reciprocating steam engines. Steam engine power and economy. Steam turbines. Steam-condensing equipment. Pumps. Compressed air. Internal-combustion engines. Appendix: Additional tables. Index.

Note: The aim of this comparatively elementary book is to present illustrations, descriptions, and underlying theory of construction, application, and performance of modern heat-power plants and their correlated equipment. Specific changes in this edition are: a rewritten and augmented chapter on the principles of thermodynamics; the inclusion, in the appendix, of tables showing the properties of saturated and superheated steam, abridged from Keenan and Keyes' *Thermodynamic properties of steam* (see Index); a more concise treatment of fuels and their combustion, combined in one chapter; the use of equations for the chemical reactions involved in the treatment of feedwaters; the inclusion of additional information in regard to fan performance; the more succinct discussion of steam engines; the treatment of recent advances in steam-generating equipment and current developments in steam turbines and internal-combustion engines.

SPRING, HARRY MORTIMER

Boiler operator's guide; construction, operation, inspection, and maintenance of steam boilers, with 310 typical steam engineer's examination questions and answers. New York: McGraw-Hill Book Company, Inc., 1940. 353 p. illus. 23 cm. \$3.00. 4002

Contents: Preface. Abbreviations and symbols. General construction and stress calculations. Fire-tube boilers. Watertube boilers (straight tube). Watertube boilers (bent tube). Watertube boilers (bent tube)—special service and European. Boiler appliances and auxiliaries. Boiler-plant management. Problems of plant operation. Appendixes: Glossary of boiler terms. Materials. Boiler scale. Instructions for riveted patches. Boiler safety rules. Index.

Note: A text and reference book on boilers and boiler equipment covering the design, construction, installation, operation, and maintenance of a variety of boilers from fire-tube type to high-pressure steam generators in the United States and abroad. A discussion of plant management including personnel problems and work schedules is also given. The text is written in non-technical terms for the benefit of the beginner. Questions and answers, typical of examinations given for boiler inspectors' and engineers' licenses by various states of the United States, are given at the end of each chapter.

WOODRUFF, EVERETT BOWMAN, AND H. B. LAMMERS

Steam plant operation. New York: McGraw-Hill Book Company, Inc., 1935. 368 p. illus. 21 cm. \$3.00. 4003

Contents: Introduction. Boilers. Construction of boilers. Combustion of fuels. Settings, combustion equipment, and heating surfaces. Boiler accessories. Operation and maintenance of steam boilers. Construction of steam engines. Valve-operating mechanism and governors. Economic operation of the steam engine. Operating characteristics of the steam engine. Steam turbine. Pumps. Auxiliary power plant equipment.

Note: The book gives approved methods of operating all equipment usually found in the power plant, outlines in a clear and concise manner the rules of procedure to be followed, and depicts the progress and development of this branch of engineering. Important, practical problems are solved without the use of involved mathematics.

Gas and Oil Engines

ANDERSON, JOHN WALLACE

Diesel engineering. New York: McGraw-Hill Book Company, Inc., 1938. 269 p. illus. 23 cm. \$3.00. 4004

Contents: Thermodynamic cycles. Actual engine cycles and indicator cards. Fuels. Combustion. Combustion chambers. Fuel injection. Governing. Engine performance. Cooling of engines. Lubrication of engines. Mechanics and dynamics of engine design. Design of engine parts. General design characteristics. Installation principles.

Note: A short text for college courses, presenting the fundamental principles of the action, construction, and use of the Diesel engine.

ANDERSON, JOHN WALLACE

Diesel operators' manual. New York: McGraw-Hill Book Company, Inc., 1938. 263 p. illus. 18 cm. \$2.50. 4005

Contents: Introduction. Installation. Performance records. Starting the engine. Stopping the engine. Operating the engine. Controls. Intake and exhaust systems. Fuel oils. Lubrication. Cooling systems. Combustion. Air-injection engines. Operating difficulties. Maintenance. Special repairs. Safety.

Note: A manual for every-day use by the Diesel engine operator, giving fundamentals of the engine process that will give him an understanding of all types and sizes of engines, new and old, and showing how engine dependability and economy are best secured through safety of operation. Also includes many practical facts and methods on what to do to keep the engine running properly, what troubles to avoid and how to avoid them, and what to do when trouble comes.

BOYER, GLENN CLINTON

Diesel and gas engine power plants. New York: McGraw-Hill Book Company, Inc., 1943. 447 p. illus. 23 cm. \$4.00. 4006

Contents: General introduction. Variable loads in power plants. Power-plant performance. Economic studies. The industrial power plant. Pipe-line pumping stations. The power-plant building. Selecting the engine. Fuel oil. Gas fuel. Lubrication. Engine cooling. Intake and exhaust systems. Piping systems. Waste-heat recovery. Accessories. Maintenance. Electrical equipment. Electrical system layout. Equipment testing.

Note: Deals with the economics, design, and operation of Diesel and gas engine power plants, including practical information that enables the designer to estimate construction and operating costs of new plants and provides a standard of comparison for operating costs in existing plants. Mechanical and electrical features are presented both from the viewpoint of the plant designer and the operator.

COUSINS, FRED MADISON

Analytical design of high speed internal combustion engines. New York: Pitman Publishing Corporation, 1941. 230 p. illus. 23 cm. \$3.50. 4007

Contents: Engine thermodynamics. Balance of in-line engines. Crankshaft balance. Balance of V-type engines. Kinetic energy. Crankshaft torque. Radial engines. The Desaxe engine. Vibrations of crankshafts. Flywheel design. Cam design. Harmonic analysis. Crankshaft stresses and strains. Design of crankshaft bearings. Firing orders. Bibliography.

Note: A text giving data and formulae on the dynamics of high speed engine design, written for the advanced engineering student and the designing engineer. Practical application is stressed, analysis being restricted to the calculus and simple harmonic theory. There is no index.

DEGLER, HOWARD EDWARD

Diesel engines; theory and design. A practical text on the efficiency of internal-combustion engines; thermodynamics of internal-combustion cycles; fuels; combustion and combus-

tion chambers; testing and performance; principles of engine design; and design of major engine parts. Chicago: American Technical Society, 1939. 270 p. illus. 21 cm. \$2.50. 4008

Contents: Development and application. Thermodynamics of internal-combustion engine cycles. Fuels, combustion and combustion chambers. Testing and performance. Principles of engine design. Design of major engine parts. Reference table for worked examples. Index.

Note: This book is intended for the use of students, designers, and draftsmen. It was written with the assumption that the reader has a knowledge of the principles of mechanics, and a general acquaintance with the mechanism of some form of internal-combustion engine. Practice problems are included.

DEGLER, HOWARD EDWARD

Internal-combustion engines; theory, design, analysis, application, performance, and economics. New York: John Wiley & Sons, Inc., 1938. 411 p. illus. 23 cm. \$4.00. 4009

Contents: Development and application. Fuels and fuel-air mixtures. Explosion and combustion. Thermodynamics of internal-combustion cycles. Two-stroke cycle and four-stroke cycle gas engines. Automobile and aircraft engines. Vaporizing oil engines. Heavy-duty Diesel engines. High-speed Diesel engines. Influence of shape of the Diesel combustion chamber. Diesel fuel injection. Design of major engine parts. Engine details; accessories and auxiliaries. Testing and performance. Economics of gas and oil power. Appendix. Index.

Note: An authoritative discussion of the theory, design, analysis, application, performance, and economics of internal-combustion engines. The treatment is not advanced. Theory is covered and emphasis is placed upon the properties of fuels and the chemistry of combustion. Principles of design for major engine parts and for accessories and auxiliaries are set forth for both gasoline and Diesel types. A 20-page appendix presents the American Society of Mechanical Engineers test code for internal-combustion engines.

DIESEL ENGINE MANUFACTURERS' ASSOCIATION, NEW YORK

Standard practices. New York: Diesel Publications, Inc., 1938. 162 p. illus. 23 cm. U.S., \$2.00; other countries, \$2.50. 4009a

Contents: Foreword. Standard performances, equipment, and definitions. The cost of Diesel power. The selection of engine sizes for a given load. Diesel power-plant buildings. Diesel-engine construction. Governors and speed regulation. Erection of Diesel engines. Fuel-oil storage and handling systems. Lubricating oil systems. Cooling water systems. Intake and exhaust systems, including heat-recovery apparatus. Generators and electrical equipment. Torsional vibration and critical speeds. Suggestions covering the preparations of invitations for bids and detailed specifications. Field-test code. Index.

Note: A survey of good and standard practices in the use of Diesel power. It is designed for users of Diesel engines and consulting engineers. The original edition of 1930 was revised, extended, and amplified in 1935 and the present work reprints the 1935 edition. The subject matter deals primarily with heavy duty, low- and medium-speed engines of the 200 horsepower and larger sizes commonly used in stationary power plants.

DIESEL ENGINEERING HANDBOOK, 1943. De luxe edition. Originally edited by L. H. Morrison. Revised by Charles F. Foell. New York: Diesel Publications, Inc., 1943. 966 p. illus. 23 cm. U.S., \$7.00; other countries, \$8.00. 4009b

Contents: Preface. Heat engines. The Diesel cycle. Fuel-injection systems. Combustion systems. Efficiencies and economics. Combustion of fuel. Fuel oil. Fuel-injection pumps. Fuel-spray nozzles. Frames and cylinders. Frame and cylinder maintenance. Pistons and rings. Connecting rods and pins. Crankshafts and bearings. Cylinder heads and valve gearing. Isolation. Air systems. Speed governors. Supercharging. Fuel handling. Diesel lubrication. Lubricating oil systems. Cooling water systems. Exhaust systems. Starting systems. Voltage regulators. Couplings for Diesel drive. Clutches for Diesel drive. Engineering fundamentals. Editorial index. Advertisements. Advertising index.

Note: This large handbook primarily for operators of Diesel engines treats the whole field of such engines and their accessories. The final chapter discusses fundamental physical laws that are useful to the operating engineer. The present edition, the ninth, has been revised to include new developments. A considerable portion of the text is the same as in the authors' *Diesel engines: a complete home study course* (described below).

DIESEL PUBLICATIONS, INC.

Diesel engines; a complete Diesel home study course, originally prepared by L. H. Morrison, revised by Charles F. Foell. New York: Diesel Publications, Inc., 1942. 824 p. illus. 23 cm. \$8.00. 4010

Contents (abridged): The Diesel industry. Basic principles. Fuel-injection systems. Combustion systems. Slow, medium, and high-speed Diesels. Frames and cylinders. Pistons and rings. Connecting rods and pins. Crankshafts and bearings. Cylinder heads, valves, and valve gearing. Fuel pumps and nozzles. Speed governors. Fuel oil. Lubrication. Cooling water systems. Efficiencies and economics. Engineering fundamentals. Diesel trucks, tractors, railtrains and locomotives. Aircraft Diesels. Plants. Operating procedure. Answers to questions.

Note: A comprehensive home-study course, arranged as a series of forty lessons, each covering a separate phase of Diesel operation. Designed for the student who is employed in or around Diesel plants and can therefore supplement the study course with observations of engines in operation. The practical aspect is stressed throughout and questions of theory and design are omitted. No mathematics beyond simple algebra is required. The revised edition contains minor changes in statistics on the industry.

GOAD, EDGAR FORD

American Diesel engines, their operation and repair. New York: Harper & Brothers, 1942. 313 p. illus. 24 cm. \$2.75. 4011

Contents: Heat, energy, power. The Diesel principle. Fuels and combustion. The real Diesel. Fuel and combustion systems. Fuel systems. Auxiliary apparatus. Construction of the Diesel engine. Automotive and portable Diesels. Stationary and marine Diesels. Instruments used in operating Diesel engines. Starting the Diesel. Diesel operation. Diesel upkeep. Breakdown and major repairs. Overhauling and rebuilding. Truck and tractor Diesel maintenance. Index.

Note: A systematic and elementary explanation of the general principles of the Diesel engine, and the construction and operation of all sizes and types, from the small auxiliary to the giant industrial motor. It also includes detailed instructions for the operation and repair of specific American makes of engines.

HELDT, PETER MARTIN

High-speed combustion engines: design, production, tests. Twelfth edition of *The gasoline motor*. Nyack, N.Y.: P. M. Heldt, 1944. 776 p. illus. 21 cm. \$7.50. 4011a

Contents: Preface. The Otto cycle. Conversion of reciprocating into rotary motion. Balancing of engines. Combustion-chamber design—detonation and roughness. Engine cylinders. The crankcase—engine mountings. Production of engine blocks. Piston, piston rings and piston pin. The connecting rod. Crankshafts and flywheels. Determination of bearing loads. Torsional vibration and vibration dampers. Engine valves. Valve-actuating mechanism. Camshaft and accessories drives. The working media—gasoline and air. The carburetor. Ignition equipment. Bearings and lubrication. Water-cooling. Air-cooling. Manifolds and muffler. Speed control—the governor. Power output and other characteristics. Engine tests. The laws of gases—thermodynamics. Unconventional engines. Appendix. Plate supplement. Index.

Note: Intended both as a text for students and a reference tool for engineers. The work originally appeared in 1912 under the title *The Gasoline motor*. In the twelfth edition, while the topics discussed and the arrangement of material are the same as in the preceding edition (1941), the work has been brought up to date and expanded with the introduction of a chapter on unconventional engines, and the inclusion of new material on engine blocks, connecting rods, crankshafts and flywheels, valve-actuating mechanism, water and air cooling, manifolds and mufflers, and engine tests.

HELDT, PETER MARTIN

High-speed Diesel engines, for automotive, aeronautical, marine, railroad and industrial use, with a chapter on other types of oil engines. Fourth edition completely revised. Nyack, N.Y.: P. M. Heldt, 1943. 430 p. illus. 21 cm. \$4.00. 4012

Contents (abridged): Nature of the engine and its field of application. Thermodynamics of the Diesel cycle. Fuels for Diesel engines. Modern injection pumps and governors. Direct-injection engines. Two-stroke engines. Aircraft engines. Railroad engines. Supercharging. Lubrication. Operation and maintenance.

Note: The purpose is to describe the more important principles of Diesel engine design and to illustrate the applications of these principles by reference to various engines incorporating them. In this edition more attention is given to American, and less to foreign makes of engines. Chapters on supercharging and lubrication have been added.

JENNINGS, BURGESS HILL, AND EDWARD F. OBERT

Internal combustion engines, analysis and practice. Scranton, Pa.: International Textbook Company, 1944. 471 p. illus. 23 cm. \$4.50. 4013

Contents: Internal combustion engine types and operation. Engine testing. Basic internal combustion engine characteristics. Thermodynamics. Cycle analyses. Fuels. Combustion charts. Exhaust gas analysis. Detonation. Carburetion. Injection. Gasoline engines and combustion chambers. Cylinder arrangement and engine balancing. Internal combustion engine installations. General problems of the internal combustion engine. Appendix. Index.

Note: A comprehensive study of the theory underlying internal combustion engine design and operation, written for engineering students and practicing engineers. Each chapter contains practice problems and references.

LICHTY, LESTER CLYDE

Internal combustion engines. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1939. 603 p. illus. 23 cm. \$4.50. 4014

Contents: The internal-combustion-engine process. Thermodynamics for engine analysis. The combustion process. Air-standard cycle analysis. Internal-combustion-engine-process analysis. Deviations from ideal processes. Liquid and gaseous fuels. Detonation and knock testing. Carburetion and fuel injection. Manifolds and mixture distribution. Valves and valve mechanisms. Ignition of the charge. Combustion-chamber and cylinder-head design. Engine lubrication. Engine cooling. Engine performance. Mechanics of principal moving parts. Engine vibration and balance. Engine design. Appendix. Index.

Note: A discussion of the principles of internal-combustion engines and their application. The purposes of the book are to teach principles, to develop and challenge the analytical ability of the student, and to serve as a basis for more advanced work. The chapters dealing with fuels, detonation, and fuel injection have been rewritten, a new chapter on spark ignition has been added, and the analysis of the combustion and other thermodynamic processes has been simplified by the direct use of the general energy equation with the chemical energy concept. The fourth edition was published under the joint authorship of Robert L. Streeter and Lester C. Lichty.

MALEEV, VLADIMIR LEONIDAS

Internal-combustion engines, theory and design. New York: McGraw-Hill Book Company, Inc., 1933. 386 p. illus. 23 cm. \$4.00. 4014a

Contents: Preface. List of abbreviations. List of symbols. Introduction. Principles of thermodynamics. Theoretical cycles. Engine performance. Four-stroke explosion engines. Four-stroke combustion engines. Two-stroke engines. Engine efficiencies. Fuels. Combustion. Handling of light fuels. Handling of fuel oils. Cooling. Temperature effects. Reciprocating-rotary motion. Flywheels and governors. Vibration and balancing. Engine design. Running gear. Crankshafts. Framework. Cylinders—heads, intake—exhaust—scavenge. Lubrication. Starting—reversing. Rating

and testing. Representative engine types. Appendix: literature, Index.

Note: This technical treatment is intended both as a college textbook and as a manual for the designing engineer. Its plan assumes that the reader is familiar with thermodynamics and engineering mechanics. References to technical literature are given in the text and in the appendix. Problems are included for classroom use.

MORRISON, LACEY HARVEY

American Diesel engines. Second edition. New York: McGraw-Hill Book Company, Inc., 1939. 489 p. illus. 23 cm. \$5.00. 4015

Contents: The Diesel engine. Development of the Diesel. Air-injection Diesels. Modern heavy-duty, mechanical-injection Diesels. High-speed Diesels. Combustion of fuels. Combustion systems. Oil-engine installation. Diesel engine frames. Main bearings and crankshafts. Pistons and piston rods. Connecting rods. Cylinders and cylinder heads. Admission and exhaust valves. Cylinder pressures, combustion action, indicator diagrams, indicated horsepower, engine performance. Fuel-injection and combustion systems. Lubrication. Cooling systems. Index.

Note: A manual of Diesel applications, installation, and maintenance for the use of engineers concerned with the operation of Diesel engines. The construction and operation of American engines are discussed and illustrated. The second edition represents a complete revision of the work, with new material on high-speed Diesels, combustion, cylinder pressures, and engine performance.

MORRISON, LACEY HARVEY

Diesel engines, operation and maintenance; a practical text on the construction, operation, and repair of heavy-duty engines. Chicago: American Technical Society, 1936. 220 p. illus. 21 cm. \$2.25. 4016

Contents: Combustion principles in modern Diesels. Installation of Diesels. Crankshafts and main bearings. Cylinders and liners. Valves and gearing. Pistons and connecting rods. Governors. Fuel injection. Air compressors. Cooling systems. Fuel. Lubrication. Air filtration. Starting systems. Appendix. Glossary of Diesel terms. Index.

Note: A practical textbook on the subject, intended for students and beginners. The text is clear and concise and adapted for home study. Troubles that are likely to occur in operating heavy-duty engines are described and methods of adjustment and repair are explained.

MORRISON, LACEY HARVEY

High-speed Diesel engines; a practical text on high-speed Diesels, including instruction on fuel-injection and combustion systems, frames and cylinders, running gear, and construction details of the different models of the Diesel engines and their applications to industry and transportation. Chicago: American Technical Society, 1939. 243 p. illus. 21 cm. \$2.50. 4017

Contents: Combustion in the Diesel. Fuel injection systems. Fuels. Frames and cylinders. Running gear. Construction details of various popular engines manufactured in the U.S.A., and also European aviation, truck and bus engines. Index.

Note: This non-technical, well-illustrated work is intended for prospective owners and operators. No attempt is made to cover the subject from the designer's point of view. Several of the well-known makes are described and there is discussion of European airplane, truck and bus engines.

POLSON, JOSEPH ALBERT

Internal combustion engines. Second edition. New York: John Wiley & Sons, Inc., 1942. 548 p. illus. 23 cm. \$5.00. 4018

Contents: Internal combustion engines—general discussion. Fuels. Combustion. Ideal engine cycles; constant specific heats. Ideal engine cycles; variable specific heats. Gas engines. Automobile engines. Carburetors. Electric ignition. Valves and cams.

Airplane engines. Diesel engines. Superchargers. Combustion chambers. Diesel fuel injection. Engine cooling. Gas turbines. Appendix. Index.

Note: A college textbook for junior or senior mechanical engineering students, describing the various cycles and types of engines in general use today. A thorough knowledge of fundamental thermodynamics is assumed. In developing the subject each cycle is first described and illustrated. Theoretical development is then discussed both by the air standard constant specific heat method and by the variable specific heat method. Performance is presented and analyzed, and typical examples and problems are given. The second edition presents approximately 100 pages of new material on such subjects as specific heats of gases, cams, air cooling, aircraft engines, and gas turbines, plus new data in the appendix.

REMSCHEL, CESAR WILHELM AUGUST

Gas engine handbook. New York: Industrial Gas Section, American Gas Association, 1939. 56 p. illus. 27 cm. \$1.00. 4018a

Contents: Foreword. Introduction. Early gas engine history. Operating cycle. Gas-engine applications. Brake H.P. and brake M.E.P. formulae. Gas engine auxiliaries. Power take-off. Protective devices. Exhaust system. Cooling system. Piping. Foundations. Figuring the cost of operation. Estimating gas consumption. Natural gas engine advantages. Gas-Diesel combination engines. Standby service. Waste heat recovery. Automatic engine controls. Automobile engines. Electrical data. Alternating current generators. Switchboards. Voltage regulators. Ampere ratings of motors. Efficiencies. Wire capacities. Parallel operation and selective switching. Pumps. Hydraulic data.

Note: This handbook on gas engines is sponsored by the Gas Engine Power Committee of the American Gas Association. The data and information which it contains were collected over a period of years by the author in his work with the Southern Counties Gas Company of California. The purpose of the publication is to help employees of gas-engine manufacturers and public utilities companies who are concerned with the sale and promotion of engines using natural gas as fuel. Accordingly, the author has presented the material in a manner easily understood, omitting involved theoretical and technical discussion.

RICHARDS, ELLIS LOYD

Diesel engines and Diesel electric power. A complete practical book of instruction on Diesel engines, their construction, principles, operation, care and adjustment; operation and care of electrical power equipment in connection with Diesel engines. Chicago: F. J. Drake & Co., 1939. 304 p. illus. 19 cm. \$2.50. 4019

Contents: Diesel-engine construction features and operating principles. Fuel injection systems. Fuel combustion systems. Diesel engine starting systems. Diesel engine exhaust systems. Diesel engine lubrication. Diesel engine operating procedure. Diesel-electric plant operation. Aircooled radial Diesel engines. Index.

Note: This book has been prepared to furnish laymen, mechanics, electrical workers, and students with a practical explanation of the construction and operation of Diesel engines. No attempt is made to cover engine design, erection of power plants, or major overhauling jobs. Emphasis is upon the care and adjustment of Diesel engines from the standpoint of the operator who has no formal knowledge of Diesel theory.

ROOT, RALPH EUGENE

Dynamics of engine and shaft. New York: John Wiley & Sons, Inc., 1932. 184 p. illus. 24 cm. \$3.00. 4020

Contents: The standard reciprocating mechanism. Balance, cylinders in line. Balance, strokes not parallel. Turning moment. Pressures at bearings. Rotary engines. Variations from standard motion. Torsional vibrations. Transverse vibrations. Critical speeds. Calculations for turning moment and bearing pressures. Engine data. Problems. Table of sines and cosines. Index.

Note: A compact reference for plant engineers and others interested in the subject of vibration. The treatment is comparatively elementary. The author presents methods for evaluating the forces which operate in a reciprocating engine, tracing their effects in turning moment on the shaft and bearing pressures, and, by emphasis on the periodic character of forces,

reveals their significance in relation to vibration. To this latter end the work includes a treatment of torsional and transverse vibrations of elastic systems and a discussion of critical speeds.

ROSBLOOM, JULIUS

Diesel hand book; a practical book of instruction for engineers and students on modern Diesel engineering, land, marine, locomotive, aero, automotive and portable installations. A combined hand book and textbook. Eighth edition. Plain text and in the form of questions and answers. Officially endorsed by the Diesel Engineers International Association. New York: Pioneer Publications Inc., 1943. 719 p. illus. 18 cm. \$2.98. 4021

Contents: Part I, The high compression oil engine: Theories and principles. Liquids and their characteristics. Metals and alloys suitable in Diesel service. Part II, Heavy duty engines of slow and medium speed: Air compression. Atomization systems. Hydraulics. Oil storage and piping system. Demonstration in management and maintenance. Marine practice. Auxiliaries. Pyrometer for Diesel engines. Indicating the Diesel engine. High-speed Diesel engines for automotive and industrial services. Diesel electric transmission for locomotive and railcar duties. Turbo blowers for scavenging and charging. Economizing by application of waste heat recovery. Questions and answers for licence examination for marine service and for land Diesel installations. Index.

Note: This book is designed for persons who are employed at or around Diesel plants. The practical viewpoint is stressed throughout, with little attention given to theoretical analysis or engine design. There are numerous tables of useful data for the Diesel operator or serviceman, as well as simplified formulas for calculatory engine power, efficiency, and other values. There are a large number of photographs and drawings showing typical models and applications.

SHEPHERD, HAROLD F.

Diesel engine design. New York: John Wiley & Sons, Inc., 1935. 227 p. illus. 23 cm. \$3.50. 4022

Contents: Historical. Combustion. The influence of the combustion-chamber walls. The fuel nozzle. The fuel pump. Governing. Cylinder head, valves and valve gear; starting. Two-cycle engines. Injection of gaseous fuel. Bearings and lubrication—pistons and piston rings. The indicator diagram. The inertia of reciprocating parts and balancing. The flywheel. Appendix: Reducing calculations in designing crankshaft members. Index.

Note: A textbook for Diesel engineers and students outlining the theory and operation of Diesel and semi-Diesel engines, with particular attention given to a study of combustion and fuel design. Characteristics of various types of crankshaft, valve, and flywheel design are also given.

TAYLOR, CHARLES FAYETTE, AND EDWARD S. TAYLOR

The internal combustion engine. Scranton, Pa.: International Textbook Company, 1938. 322 p. illus. 23 cm. (International texts in mechanical engineering) \$3.50. 4023

Contents: Engine capacity and efficiency. The air cycle. Thermodynamics of the fuel-air medium. Fuel-air cycles. Combustion in the spark-ignition engine. Detonation in the spark-ignition engine. Combustion in the compression ignition engine. Direct heat losses. Mixture requirements of the spark-ignition engine. Fuels for the internal combustion engine. Engine friction. Lubrication and oils. Spark ignition. Air capacity of four-stroke engines. Two-stroke engine performance. Selected bibliography. Index.

Note: A brief volume which is designed to furnish only basic instruction in the subject. The authors have prepared also *The internal combustion engine problem book*, Scranton, Pa.: International Textbook Company, 1941, 60 p., \$0.50.

VON BONGART, BENNO JOHN

Diesel engines. New York: D. Van Nostrand

Company, Inc., 1938. 335 p. illus. 23 cm. \$4.00. 4024

Contents: Introduction. History of the Diesel engine. Thermodynamics. Combustion. Fuel oils. Fuel atomization. Fuel pumps. Fuel injection nozzles. Common rail and air injection systems. Combustion chamber designs. Automotive Diesel engines. Aircraft Diesel engines. Medium and low speed Diesel engines. Superchargers. Diesel engine design features. Addendum. Bibliography. Index.

Note: A textbook of Diesel engine design. It explains the basic scientific principles that determine the details of design of injection nozzles, combustion chambers, superchargers, and the other parts of the engine. The effect upon engine operation and efficiency of variation in the major characteristics is shown by illustrations as well as by tabulated data—for example, the effect of variation in injection fuel-pressure is shown by diagrams of the droplet sizes of the atomized fuel, as well as by the engine efficiency cards. The discussions of the principles of design are directed especially to the solution of specific engineering problems.

Compressed Air

FELLER, EUGENE W. F.

Air compressors, their installation, operation and maintenance. New York: McGraw-Hill Book Company, Inc., 1944. 460 p. illus. 21 cm. \$4.50. 4024a

Contents: Preface. Introduction. Reciprocating compressors. Selecting air-compressor drive. Compressor accessories. Compressor load control. Reciprocating-compressor lubrication. Installing the compressor. Compressor operation. Reciprocating-compressor maintenance. Rotary compressors. Centrifugal compressors. Axial-flow compressors. Aligning rotating machines. Hydraulic compression of air. Theory of compressing air. Index.

Note: A practical discussion of rotary, centrifugal, and axial-flow compressors, intended as a guide for operating engineers and students. Diagrams and photographs illustrate the working parts of each type.

GILL, THOMAS T.

Air and gas compression. New York: John Wiley & Sons, Inc., 1941. 181 p. illus. 23 cm. \$3.00. 4024b

Contents: Definitions and fundamental units. Barometric pressure and altitude above sea level. Fundamental gas laws. Energy relations—single-stage compression. Compressor capacity. Volumetric efficiency and clearance. Indicated horsepower. Two-stage compression. Multistage compression. Exponent of compression. Volumetric efficiency and compressor brake horsepower. Compressor problems. Supercompressibility or deviation from the ideal gas laws. Compressors. Compressor plant. Gas lift and pressure maintenance. Flow of gas in pipe lines. Gas measurement by orifice meter. Use of alignment charts. Appendix. Index.

Note: A great deal of original research went into the preparation of this book, and much of the material appears here in book form for the first time. In addition to the theory of compression, there is also offered a chapter on the flow of gas in pipe lines, which is based on the Weymouth equation. A new series of tables is included which greatly reduces the labor required in computing pressure drop in pipe lines. The solution of problems is based on equations, tables, and alignment charts—an arrangement which will enable the reader to check nearly all computations in several different ways.

O'NEIL, FREDERICK W., EDITOR

Compressed air data; handbook of pneumatic engineering practice. Fifth edition. New York: Compressed Air Magazine, 1939. 408 p. illus. 18 cm. \$3.00. 4024c

Contents: Terminology and definitions. Theoretical compression of air. Boosters and vacuum pumps. Turbo or centrifugal blowers and compressors. Tables and data. Intake air, aftercooling, intercooling, reheating. Cost of compressing air. Pumping with air. Gas compression. Installation of compressors. Belting. Application and performance. Measurement of air flow. Index.

Note: A compilation of data primarily of interest to engineers and others who use compressed air machinery. A chapter has been included pertaining to the compression of natural gas.

This edition contains some new data, some of the graphs have been redrawn, and there are other important changes. There is no bibliography, but occasionally the source of the data is given in the text.

PEELE, ROBERT

Compressed air plant; the production, transmission and use of compressed air. Fifth edition, largely rewritten. New York: John Wiley & Sons, Inc., 1930. 534 p. illus. 23 cm. \$7.50. 4024d

Contents: Part I, Production of compressed air: Introduction. The compression of air. Structural characteristics of compressors. Comparisons of compressors and detail of design. The air cylinders of compressors. Operation of stage compressors. Air valves. Speed and pressure regulators and unloaders. Air receivers and aftercoolers. Performance of air compressors. Cost of compressed air. Air compression at altitudes above sea-level. Explosions in compressors and receivers. Air compression by the direct action of falling water. Part II, Transmission and use of compressed air: Conveyance of compressed air in pipes. Compressed-air engines. Freezing of moisture deposited from compressed air. Reheating compressed air. Rock-drills. Performance of rock-drills. Drill-bits and mechanical sharpeners. Coal-cutting and quarrying machinery. Pumping by compressed air. Compressed air haulage. Measurement of air consumption. Index.

Note: The fifth edition of this work presents the structural characteristics of compressors with numerous illustrations, and outlines the specifications of the types and sizes made by the principal builders in the United States and abroad. Seven chapters treat the features of compressor design and operation; the cost and performance of the compressors are also given. The chapter on rock-drills has been rewritten, excluding obsolete material on piston drills, discussing at length the construction and performance of hammer-drills. New chapters have been added on rock-drills, drill-bits, and mechanical sharpeners.

Automobiles

AMERICAN SOCIETY FOR TESTING MATERIALS

Symposium on new materials in transportation; Detroit spring meeting, March 6, 1940. Philadelphia: American Society for Testing Materials, 1940. 94 p. illus. 23 cm. Paper, \$1.25; cloth, \$1.50. 4025

Contents: Exhaust valve materials for internal-combustion engines, by S. D. Heron, O. E. Harder, and M. R. Nestor. Selection and application of automotive steels, by A. L. Boegehold, W. H. Graves, and E. W. Upham. Rubber of tomorrow, by Sidney M. Cadwell. Advances in the use of concrete in transportation, by Miles D. Catton. Recent developments in the use of asphalt for transportation purposes, by Bernard E. Gray. Trends in the properties of volatile liquid fuels, by D. P. Barnard and A. H. Fox. Developments in lubrication, by J. P. Stewart, R. C. Moran, and O. M. Reiff.

Note: Several of the papers in this volume are accompanied by reports of the discussion that followed their reading. The material is of interest to automotive engineers.

CROUSE, WILLIAM HARRY

Automotive electrical equipment, its operation and maintenance. New York: McGraw-Hill Book Company, Inc., 1942. 232 p. illus. 23 cm. \$2.00. 4026

Contents: The language of electricity. The storage battery. Battery maintenance. Cranking motor fundamentals. Cranking-motor service. Generator fundamentals. Theory of regulator operation. Quick-checking generator-regulator system. Checking and adjusting auto-lite regulators. Checking and adjusting delcomery regulators. Ford regulators. Generator service. Horns. The gasoline engine and fuel requirements. The ignition system. Ignition testing instruments. Troubleshooting the ignition system. Ignition maintenance. Switches. Periodic inspection of the electric system.

Note: A simplified guide to quick, efficient servicing and maintenance of automotive electrical systems. It gives clear instructions and detailed methods for testing, adjusting, and repairing the electrical units on passenger cars, trucks, and busses. Explains the make-up of automotive electric systems and the function of each unit in the operation of the vehicle.

CUMMING, WILLIAM JAMES

Automotive Diesel maintenance. New York, Chicago: Pitman Publishing Corporation, 1940. 106 p. illus. 22 cm. \$1.75. 4027

Contents: Introduction. Fuels. Fuel injection. Timing the engine. Cylinder block, cylinder head, crankcase and crankshaft. Connecting rod bearings, main bearings and pistons. Lubrication. Operation of engines. Maintenance in relation to fuel economy. An approved maintenance scheme explained. Salvage methods and preventive maintenance. A shop layout for efficient engine servicing and repair. Index.

Note: This work is based on the practical experience and intensive research of the operator of a very large fleet of motor trucks. It is intended not only for managers, superintendents and foremen, but for all Diesel mechanics.

DYKE, ANDREW LEE

Dyke's Automobile and gasoline engine encyclopedia; the elementary principles, construction, operation and repair of automobiles, gasoline engines and automobile electric systems; including trucks, tractors, motorcoaches, automotive Diesel engines, aircraft engines and motorcycles; simple, thorough and practical. Twentieth edition. Chicago: The Goodheart-Willcox Company, Inc., 1941. 1483 p. illus. (part col.) 25 cm. \$6.00. 4028

Contents: General assembly. The gasoline engine. Carburetion. Cooling and lubrication. Electricity, ignition. Engine starters. Electrical generator. Electrical systems. Troubles, testing, adjusting. Storage battery. Tires. Operating and care of a car. Automobile repairing. Commercial cars, tractors. Miscellaneous subjects. Addenda. Indexes.

Note: A practical reference manual for the repairman and car owner, presenting the basic principles involved in the operation of the gasoline engine, the automobile, and related self-propelled vehicles, together with a detailed outline of trouble shooting and methods of repair. Information is presented in the form of graded instructions, following in general the assembly of the automobile from engine and transmission to wheels, brakes, and accessory equipment. Numerous simplified diagrams explain the function of the various parts. Electrical theory is explained in considerable detail insofar as it relates to the electrical system of the vehicle and a variety of tests for generator, commutator, and circuit trouble are outlined. Although the latest model described in the main body of the text is that for the year 1930, there is an addenda of 111 pages in four sections covering the various models for the years 1932, 1934, 1935, and 1939-1940 respectively, in which the more important developments in design are outlined and methods of repair indicated. The book as a whole is useful primarily to the garage mechanic in servicing American makes of automobiles.

FRASER, EDWARD SMITH, AND OTHERS

Fraser and Jones' Motor vehicles and their engines. Fifth edition. By Norman G. Shidle, and Thomas A. Bissell, with the assistance of Tench Francis. New York: D. Van Nostrand Company, Inc., 1941. 339 p. illus. 23 cm. \$2.50. 4029

Contents: History of the automobile. The modern automobile. Bearings, gears, universal joints and slip joints. The engine, how it functions, its parts and construction. Engine troubles and repairs. Valve and ignition timing. Engine balance, vibration, and firing order. Engine lubrication. The cooling system. The fuel-feed system. Carburetors, air cleaners, and intake manifolds. The exhaust system. Magnetism. Elementary electricity. Induction. The battery and the generator. The automobile electrical system. Power transmission, the clutch, the transmission, the propeller shaft and universal joints, the rear axle and the differential. Running gear. Front-end alignment, steering systems, and brakes. Chassis lubrication. Motor fuels. Reference data for the repairman. Light military trucks, design features and differences from conventional vehicles. Appendix. Index.

Note: This elementary text, for the beginning student interested in doing practical repair work, explains the theory of

operation and maintenance of modern types of automobiles. Descriptive material is limited to the passenger-car field, but the general principles of tune-up and repair are applicable also to trucks.

GRUBER, FOSTER M.

Automotive engine testing; a manual of test procedure. New York: Pitman Publishing Corporation, 1940. 441 p. illus. 23 cm. \$4.75. 4030

Contents: Introduction. Mechanical principles. Mechanical details. Engine operation. Fuels and lubricants. Test equipment. The test plant. Basic computations. Test routine. Analysis and evaluation. Trouble segregation. Special tests and instruments. Balance and vibration. Appendixes. Bibliography. Index.

Note: This book describes test procedures commonly used in industrial plants in the United States. The material is conveniently arranged in the order of actual practice and a brief background is provided. For test engineers, experimental engineers, test observers, assistant test engineers, instructors, and students.

KUNS, RAY FOREST

Auto-mechanics. Based on Automotive essentials and Automotive service. Milwaukee, Wis.: The Bruce Publishing Company, 1943. 5 v. illus. 19 cm. (Civilian edition, identical with the edition for the United States Armed Forces Institute, Madison, Wis.) Paper, \$1.00 each volume. 4031

Contents: Course 1, The engine: Automobile design. Power-plant design. Engine theory and design. Cylinders, cylinder heads, and crankcases. Crankshafts, main bearings, and dynamic balancers. Connecting rods. Pistons, pins, and rings. Camshafts and camshaft drives. Valves and valve actions. Glossary. Answers. Index. Course 2, Cooling, lubrication, and fuel systems: Cooling system. Petroleum products for automotive uses. Lubricating the engine. The fuel system. Engine tests. Glossary. Answers. Index. Course 3, Automotive electricity: The electrical system. Fundamental electrical data. The storage battery. Lighting and accessories. Ignition. Starting motors. The generator. Radio service. Glossary. Answers. Index. Course 4, The power flow: Friction clutches. Transmissions. Special transmissions. Fluid couplings and hydraulic drive. Universals, drive shafts, motor-car drive, and anti-friction bearings. The rear axle. Rear-axle service. Front and four-wheel drive. Automobile frames. Car suspension. Glossary. Answers. Index. Course 5, Chassis units: Ride control. Front axle. Front-system geometry. Steering gears. Front system service. Brakes. Hydraulic brakes. Power brakes. Brake service. Wheels and tires. Maintenance service. Glossary. Answers. Index.

Note: Intended primarily for use in training courses in the Armed Services but adaptable for civilian home-study use. The material is presented in simple, practical terms and is illustrated with numerous drawings, diagrams, and photographs. There are short check-up tests every eight or ten pages covering the material just preceding, and there are longer tests covering a number of chapters. Answers to all tests are at the back of each book. There are separate bibliographies and indexes in each volume.

KUNS, RAY FOREST

Automotive service. Milwaukee: The Bruce Publishing Company, 1939. 2 v. illus. 23 cm. \$6.75. 4032

Contents: Volume 1, Unit 1, The service station. Unit 2, Frames, wheel suspension, steering and ride control. Unit 3, Transmissions, clutches, universals, and front-wheel drive. Unit 4, Rear systems and brakes. Volume 2, Unit 1, Power plants, oiling and cooling systems. Unit 2, Engine repair and maintenance. Unit 3, Fuel and ignition systems. Unit 4, Automotive electricity. Index in each volume.

Note: These two volumes provide the needed technical information and specific instruction material for a vocational course in school or the automotive mechanic on the job. All phases of repair and maintenance service are treated and amply illustrated. Volume one deals with simpler service material, and volume two contains more difficult maintenance and repair jobs. *Automotive essentials revised*, Milwaukee: Bruce Publishing Com-

pany, 1935, 433 p., \$3.00, by the same author is a more elementary but thorough text without the service features.

MOTOR

Motor's Auto repair manual. Eighth edition. Harold F. Blanchard and others, editors. New York: Motor, the Automotive Business Magazine, 1944. 764 p. illus. 28 cm. \$5.00. 4033

Contents: Tune-up. Carburetors. Carter. Carter B & B. Holley. Detroit. Marvel. Marvel-Schebler. Stromberg. Stromberg and Tillotson. Automatic chokes. Fuel pumps. Gasoline gauges. Air cleaners. Oil filters. Ignition systems. Generators. Generator regulators. Starting motors. Starter switches. Headlamps. Clutches. Brakes. Vacuum power brakes. Universals. Rear axles. Steering gears. Wheel alignment. Shock absorbers. Air conditioning. American Bantam. Auburn. Austin. Buick. Cadillac. Chevrolet. Chrysler. Cord. Crosley. De Soto. Dodge. Ford. Graham. Hudson. Hupmobile. La Fayette. La Salle. Lincoln. Mercury. Nash. Oldsmobile. Packard. Pierce Arrow. Plymouth. Pontiac. Reo. Studebaker. Terraplane. Willys. Decimal equivalents. Tap drill sizes.

Note: A reference book for auto mechanics and service men, giving specific instructions on the removal, replacement, fitting, and adjustment of all mechanical parts on all cars built in the United States from 1935 to 1944. Some of the subjects treated under each make of automobile are as follows: clutch, cooling system, electric system, engine, engine oiling, front suspension, gearshift, fuel system, rear axle, shock absorbers, specifications, springs, steering gear, transmission, valve measurements and compression pressure, piston and ring clearances, engine bearing data, lubrication and capacity chart, brake horsepower and r.p.m., all of which are given for each year and model. There are more than 1,000 drawings and photographs.

MOTOR

Motor's Truck repair manual. Editorial staff: Harold F. Blanchard, editor; Ralph A. Ritchen, managing editor; Edward H. Barry, consulting editor [and others]. New York: Motor, the Automotive Business Magazine, 1943. 914 p. illus. 28 cm. \$8.00. 4034

Contents: Gasoline engines, 51 makes. Diesel engines, six types. Hesselman engines, 1 type. Diesel fuel injection systems, 5 types. Fuel systems. Governors. Lubrication system. Cooling systems. Ignition systems. Starters, generators, clutches, transmissions, front and rear driving axles, torque dividers, transfer cases, universals, brakes. Wheel alignment. Steering gears. Shock absorbers. Windshield wipers.

Note: This manual provides instructions for the repair, overhaul, servicing and maintenance of 51 different makes of trucks, both gasoline and Diesel, which were manufactured from 1936 to 1942. Each repair job is clearly explained in a step-by-step method, and the text is supplemented by numerous photographs and diagrams. The compilation is based on designs, tests, service records, and specifications issued by the individual manufacturers. There is a brief subject index followed by a more detailed one which lists the trucks alphabetically and indicates the pages on which material may be found dealing with engines, clutches, transmissions, driving axles, and brakes, of each particular make.

UNITED STATES. WAR DEPARTMENT

The machinist, prepared under the direction of The Quartermaster General. Technical manual no. 10-445. War Department, Washington, November 12, 1941. Washington: United States Government Printing Office, 1941. 184 p. illus. 23 cm. \$0.25. 4035

Contents (abridged): General: Laying out work. Precision measurements. Glossary. Drill press. Screw-cutting engine lathe. Milling machine. Shaper. Grinders and grinding. Power hacksaws. Appendixes: Tables. Bibliography.

Note: This manual explains the use of the power-driven machine tools with which every machinist must be familiar in order to perform efficiently the machine shop work commonly required for automotive repairs. Not indexed, but topics listed in the table of contents are well subdivided.

AMERICAN SOCIETY FOR TESTING MATERIALS

Symposium on the significance of tests of coal. Philadelphia: The American Society for Testing Materials, 1937. 125 p. illus. 22 cm. (Reprint from *Proceedings of the American Society for Testing Materials*, Philadelphia, Pa., Vol. 37, part II, 1937) Paper, \$1.00. 4036

Contents: Interpretation of laboratory coal tests—proximate analysis and calorific value, by G. B. Gould. The significance to the consumer of sulfur in coal, by Henry Kreisinger. The significance of ash softening temperature and ash composition in the utilization of coal, by A. W. Gauger. Laboratory tests relating to coking, plastic, gas- and coke-making properties of bituminous coals, by O. O. Malleis. Significance of friability and size stability tests on coal, by R. E. Gilmore and J. H. Nicolls. Pulverizer performance as affected by grindability of coal and other factors, by Martin Frisch and A. C. Foster.

Note: These technical papers are illustrated with charts and tables and each is followed by critical discussions.

BREWER, RALPH EMMET

Plastic and swelling properties of bituminous coking coals. Washington, D.C.: Government Printing Office, 1942. 260 p. illus. 23 cm. (United States. Bureau of Mines. Bulletin 445) Paper, \$0.30. 4036a

Contents: Introduction. Definition of terms. Rheological properties of bituminous coals. Evaluation of coking properties of bituminous coals. Classification of test methods. Plasticity and swelling of coal during combustion. Plasticity and coal selection. Comparison of results of tests of plastic properties determined by different methods. Comparison of expansion-pressure test methods and results. Chemistry of coking. Plasticity and decomposition of coal. Mechanism of coking. Modification of coking properties of coal by special treatments. Summary. Conclusions and recommendations. Bibliography. Index.

Note: A critical review of the numerous test methods which have been devised for measuring the plastic and swelling properties of bituminous coking coals and a practical evaluation of the data obtained. The paper correlates and rationalizes certain terms that have been used more or less widely to define phenomena of these and similar characteristics, and attempts to classify the different test methods according to the general test principle employed. A summary of nearly all of the published descriptions or apparatus and procedure is included. The comprehensive bibliography lists 324 reports of investigations published in the United States and abroad covering this field of study.

CARR, ARTHUR RAYMOND, AND C. W. SELHEIMER

Fuels and their utilization. New York: Pitman Publishing Corporation, 1940. 180 p. illus. 23 cm. \$2.00. 4037

Contents: Introduction. Combustion. Classification of fuels. Manufactured fuels. Combustion of coal and other solid fuels. Waste heat and its elimination—storing of coal. Calorimetry determination of heat input. Heat balances. Pyrometry or temperature measurements. Water for industrial purposes. Laboratory experiments. Index.

Note: A short text for engineering students and heating engineers, mainly on the testing, classification and combustion of fuels. Problems are given for each chapter. Seventeen laboratory experiments are outlined, with application mainly for industrial furnaces.

FIELDNER, ARNO CARL, AND OTHERS

Bibliography of United States Bureau of Mines investigations on coal and its products, 1910-35, by A. C. Fieldner, Alden H. Emery,

and M. W. Von Bernewitz. Washington, D.C.: Government Printing Office, 1937. 145 p. 23 cm. (United States. Bureau of Mines. Technical paper no. 576) Paper, \$0.15. 4038

Contents: General. Methods of sampling, analyzing, and testing. Origin, microstructure, classification, proximate and ultimate analyses, calorific values, and fusing temperatures of ash. Physical and chemical properties of coal. Gases and dust. Mining. Mine water and corrosion. Preparation. Storage, spontaneous heating, and oxidation of coal. Carbonization. Complete gasification. Hydrogenation. Coke. Gas. Tar, light oils, and other by-products. Combustion. Smoke abatement. Economics and statics. Index of subjects. Index of authors.

Note: This bibliography, containing 1,895 entries, is a revision and expansion of the Bureau's Technical paper 493, 1931, now out of print, and covers 25 years of laboratory and field studies by the Bureau of Mines in the mining, technology, and economics of coal and its products. The entries are arranged by subject and are further separated into bulletins, technical papers, reports, and periodicals, with listings in order of author within each group.

FIELDNER, ARNO CARL

Bibliography of Bureau of Mines investigations of coal and its products, 1935 to 1940. Washington, D.C.: Government Printing Office, 1942. 43 p. 23 cm. (United States. Bureau of Mines. Technical paper 639) Paper, \$0.10. 4039

Note: A list of 406 publications which appeared from 1935 to January 1, 1940, of Bureau of Mines investigations of coal and its products. Publications are arranged by subject and alphabetically by authors within each subject. There is a brief introductory survey of the literature on coal and its products since 1910, and separate author and subject indexes. The present paper is a continuation of Fieldner and others' *Bibliography of United States Bureau of Mines investigations on coal and its products, 1910-1935*, described above.

FIELDNER, ARNO CARL, AND OTHERS

Bureau of Mines research on the hydrogenation and liquefaction of coal and lignite, by Arno C. Fieldner, Henry H. Storch, and Lester L. Hirst. Washington, D.C.: Government Printing Office, 1944. 69 p. illus. 23 cm. (United States. Bureau of Mines. Technical paper 666) Paper, \$0.15. 4040

Contents: Early Bureau work on synthetic alcohols and hydrocarbons from coal. Early Bureau of Mines research on production of synthetic methanol and hydrocarbons from coal. Direct hydrogenation of coal. Billingham process for the hydrogenation of coal. Objectives of recent Bureau of Mines research. Batch hydrogenation in small, rotating autoclaves. Continuous hydrogenation in a 3-inch converter experimental unit. Summary and conclusions. Bibliography.

Note: A brief review of research work carried on by the United States Bureau of Mines on the direct hydrogenation and liquefaction of American coals. Results of experiments are summarized in tabular form. Most of the experiments were confined to the primary or liquid-phase stage of hydrogenation, the liquefaction of coal being conducted so as to produce a crude oil only. Twenty-eight references to the world literature are listed in the bibliography.

FIELDNER, ARNO CARL, AND OTHERS

Typical analyses of coals of the United States, by A. C. Fieldner, W. E. Rice, and H. E. Moran. Washington, D.C.: Government Printing Office, 1942. 45 p. 23 cm. (United States. Bureau of Mines. Bulletin 446) Paper, \$0.10. 4041

Contents: Introduction. Source of analyses. Correlation and nomenclature of coal beds. Determination of ranges of analyses. Selection of specimen analyses. Classification of coal by rank. Abbreviations used in table of analyses. Specimen analyses and ranges of analyses of coals produced in the United States.

Note: A summary in tabular form of the composition of coals obtained from commercial coal sources throughout the United States, grouped by state and including specimen analyses of coal mined in each coal-producing county. Intended as a guide to the available coal of the country and as an aid to large-scale users of coal.

GILL, AUGUSTUS HERMAN

Power plant chemistry, formerly published under the title of Engine room chemistry. Fourth edition revised and enlarged. New York: McGraw-Hill Book Company, Inc., 1935. 228 p. illus. 21 cm. \$2.50. 4042

Contents: Preface to the fourth edition. Preface to the first edition. Introductory. Apparatus and chemicals—chemical tests. Fuels and their analysis. The regulation of combustion—gas analysis. Boiler scale—pitting and corrosion. Mineral oils. Animal and vegetable oils, greases. Appendix. Tables. Index.

Note: Treats the fundamentals of engine room chemistry in a simple, practical manner for the power plant fireman and operator. Numerous tables on the properties and characteristics of fuel and lubricating oils are given throughout the text and in the appendix. The fourth edition contains additional information on methods of storage and sampling of coal, as well as additional tests and specifications for lubricating oils and liquid fuels.

LANDRY, BERTRAND ANDRÉ

Fundamentals of coal sampling. Washington, D.C.: Government Printing Office, 1944. 127 p. illus. 23 cm. (United States. Bureau of Mines. Bulletin 454) Paper, \$0.20. 4043

Contents: Part I, General coal-sampling theory and application: Variability of ash content of coal. Theory of random sampling. Sampling characteristics of a coal whose pieces are of equal weight. Sampling characteristics of a multiple-size coal. Relation of variability of ash of coal pieces to their weight and to their ash content. Theory of orderly sampling. Coal-sampling specifications. Part II, Appendixes.

Note: An introductory treatise on the use of mathematical probability in coal sampling. The first part summarizes the theoretical findings and presents the data that have been useful in applying the theory to the presentation of examples of specification charts. Part II comprises a series of appendixes giving the details of the mathematical derivations and other related material.

MOORE, ELWOOD S.

Coal, its properties, analysis, classification, geology, extraction, uses and distribution. Second edition. New York: John Wiley & Sons, Inc., 1940. 473 p. illus. 23 cm. \$6.00. 4044

Contents: The physical properties of coal. The chemical properties of coal. Chemical analysis of coal. Varieties and ranks of coal. The classification of coals. The origin of coal. Fossil flora of the coal-forming periods. Structural features of coal seams. Prospecting for coal and the valuation of coal lands. Mining of coal. The uses and preparation of coal. The geologic and geographic distribution of coal. The coal fields of the world—America. The coal fields of the world—Europe and Asia. The coal fields of the world—Africa and Oceania. Index.

Note: The story of the origins of coal, its physical and chemical properties, its development as a great industry, the methods used to mine it from the earth, and finally, the interesting manner of its distribution. The book includes those phases of the subject which will be of interest to the chemist, the geologist, the physicist, the engineer, and others engaged in the coal-mining industry. Many chapters have been practically rewritten. The classifications of coal offered in this book include those of the United States Bureau of Mines and the National Bureau of Standards. New theories on the origin of coal are presented. Recent developments on the uses and the mining of coal are given, as well as later data on its preparation. Wherever possible, new data have been incorporated on the coal resources of the world. Simple, down-to-earth language and a collection of illustrations, charts, and tables combine to make it understandable not only to those with scientific training but to the many who are interested in the subject on its own account.

PACIFIC COAST GAS ASSOCIATION. GAS ENGINEERS' HANDBOOK COMMITTEE

Gas engineers' handbook. Prepared by Gas Engineers' Handbook Committee of the Pacific Coast Gas Association, San Francisco, California; Frank Wills, chairman. Reviewed by a special committee of the American Gas Association, J. V. Postles, chairman, endorsed by the directors of the American Gas Association. New York: McGraw-Hill Book Company, Inc., 1934. 1017 p. illus. 23 cm. \$7.50. 4044a

Contents: Mathematical and conversion tables and graphs. Properties of elements, common substances, and engineering materials. Properties of gases, air, steam, and water. Fuels and combustion. Production of gas. Testing and measurement. Transmission and distribution. Utilization of gas.

Note: A comprehensive, authoritative manual giving the gas engineer a reference tool comparable to the standard handbooks in other fields of engineering. Brings together a great many of the constants and formulas which the gas engineer uses most frequently in his work. Covers every phase of the field, including production and utilization, both industrial and domestic. Uses latest figures from recognized sources for the various constants. Includes new material on long transmission lines, design of distribution systems, production and utilization of natural gas, and production and use of the so-called "liquid" gases. References to literature are included.

SEGELER, CURT GEORGE, EDITOR

Fuel flue gases; the application and interpretation of gas analyses and tests. New York: American Gas Association, 1940. 198 p. illus. 28 cm. \$3.50. 4045

Contents: Introduction. Complete fuel gas analysis. Physical tests. Application of gas analysis. Inert gas safety. Specific constituents of fuel gases. Deposits in distribution systems. Atmospheres other than those from combustion. Furnace atmospheres. Index.

Note: Essentially this is a reference book for engineers and salesmen who are concerned with flue gases and fuel burning equipment but who are not trained chemists. It seeks to synthesize and interpret for these groups the findings of chemists. Much practical information, not necessarily related to chemistry, is also included. There are frequent footnote references to the literature.

ŚWIETOSŁAWSKI, WOJCIECH

Coke formation process and physico-chemical properties of coals. With a preface by H. L. Olin. New York: Polish Institute of Arts and Sciences in America, 1942. 145 p. illus. 24 cm. (Polish Institute series no. 1) \$3.50. 4046

Contents: Coals as inhomogeneous systems. Adsorption and sorption phenomena in coals. Development of the surface by activation processes. Ignition temperature of solid fuels. Plasticity of bituminous coals. Plasticity phenomena and binding capacity of coals. Agglutination capacity of coals. Swelling phenomena in coking coals. Binary mixture method. Permeability of the plastic zone. Heat of carbonization of coals. Total amount of gases and vapors developed during carbonization. Physico-chemical analyses of the coke formation process. Coke formation process in mixtures of non-coking coals and pitch. Optimal conditions for the coke formation process. References. Index of authors and subjects.

Note: This monograph is the outcome of investigations conducted over a period of years by the fellows of the coal division of the Chemical Research Institute, Warsaw, Poland. The researches dealt with an examination of physico-chemical properties of coals and with explanation of physico-chemical phenomena which take place in the coke oven.

TURNER, C. C.

The bottled gas manual. Los Angeles, Calif.: Western Business Papers, Inc., 1944. 356 p. illus. 23 cm. \$4.00. 4046a

Contents: What is propane? The behavior of gases. Heat and temperature. What goes on within a propane cylinder. The simple regulator. Regulator manifolds. Regulations—equipment selection and installation. LP-gas pipe lines. Testing for leaks and adjusting burners. Fundamentals of thermostats. Pilots and pilot controls. Burner design and application. Appliance conversions. Facts about water and water heaters. Types of water heaters. Selecting and installing the water heater. Competitive fuels—wood. Competitive fuels—coal. Competitive fuels—oil. Competitive fuels—electricity—rates and refrigeration. Competitive fuels—electricity—cooking and water heating. Gas lighting. Space heating. Conclusion. Index.

Note: A detailed field guide for service men, salesmen, and engineers, giving accurate information and data on approved methods and processes of selling, installing and servicing liquefied petroleum gas equipment and appliances. Deals particularly with the propane branch of the industry but is largely applicable to the butane branch also.

UNITED STATES. BUREAU OF MINES

Analyses of Pennsylvania anthracitic coals. Washington, D.C.: Government Printing Office, 1944. 271 p. 23 cm. (United States. Bureau of Mines. Technical paper 659) Paper, \$0.40. 4047

Contents: Preface, by A. C. Fieldner. The anthracite fields of Pennsylvania, by George H. Ashley. Methods of mining and preparation of coal, by Albert L. Toenges and G. E. McElroy. Production, distribution, and use, by M. van Sichen and J. W. Buch. Relation of mine samples to commercial shipments, by N. H. Snyder. Analyses of mine, breaker, and delivered samples, by H. M. Cooper and others. Description of mine samples, by H. M. Cooper and others. Description of breaker and delivered samples, by N. H. Snyder and R. J. Swingle. Index.

Note: One of a series of papers analyzing the coal from every coal-mining state and from Alaska, published for the use of government officials and the public. In addition to showing the composition and quality of the coals of each state, these publications include the principal facts regarding the geologic structure of the coal basins, the typical mining conditions, and other important economic data on the industry. The work is almost wholly in tabular form. Twenty-six technical papers have been published up to 1944 by the Bureau of Mines and are revised from time to time to include later analyses and other data.

UNITED STATES. BUREAU OF MINES

Analyses of Pennsylvania bituminous coals. Washington, D.C.: Government Printing Office, 1939. 503 p. illus. 23 cm. (United States. Bureau of Mines. Technical paper no. 590) Paper, \$0.50. 4048

Contents: Preface, by John W. Finch. The coal fields of Pennsylvania, by George H. Ashley. Methods of mining and preparation of coal, by Albert L. Toenges and Robert L. Anderson. Production, distribution, and use, by W. E. Rice and C. M. Stull. Relation of mine samples to commercial shipments, by N. H. Snyder. Analyses of coal as shipped or delivered, by N. H. Snyder and R. J. Swingle. Analyses of mine samples, by H. M. Cooper and R. F. Abernethy. Description of mine samples, by H. M. Cooper and R. F. Abernethy.

Note: This paper discusses geologic structure of coal basins and typical mining conditions in different districts. It presents analytical data showing the composition and quality of coals, principal economic data of the industry, and salient facts regarding the occurrence, reserves, quality, characteristics, production, and uses of bituminous coals of the state.

Oil Burners

KUNITZ, HANS A.

Oil heating handbook. A manual of theoretical and practical considerations entering into the manufacture, installation and use of oil burners in moderate size heaters including a complete oil heating terminology, tables—diagrams—data. Second edition, revised and en-

larged. Philadelphia: J. B. Lippincott Company, 1937. 464 p. illus. 19 cm. \$3.50. 4049

Contents (abridged): Part I, Oil burner system and classification. Part II, Combustion: Petroleum fuel. Flame and ignition. Combustion and efficiency. Heating and radiation. Testing oil. Technical aspect of oil burner flame. Combustion technique. Heat and heating. Part III, Heating and heating systems: Heating principles and calculations. Heating systems. Warm air heating. Controls. Part IV, Survey and installations: Survey and installation. Service. Sound and noise. Part V, Retail selling. Part VI, Forms, tables, and terminology. Index.

Note: A comprehensive manual for the installation and maintenance of all types of oil-burning heaters. The second edition differs from the earlier chiefly in the lengthening of the chapter on "Service." There are tables and illustrations throughout the book.

MOYER, JAMES AMBROSE

Oil fuels and burners, with special reference to automatic domestic types. New York: McGraw-Hill Book Company, Inc., 1937. 375 p. illus. 23 cm. \$4.00. 4050

Contents: Oil fuels. Combustion of oil fuels. Atomization of oil fuels. Oil burners. Automatic-control devices. Oil-fuel tests. Heat measurements. Calculation of heating systems. Calculation of heating requirements. Estimating savings from heat insulations of walls and roofs. Fans and blowers. Draft and chimneys. Air-conditioning tests. Index.

Note: An informal manual for service men, salesmen, mechanics, electricians, and engineers, which takes into consideration the recent large development in oil burners, especially of the automatic type intended for the heating of residences and apartment houses. Includes many practical charts and diagrams for layout of oil-burner systems, automatic control devices, trouble charts of motors and generators, calculation of heating requirements, and heat insulation of walls, roofs, and floors, in old as well as newly constructed buildings.

STEINER, KALMAN, AND FRED RAVNSBECK

Oil burner service manual. New York: McGraw-Hill Book Company, Inc., 1942. 365 p. illus. 23 cm. \$4.00. 4051

Contents: Introduction, by C. H. Chalmers. Domestic pressure-atomizing burners. Domestic vertical cup burners. Rotary wall-flame burners. Low-pressure atomizing domestic burners. Miscellaneous domestic burners. Horizontal-rotary oil burners. Miscellaneous industrial oil burners. Refractories. Tanks and piping. Relays and circuits. Automatic control instruments. Boilers and warm-air furnaces. Load and burner capacity. Draft and control, efficiency and testing. Preheating. Service. Index.

Note: A comprehensive manual of established practice in the installation, operation, and servicing of domestic, commercial, and industrial oil burners. Shows the constructional and operational fundamentals needed to understand all types and makes of burners, and shows dealers and their mechanical staffs how to select the proper size and style of burner for any specific application, how to install it, and how to operate it and correct its troubles to maintain most efficient performance.

STEINER, KALMAN

Oil burners. New York: McGraw-Hill Book Company, Inc., 1937. 436 p. illus. 23 cm. \$4.50. 4052

Contents: Hydrocarbons and petroleum. Fuel oil. Combustion of fuel oil. Comparative fuel data. Problems of oil-burner design. Domestic oil burners. Commercial oil burners. Industrial oil burners. Fans and electric motors. Electric controls. Ignition methods. Fuel-oil pumps and pumping. Oil piping, strainers and flow regulators. Combustion chambers for heating plants. Industrial boiler-plant installations. Preheating fuel oil. Oil storage tanks and gauges. Service and maintenance of domestic and commercial oil burners. Shell-type vaporizing burner. Control of the heating system.

Note: A comprehensive treatise on oil-burner practice, embracing discussion of fundamental and advanced engineering and practical methods of oil burner design, construction, installation, operation, and maintenance. Covers the characteristics, specifications, combustion, and handling of fuel oils, and considers domestic, commercial, and industrial applications.

WHELAN, LEO JOSEPH ROBERT

An oil burner handbook, the A-B-C of oil burners. Second edition. Brooklyn, N.Y.: The Master Plumber & Heating Contractor Magazine, 1942. 245 p. illus. 19 cm. \$2.50. 4053

Contents: Introduction. Part I, Domestic oil burners: Fuel oil. Combustion. Boilers. Oil burners. Storage tanks. Installation. Tools. Electricity. Controls. Survey. Servicing. Definitions. Rules and regulations. Part II, Industrial oil burners: Fuel oil. Burners. Preheaters. Storage tanks and piping. Boilers. Controls. Certificate of fitness. Part III, Care of the oil burner: How to start the burner. Regular care. Other problems.

Note: The second edition of this simplified handbook covers industrial burners in addition to the domestic burners treated in the first edition. The work contains instructions and explanations in condensed form on the care of the burner for the average superintendent or home owner. It is intended also for servicemen and installers.

Heating, Ventilating and Air Conditioning

ALBRIGHT, JOSEPH CLARENCE

Summer weather data, with design data, statistics, charts, maps, and technical analysis. Compiled and edited by J. C. Albright. Kansas City, Kan.: The Marley Company, 1939. 165 p. illus. 28 cm. \$3.00. 4053a

Contents: Preface. The atmosphere and climate. The United States Weather Bureau. Factors influencing summer weather. Analysis of summer weather data. Application of data in design. Dry-bulb temperatures. Wet-bulb temperatures. Dew point temperatures. Wind data. Sunshine data. Glossary of terms. Atmospheric water cooling equipment.

Note: Summer weather data assembled in convenient form for the use of the air-conditioning and water-cooling equipment industries. The data included are based upon the program of necessary factors adopted by the American Society of Heating and Ventilating Engineers' Technical Advisory Committee on Weather Design Conditions. The book furnishes to designers of heat exchange systems sufficient data on weather factors to permit the selection of the most economical combination of equipment for a service and to estimate the annual cost of operation of a system. The publishers are manufacturers of water-cooling equipment.

ALDEN, JOHN LESLIE

Design of industrial exhaust systems. New York: The Industrial Press, 1939. 220 p. illus. 22 cm. \$3.00 plus foreign postage. 4054

Contents: Flow of fluids. Hood forms. Air flow through hoods. Pipe resistance. Piping design. Dust separators. Low pressure conveyors. Centrifugal exhaust fans. Structural details. Field measurements and their interpretation.

Note: This book shows how to design, build or buy an exhaust system that will remove dust, shavings, fumes, etc., so as to meet the requirements of industrial hygiene. Exhaust ventilation, low-pressure pneumatic conveying, the design of hoods, piping and structural details are discussed. The descriptive matter is accompanied by 110 drawings and diagrams showing the details of exhaust system design.

ALLEN, JOHN ROBINS, AND JAMES HERBERT WALKER

Heating and air conditioning. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1939. 593 p. illus. 23 cm. \$4.50. 4055

Contents: Heat and the properties of steam and air. Heat losses from buildings. Methods of heating. Gravity warm-air furnace heating. Radiators, convectors and unit heaters. Fuels and boilers. Steam heating systems. Pipe, fittings, valves and accessories. Steam piping. Hot-water heating systems. Automatic control. Central and district heating—electric heating. Air

and its properties. Principles of air conditioning. Ventilating and air-conditioning systems. Fans, filters, washers, and coils. The transmission and distribution of air. Cooling and dehumidifying apparatus. The cooling and dehumidifying load. The design of an air-conditioning system. Residence air-conditioning. Unit air-conditioners. Industrial air conditioning.

Note: A textbook on heating and air-conditioning systems for residences, factories, office buildings, theaters, churches, auditoriums, etc. It discusses the theory underlying heating and air-conditioning engineering, covers the developments of working methods of design, and includes detailed charts and tables. There is a chapter devoted to the complete step-by-step calculations and design of an air-conditioning system.

AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS

Heating, ventilating and air conditioning guide. Vol. 22. New York: American Society of Heating and Ventilating Engineers, 1944. 1272 p. illus. 23 cm. \$5.00. 4056

Contents (abridged): Principles. Heating and cooling load calculations. Combustion and consumption of fuels. Steam and hot water heating. Air heating, cooling and conditioning. Automatic controls, instrument and motors. Special applications and miscellaneous. Catalog data section. Index to advertisers. Index to modern equipment. Roll of membership.

Note: A reference book of useful data compiled for the heating and ventilating engineer on the design and specification of heating, ventilating, and air conditioning systems. Two thirds of this book is devoted to reference information, while the remainder consists primarily of manufacturers' catalogs. This edition has a new section on marine heating and ventilating and many minor revisions.

BAUMEISTER, THEODORE

Fans. New York: McGraw-Hill Book Company, Inc., 1935. 241 p. illus. 23 cm. \$3.50. 4057

Contents: Table of symbols. Commercial types of fans. Terms and laws. Selection. Theory and design. Fluid flow. Fan testing. Propeller fans. Index.

Note: A practical book on the characteristics, performance, and uses of various types of commercial fans, such as steel plate, forward curve, backward curve, reverse-curve and radial-tip, pressure blowers, turboblowers and compressors, conveying fans, and propeller and disk fans.

BRETT, THOMAS J.

Air conditioning—design and construction of ducts. A practical text on the requirements, design, construction, installation and operation of air ducts for distribution of air for air-conditioning systems installed in various types of buildings and railway cars. Chicago: American Technical Society, 1936. 226 p. illus. 21 cm. \$2.50. 4058

Contents: Duct requirements. Calculations for duct design and construction. Inlet and exit openings. Air recirculation. Installation. Material and construction. Insulation and operation. Air distribution. Formulas. Ducts for residences, apartments, office and factory buildings, restaurants, theaters, railway cars, etc. Friction chart. Index.

Note: A practical work dealing with the design, construction, maintenance, operation and installation of air-conditioning systems written for builders, architects, teachers, and students. Questions and answers are given.

CARRIER, WILLIS HAVILAND, EDITOR

Fan engineering; an engineer's handbook on air, its movement and distribution in air conditioning, combustion, conveying and other applications employing fans, edited by Richard D. Madison. Fourth edition, rewritten and reset. Buffalo, N.Y.: Buffalo Forge Company, 1938. 739 p. illus. 17 cm. \$4.00. 4058a

Contents (abridged): Part I, Physics of air: Properties of air. Humidity. Heat. Fluid flow. Proportioning the flow in pipes. Air flow in the fan. Sound. Part II, Air conditioning and other fan applications: Heating. Ventilation. Humidifying and dehumidifying. Cooling and refrigeration. Drying. Combustion and mechanical draft. Dust elimination. Exhausting and conveying. Codes, specifications and guarantees. Part III, Fans and air conditioning apparatus: Selection of air conditioning equipment. Fan power equipment. Fan details. Multiple ventilating fans. Miscellaneous fans. Heaters. Coolers. Air conditioners. Evaporative condensers. Air washers. Appendix: Miscellaneous engineering data.

Note: The purpose of this book is to discuss various applications of industrial fans and to indicate to the reader further usage of fans in all types of work. As a knowledge of air is a necessary preface to study of the fan, the author treats at length the properties and flow of air in the fan and in the fan system. Changes in this fourth edition consist of a more complete treatment of air conditioning, storage plants, and process cooling, and revised and enlarged tables and index.

CARRIER, WILLIS HAVILAND, AND OTHERS

Modern air conditioning, heating and ventilating, by Willis H. Carrier, Realto E. Cherne, and Walter A. Grant. New York: Pitman Publishing Corporation, 1940. 547 p. illus. 23 cm. \$4.50. 4059

Contents: Introduction. Psychrometrics and comfort. Estimating requirements. Economics. Heat producing equipment. Heat distributing equipment. Steam heating systems. Hot water heating systems. Automatic controls and zoning for heating. Fans, heaters, and ventilators. Air cleaning devices and humidifiers. Design of air duct systems. Cooling and dehumidification. Central and unit systems. Refrigeration for air conditioning. Air distribution and zoning. Automatic controls for air conditioning. Noise and vibration. Application practice. Residential heating and air conditioning systems. Appendix. Index.

Note: This text was written to aid in problems met by application engineers in the overlapping fields of heating, ventilating, and air conditioning. It is designed to apply existing theory to actual practice in the industry, and is intended to supplement texts on the physics and thermodynamics of air conditioning. A great deal of engineering and rating data is supplied. Included in the appendix are tables giving psychrometric properties of air, heat transmission coefficients, and tables showing solar heat gain through glass.

DALZELL, JAMES RALPH

Air conditioning furnaces and unit heaters; a text and reference book relative to the application of gravity and mechanical furnaces, air conditioning for winter and summer, and the application of unit heaters to commercial and domestic heating. Chicago: American Technical Society, 1938. 430 p. illus. 21 cm. \$3.00. 4060

Contents: Principles of ventilation. Transmission coefficients and tables. Heating and cooling loads. Insulation. Gravity furnaces. Mechanical warm air furnaces. Air-conditioning furnaces. Registers and grills. Electric heating. Humidification. Unit heaters. Automatic controls. Typical examples of calculating heat and cooling requirements. Appendix. Psychrometric chart. Index.

Note: Presents basic principles and tells in detail how to calculate and provide for heating, cooling, humidifying, dehumidifying, and air-cleaning. Typical house plans are included and numerous problems are given with solutions. An example is worked out in great detail for a twenty-year-old house in which a worn-out gravity system is to be replaced by an up-to-date air conditioned system of the forced type. There are numerous tables and illustrations, also a psychrometric chart. The author assumes for the reader some acquaintance with algebra, and a knowledge of blueprint reading, sheet metal work, and architectural detailing.

DALZELL, JAMES RALPH, AND CHARLES L. HUBBARD

Air conditioning, heating and ventilating. A practical treatise on the principles and general

application of steam, hot water, vapor, vacuum, and forced air for heating; split systems for heating and ventilating; air conditioning for all types of buildings. Chicago: American Technical Society, 1938. 571 p. illus. 21 cm. \$4.00.

4061

Contents: Fundamentals of air conditioning. Insulation. Boilers. Ventilating systems. Radiators. Direct steam and hot water heating. Forced hot water circulation. Automatic controls. Vacuum systems. Fans. Firing equipment. Conditioning appliances. Cooling methods and loads. Conditioning units, including application. Design of ducts. Typical examples. Appendix. Psychrometric chart. Index.

Note: This practical work presents methods for the design and installation of various systems. Principles and calculations have been simplified and the mathematics are limited to arithmetic and elementary algebra. The text contains detailed descriptions of representative jobs and there are numerous practice problems for which charts and tabular data are provided.

FAVALORA, EMILE WILLIAM

Lessons taught by mistakes in blow pipe work. One hundred and seven problems in design and installation of blower systems, with notes on how they were solved. New York: Sheet Metal Publication Co., 1941. 381 p. illus. 20 cm. \$3.00. 4062

Contents: Five common mistakes and how to avoid them. Velocities, volumes and branches. Layout of blower systems. Design of suction mains. Traps. Fans and blowers. Design of discharge pipes. Separators and dust arresters. Design of tail pipes. Furnace feeding pipes and refuse boxes. Design of hoods.

Note: The author's intention in this handbook for air-conditioning contractors and engineers is to dissuade those of limited experience from "thinking up" solutions to blower problems by the use of personal judgment unsupported by practical experience. He points out that, contrary to popular belief, the addition of extra pipe lines to a blower system will appreciably affect the arrangement and operation of the total system. Examples of mistakes made by contractors are given, with directions on obtaining the proper number and sizes of machines, sufficient air volume for hoods, and other design details.

FAVALORA, EMILE WILLIAM

Practical design of exhaust and blower systems; a handbook on the designing and engineering of blower systems in which the subject is treated in a way that the man of limited education can comprehend and understand both its meaning and application. New York: Edwin A. Scott Publishing Company, Inc., 1935. 274 p. illus. 20 cm. \$3.00. 4063

Contents: Air. Velocity. Volume. Velocity pressure. Static and total pressures. Instruments used in testing systems. Friction loss in pipes. Loss in elbows. Orifice losses. Losses in branches or tees. Path of least resistance. Velocity required to move materials. Fans and blowers. Blower characteristics. Dust separators. Automatic dampers. Design of hoods. Removing dust from machines. Sizes of pipes for various types of machines. Designing main and discharge pipes. Calculating pressure and volume. Speed and power of blower. Automatic furnace feeders. Switches, valves, and breechings. Dust separator frames. Discharge pipe arrangements. Direct and indirect designs. Useful information. Index.

Note: This volume is intended for the practical man, the local sheet metal contractor, and the prospective purchaser as a guide to the design and construction of exhaust and blower systems which can be undertaken with the limited facilities of the small sheet-metal shop without requiring the assistance of the large-scale contractor. In addition the work is intended to point out to the factory owner the advantages and the necessity of installing blower systems from the viewpoint of the employee's health and general safety. The physical theory is not oversimplified and there are many useful tables and charts of related data.

GOODMAN, WILLIAM

Air conditioning analysis with psychrometric charts & tables. New York: The Macmillan Company, 1943. 455 p. illus. 24 cm. \$6.00. 4064

Contents: Fundamentals. Enthalpy of air-vapor mixtures. Moisture and heat balances. The psychrometric chart. Moisture ratio and ratio lines. Adiabatic mixtures of air with water, steam or ice. Humid air below 32 F. Fogged air. Air mixtures. Specific volume of humid air. Required state and volume of conditioned air supply. By-passed air. Steep ratio lines. Capacity of refrigerating plant. Methods of reheating air. Air in contact with water. Temperature of adiabatic saturation. The water-air chart. Fundamental simultaneous conditioning processes. Fundamental successive conditioning processes. Geometry of the psychrometric chart. Psychrometric tables. References. Index.

Note: A thoroughgoing discussion of the science of changing the condition of air. Sets of psychrometric tables and charts and the water-air chart are included. The time-saving and effective solution of air conditioning problems by graphical methods is stressed and illustrated. Air conditioning apparatus is not discussed.

GREENE, ARTHUR MAURICE, JR.

Principles of heating, ventilating and air conditioning. New York: John Wiley & Sons, Inc., 1936. 446 p. illus. 23 cm. \$4.50. 4065

Contents: Methods of application. Properties and conditioning of air. Loss and gain of heat through walls. Radiators, valves, and heat transmission from radiators. Method of calculating heat required for rooms. Direct steam heating. Hot water heating. Indirect steam heating—air flow—gravity systems. Indirect steam heating—plenum system—air conditioning. Unit heaters. Warm air furnace heating. Furnaces, boilers, heaters. Automatic controls. District heating. Appendix. Answers to problems. Index.

Note: A textbook for students of engineering, practicing engineers, architects, and owners of buildings, covering the development of the principles as well as the practical applications of the theory of thermodynamics to industrial and commercial purposes. A description of the details of building construction is included for beginning engineers who may be unfamiliar with the subject. The work is useful as a handbook of heating data but is written primarily for a college course for students who have completed the study of elementary thermodynamics. Problems are included in each chapter.

HARDING, LOUIS ALLEN, AND ARTHUR CUTTS WILLARD

Heating, ventilating and air conditioning; a reference book for engineers, architects and contractors. Second edition. New York: John Wiley & Sons, Inc., 1932. 963 p. illus. 23 cm. \$10.00. 4066

Contents: Physical units and the measurement of heat. Water, steam and air. Fuels and combustion. Steam heating boilers and hot-water heaters. Draft and chimneys for heating boilers. Heat transmission of buildings and insulating materials. Estimating seasonal heating requirements for various types of buildings. Heat transmission and dimensions of direct radiators. Direct steam heating. Exhaust steam heating. Direct hot-water heating. Heating water in tanks and pools. Electrical heating. Ventilation, air analysis and ventilation laws. Gravity-indirect heating by steam and hot water. Warm-air furnace heating. Hot-blast heating. Air conditioning, air washing, humidifying, cooling and drying. Automatic temperature and humidity control. Central station or district heating. Pipe, fittings, valves, and accessories. Preparation of plans, specifications and estimates. Index.

Note: Contains discussions of the fundamental principles of each phase of the subject and also presents practical problems showing how the principles are applied, together with tables of constants, capacities of equipment, curves showing relations of factors, diagrams of equipment, and all other data necessary to cover practical conditions. The authors have drawn freely on many sources of information relating to this field of engineering and have made extensive use of manufacturers' data in designing the various mechanical systems or plants required in modern buildings. The book is profusely illustrated. It was formerly published as Volume 1 of the authors' *Mechanical equipment of buildings*.

HARPER, HERBERT DRURY

Plumbing, heating, and air conditioning shop mathematics. New York: D. Van Nostrand Company, Inc., 1942. 168 p. illus. 23 cm. \$1.50. 4067

Contents: Pipes: Measurements, fittings, weights, sizes, area, volume, etc. Heating and ventilation: Mechanics of liquids and gases. Air, water, steam, etc. Air conditioning and refrigeration: Temperature and humidity. Estimating. Tables for reference. Appendix. Index.

Note: A collection of shop problems relating to plumbing and heating, together with explanatory text, for use in industrial high school, vocational school, and technical school classes. Basic information, rules, and illustrative problems are given on each topic. Facsimiles of typical blueprints are included as an aid to estimating and solution of problems, and a number of useful reference tables are provided.

HOLMES, RICHARD E.

Air conditioning in summer and winter. New York: McGraw-Hill Book Company, Inc., 1938. 296 p. illus. 23 cm. \$3.00. 4068

Contents: The nature of the atmosphere. Air and water vapor mixtures. Psychrometry. Requirements for comfort. Air-conditioning systems. Winter air-conditioning load. Part I, Air-infiltration heat loss. Winter air-conditioning load. Part II, Heat-transmission loss. Winter air-conditioning load. Part III, Total heating and humidifying load. Heaters. Humidifiers. Air filters. Application of winter air-conditioning equipment. Introduction to refrigeration principles. Refrigerants and refrigerant tables. Refrigeration systems. Summer air-conditioning load. Dehumidifiers. Condensing equipment. Modern refrigerating equipment. Application of summer air-conditioning equipment. Temperature and humidity controls.

Note: This book assumes no previous knowledge of the subject. Installation, construction, and operation are covered from a completely practical, working viewpoint.

JENNINGS, BURGESS HILL, AND SAMUEL R. LEWIS

Air conditioning and refrigeration. Second edition. Scranton, Pa.: International Textbook Company, 1944. 517 p. illus. 23 cm. (International texts in mechanical engineering; Charles Fayette Taylor, consulting editor) \$4.50. 4068a

Contents: Preface. The background of air conditioning. Fundamental definitions: heat and thermodynamics. Air and humidity calculations. Air conditioning for human comfort. Heat transfer and transmission coefficients. The heating load. Cooling-load computations. Steam heating. Hot-water heating. Warm-air heating. Fluid flow, air-distribution systems. Heat-transfer elements. Boilers. Air cleaning. Principles of refrigeration and refrigerants. Refrigeration equipment and arrangement. Control of air-conditioning refrigerating apparatus. Industrial air conditioning. Miscellaneous air-conditioning topics, testing and costs. Index.

Note: The first edition of this book appeared in 1939 under the title *Air conditioning: principles and practice*. In the second edition additional space has been given to the subject of refrigeration in air conditioning. The entire text has been revised, and the chapters on hot-water heating and heat-transfer elements have been expanded. The work is suitable both for advanced engineering students and for practicing engineers. It contains over 50 tables, as well as problems and references to further reading.

KOTHE, OTTO W.

Duct construction; a handbook on the fabrication and installation of heating, ventilating, and air conditioning ducts, round pipes, stacks, fittings, heater, coil and washer housings; figuring areas and taking off quantities of materials, etc. Revised edition. New York: The Sheet Metal Publication Company, 1944. 302 p. illus. 21 cm. \$3.00. 4069

Contents: Materials commonly used. Shop arrangement and equipment. Methods of fabricating round pipes. Planning for installation. Longitudinal seams in ducts. Cross seams for ducts and stacks. Methods of erecting wall stacks. Practical methods of hanging ducts. Fabricating rectangular elbows. Turn-blades in elbows. Typical branch and main connections. Dampers and regulators. Diffusers, vent heads and grille connections. Heater casings and housings. Heater and air washer housings. Setting fans and making connections. Insulation of ducts. Vital points about ducts in residences. Practical use of automatic controls. Ventilating hoods. Examples of duct calculations. Taking off quantities in duct work. Appendixes: Weight of metal required for rectangular elbows. "Stringing rivets" and other blowpipe kinks. Spray cooling tower. Production forms for ventilation work. Diagonal bracing of ducts. Labor saving in soldering large blowpipe. Non-metal ducts. Index.

Note: A practical handbook on sheet-metal work for those concerned with forced-air heating, ventilating, and air-conditioning work. It describes modern methods of fabricating and installing sheet-metal work for heating, ventilating, and air-conditioning purposes. The revised edition contains a new chapter on non-metal ducts, which subject was not covered in the 1937 edition.

MACKAY, CHARLES OSBORN

Air conditioning principles. Scranton, Pa.: International Textbook Company, 1941. 210 p. illus. 23 cm. (International texts in mechanical engineering; C. F. Taylor, consulting editor) \$2.00. 4070

Contents: Properties of air, water, vapor, and mixtures of air and water vapor. Processes of mixtures of air and water vapor (general). Physical and physiological principles. The state and rate of supply of conditioned air. The humidifying of air. The heating and humidifying of air. Heat and water vapor losses from buildings. The dehumidifying and cooling of air. Apparatus dew point and the cooling cycle. Heat and water vapor gains in buildings. Estimate of the cooling load. Transmission and distribution of air. Answers to problems. Appendix. Index.

Note: The fundamental principles of air conditioning written for the student or practicing engineer having a basic knowledge of thermodynamics, fluid flow, and heat transfer. Since the volume is limited to the analysis of air conditioning processes it is intended to be used in conjunction with a study of air conditioning equipment. Problems are given at the end of each chapter and an appendix contains tables of pertinent information.

MOYER, JAMES AMBROSE, AND RAYMOND U. FITZ

Air conditioning. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 455 p. illus. 23 cm. \$4.00. 4071

Contents: Air conditioning principles. Ventilation requirements. Air filtration. Cooling methods. Refrigeration for air conditioning. Properties of refrigerants. Refrigerating equipment. Temperature and humidity control equipment. Design of temperature and humidity control systems. Fans and auxiliary equipment. Heat transfer and unit coolers. Office buildings. Theatres. Restaurants. Food factories and textile mills. Railroad passenger cars. Residences. Residence heating with refrigeration equipment—heat pump system. Appendixes: Problems in air conditioning. Tables. Index.

Note: A discussion covering the basic theory and its application in various situations. It is designed for those concerned with the designing and installation of air conditioning systems, and may also be used as a textbook. In the second edition the text and illustrations have been revised, particularly the chapters dealing with air conditioning principles, design of temperature and humidity control systems, and air conditioning for residences. A new chapter on heat transfer and unit coolers, a section of problems, and tables of the properties of saturated steam have been added.

RUMMEL, ADOLPH J., AND LEWIS O. VOGEL-SANG

Practical air conditioning. New York: John Wiley & Sons, Inc., 1941. 282 p. illus. 22 cm. \$2.75. 4072

Contents: Air conditioning fundamentals. Air—the relation of temperature, humidity, and motion to comfort. Air-conditioning systems. Refrigerating equipment. Ventilation, fans, air filtration, sound control. Automatic controls. Pumps and piping. Electric fundamentals, wiring, and motors. Economical operation of equipment. Common refrigerating system complaints. Equipment inspection, operation, and maintenance. Index.

Note: A non-technical study for those without engineering training. Most books on air conditioning are written from the standpoint of theory. This book is essentially a book of practice, providing instruction in solving the problems of designing, installing, and operating air conditioning systems. Suitable for use by owners, manufacturers, contractors, dealers, salesmen, service men, and operators of all types of heating, ventilating, and air-conditioning equipment.

SEVERNS, WILLIAM HARRISON

Heating, ventilating, and air conditioning fundamentals. New York: John Wiley & Sons, Inc., 1937. 467 p. illus. 23 cm. \$4.00. 4073

Contents: Essential definitions, laws, and properties of various media. Factors affecting human comfort. Heat transmission and air infiltration in buildings. The calculation and estimation of building heat losses and gains. Heat disseminators—radiators and convectors. Fuels, combustion, draft, and chimneys. Heating boilers and appurtenances. Pipe, pipe fittings, insulation, flow of steam in pipes, and piping details. Heating with steam. Heating with hot water. Air conveying and air cleaning—air flow, fans, duct design, and air cleaners. Ventilation—gravity-flow, central and unit systems. Heating with warm-air furnace systems. Heating with central hot-blast systems and unit heaters. Air humidification, air dehumidification, and the drying of materials. The control of air temperature and humidity. Summer cooling of buildings. Index.

Note: A useful source of reference for engineers and designers. The book offers a presentation of the essential fundamentals of heating, ventilating, and air conditioning in not-too-technical language. There are also included detailed discussions of modern methods of handling problems in these fields. Typical examples of calculations are given wherever they seem necessary for clarity.

STANGLE, WILLIAM HULL

An air-conditioning primer; the A-B-C of air conditioning. New York: McGraw-Hill Book Company, Inc., 1940. 236 p. illus. 23 cm. \$2.50. 4074

Note: An introduction to air conditioning for all concerned with problems of the design, manufacture, selling, and application of air-conditioning systems and apparatus. The treatment is extremely simple, explaining the main factors of all air-conditioning problems under the four headings: heat, air, people, and enclosures, and covering in detail the methods and apparatus by which these essentials are applied.

Refrigeration

ALTHOUSE, ANDREW DANIEL, AND CARL H. TURNQUIST

Modern electric and gas refrigeration. Fourth revised and enlarged edition. Chicago: The Goodheart-Willcox Company, Inc., 1943. 858 p. illus. (part col.) 20 cm. \$5.00. 4075

Contents: Fundamentals of refrigeration. The compression system. The absorption system. Conventional domestic compression cycle refrigerators. Domestic rotary and hermetic compression cycle refrigerators. Domestic absorption refrigerators. Domestic automatic controls. Domestic refrigerator electric motors and gas supply. Domestic refrigerator cabinets. Domestic refrigerator installations. Domestic refrigerator servicing. Service tools and the refrigerator service shop. Commercial refrigeration cabinets and mechanisms. Commercial refrigeration calculations and heat loads. Commercial refrigeration installation and servicing. Refrigerants. Technical characteristics. Air conditioning. Domestic refrigerator specifications. School refrigeration laboratory projects. Answers to review questions. Index.

Note: A textbook for use in vocational schools or technical high schools, and adaptable for use in adult training programs as

well as in home-study programs for the refrigerator serviceman. The field covered is restricted entirely to domestic refrigeration and no attempt has been made to include commercial installations. Basic principles are outlined and all of the common types of domestic refrigerators are studied in some detail, with greatest emphasis on the nine conventional models of gas-fired absorption and electric-compressor types. The fourth edition discusses new service tools and methods plus descriptions of new models and new photographs.

MANLY, HAROLD PHILLIPS

Drake's refrigeration service manual; an instruction and reference book covering maintenance, trouble shooting and repair; domestic and commercial systems. Chicago: F. J. Drake & Company, 1944. 301 p. illus. 19 cm. \$2.00.

4076

Contents: Mechanical refrigeration. Compressor construction. Refrigerant control valves and evaporators. Condensers and connections. Temperature and pressure controls. Multi-temperature systems. Temperature and pressure measurements. Tubing lines for refrigerants. Removing water, air, and dirt. Adding and removing oil. Compressor tests and service. Valves, evaporators and condensers. Cycling control service. Trouble shooting. Index.

Note: This manual is primarily an instruction book on accepted methods of servicing and repairing electric refrigerators and refrigeration systems. The construction and operation of complete systems are first described, followed by detailed instructions on the installation, testing, trouble shooting, adjustment, removal, replacement, and repair of refrigeration apparatus. The instructions are generalized to cover typical systems rather than any particular make of refrigerator. Both domestic and commercial types are discussed. A series of tables is given for ready diagnosis and repair of faulty operation, arranged by symptoms and name of unit part.

MOYER, JAMES AMBROSE, AND RAYMOND U. FITZ

Refrigeration, including air conditioning and cooling and household automatic refrigerating machines. Second edition. New York: McGraw-Hill Book Company, Inc., 1932. 538 p. illus. 24 cm. \$5.00.

4077

Contents: Refrigeration methods. System of refrigeration. Properties of refrigerants. Compressors for refrigerating plants. Household mechanical refrigerating plants. Operation of refrigeration systems. Thermodynamics of refrigerating systems. Refrigeration economics and plant testing. Ice making. Insulation and cold-storage construction. Small commercial refrigerators. Air circulation and ventilation in cold-storage. Cold-storage of foods. Quick freezing. Production of solid carbon dioxide air conditioning. Appendixes. Index.

Note: A textbook for use in engineering and agricultural schools as well as a reference text for the practicing refrigeration engineer. Describes the operation and testing of modern refrigeration systems from the household refrigerator to the large commercial installation. The second edition includes new features such as improvements in design, new small-capacity absorption plants, and revised data on refrigerant properties.

SPARKS, NORMAN ROBERT

Theory of mechanical refrigeration. New York: McGraw-Hill Book Company, Inc., 1938. 225 p. illus. 23 cm. \$3.00.

4078

Contents: Introductory. Basic thermodynamics. Principles of refrigeration. Air refrigeration system. Vapor refrigeration system. Compound vapor compression systems. Solid carbon dioxide. Multiple effect vapor compression. Absorption refrigeration system. Refrigeration in air conditioning. Water vapor refrigerating system. Other applications.

Note: Dealing exclusively with the rational treatment of refrigerating cycles, this book seeks to give engineering students a thorough grounding in the necessary principles and to provide practice in applying such principles to the logical development of all types of refrigerating systems. Purely descriptive material and empirical data have been omitted.

UNITED STATES. WAR DEPARTMENT

Refrigeration. Technical manual no. 10-610. War Department, Washington, 12 June 1943. Washington: United States Government Printing Office, 1943. 111 p. illus. 22 cm. \$0.20. 4079

Contents (abridged): Principles of refrigeration systems. Mechanical refrigeration systems. Army cold storage plant operation. Mobile refrigeration. Refrigeration methods in the Army. Appendixes: Glossary. Trouble diagnosis chart. Test for efficiency of expansion valve.

Note: This manual supersedes TM 10-610, October, 1940. It is a general treatise on the subject of refrigeration. The discussion of Army cold storage and ice plants is applicable to most civilian establishments of a similar nature.

VENEMANN, HENRY GERALD

Refrigeration theory and applications; a text book on fundamental principles involved in the process of refrigeration with applications to assist the student and engineer to design and operate plants. Chicago: Nickerson & Collins Company, 1942. 264 p. illus. 28 cm. \$3.50. 4080

Contents: Zones of state as shown by charts. Refrigeration by sensible heat process. Refrigeration by sublimation and melting. Refrigeration by melting mixture of salt and ice. Refrigeration by evaporation. Cooling the refrigerant. Compression, cooling, and condensation. Refrigerants. Air as a refrigerant. The theoretical compression cycle. Variable loads and their influence on compressor performance. Theoretical performance characteristics of a compressor. The actual compressor cycle. Methods of accommodating variable loads. Heat exchangers for cooling air. Heat exchangers for cooling liquids. Heat exchangers for condensing vapors. Automatic controls. Estimating plant loads. Specifications for refrigeration plant. Index of illustrations. List of tables.

Note: The purpose of this book is to help the beginning student and practical refrigeration engineer understand the fundamental principles of mechanical refrigeration and to enable him correctly to interpret any situation which may arise during the operation of an actual refrigerating plant. The author describes an imaginary plant in detail, assuming certain conditions of temperature and pressure to familiarize the student with the thermodynamic reactions of the refrigeration cycle, and indicates how the understanding of basic principles gained this way can be transferred to the actual plant and aid in problems of operation and design. There are numerous tables of data giving properties of superheated ammonia vapor, freon, and other refrigerants, as well as performance curves and related information.

WOOLRICH, WILLIS RAYMOND

Handbook of refrigerating engineering. Second edition. New York: D. Van Nostrand Company, Inc., 1938. 425 p. illus. 18 cm. \$5.00. 4081

Contents: Fundamental refrigeration definitions. Food preservation and cold storage. Refrigerants. Ammonia. Ammonia compressors and compression systems in refrigeration. The condenser. Refrigerator systems. Heat transfer and insulation. Thermodynamic equations, constants and calculations. Electric refrigeration plants. Absorption method of refrigeration. Absorption machine operation. Carbon dioxide. Sulphur dioxide. Characteristics of other refrigerants. Ice and ice making. Special absorption units. Air cooling and conditioning. Testing the refrigerating plant. Freon. Methyl chloride. Refrigeration in the dairy industry. Quick freezing of foodstuffs. Storage of meat. Supplementary tables. Index.

Note: This reference book is designed to furnish the facts and figures most frequently needed in the design of refrigerating equipment, and the operation of large refrigeration plants. It includes tables of thermal data and other physical properties of the important refrigerants, and the thermodynamic and mechanical principles of the various refrigerating systems and their major units of apparatus. Other major topics treated are the preservation of food, electric refrigeration, and air conditioning. Many diagrams, charts, tables, and other summaries facilitate the reference use of this handbook.

WOSTREL, JOHN FRANK, AND JOHN G. PRAETZ

Household electric refrigeration, including gas absorption system. New York: McGraw-Hill Book Company, Inc., 1938. 406 p. illus. 23 cm. \$4.00. 4082

Contents: Simple explanation of refrigeration theory. Compression systems for household refrigeration units. Absorption systems for household refrigeration units. Control devices.

Equipment for installation, service and testing. Installation instructions for compression types of refrigeration machines. Installation instructions for absorption type. Service operations and adjustments. Service complaints—diagnosis and remedy. Motors. Food preservation. Heat transfer and insulation.

Note: A practical manual for refrigeration service men, electricians, salesmen, and others interested in the operation, construction, adjustment, and servicing of household refrigerators and their control devices. In non-technical language it covers refrigeration fundamentals and the various types of household machines and systems, and gives practical instructions on service operations and how to diagnose and correct troubles.

MINING ENGINEERING

General

EATON, LUCIEN

Practical mine development and equipment. New York: McGraw-Hill Book Company, Inc., 1934. 405 p. illus. 23 cm. \$5.00. 4084

Contents: Shafts. Level development. Mining system. Shaft sinking equipment. Rock drills and accessories. Explosives. Mechanical loading. Timbering. Air compressors and pipes. Transportation. Skips and cages. Caging and skip loading devices. Hoists. Headframes. Drainage. Ventilation. Disposal of waste and stocking ore. Change house. Shops. Accident prevention.

Note: A practical treatment of the problems met in developing and equipping a mine. Mining equipment and the conditions which govern its selection are described, special attention being given to modern trends in design and construction. The book covers the choice of a mining system and gives much information useful in planning the preparation of a mine for operation.

FITZHUGH, EDWARD FULLER

Treasures in the earth. Caldwell, Idaho: Caxton Printers, Ltd., 1936. 130 p. illus. 23 cm. \$2.00. 4085

Contents: Foreword. Introduction. Molten magma. From molten magma to ore. The first families. How we recognize the families. The second generation. The placers. Structures. Looking through the rocks. Index.

Note: A general popular account of mining geology for the average reader. The accepted fundamentals are set forth in non-technical language. The formation of ore bodies, types of mines, classes of ores, mining methods, and other points are explained colorfully.

LEWIS, ROBERT STRONG

Elements of mining. Second edition. New York: John Wiley & Sons, Inc., 1941. 579 p. illus. 23 cm. \$5.50. 4086

Contents: Introduction to the mining industry. Prospecting. Mining law. Subsidence and the support of excavations. Explosives. Drilling and blasting. Shafts. Hoisting. Mining methods. Mine haulage. Mine drainage and pumping. Compressed air. Ventilation. Sampling and valuing mines. Organization, management, safety work. Index.

Note: An introduction to mining principles and practice. In this second edition the text has been revised to take note of recent advances in mining practice brought about by depletion of rich and shallow deposits that has driven the miner even deeper into the earth in pursuit of ever leaner ores. Prospecting, exploration, development, and exploitation of mineral deposits are discussed. Definitions and a brief study of mineral deposits, methods of prospecting, and aids to mineral discovery, followed by a chapter on mining laws, lead the reader to a description of the methods and tools employed to mine diverse types of deposits. The principal implements and equipment used in excavation, haulage, hoisting, pumping, and ventilation are described; methods of sampling and estimating ore reserves and the principles of mine valuation are covered. Examples are cited to illustrate the organization of mining companies to provide efficient management, and several pages are devoted to safety and welfare work and public relations.

THE MINERAL INDUSTRY, its statistics, technology and trade during 1941. v. 50. Edited by G. A. Roush. New York: McGraw-Hill Book Company, Inc., 1942. 735 p. 24 cm. \$12.00. 4087

Contents (abridged): Values of foreign coins. The State geological surveys. Tariff rates on mineral and metal products. Weight conversion factors. The mineral industry, 1892-1941. Abrasives. Aluminum and bauxite. Antimony. Arsenic. Asbestos. Asphalt. Barium; strontium. Chromium. Coal and coke. Cobalt. Copper. Diatomite. Fluorspar. Gold and silver. Graphite. Gypsum. Iron and steel. Lead. Magnesium. Mercury. Mica. Molybdenum. Nickel. Petroleum. Phosphate rock. Platinum group metals. Potash. Precious and semi-precious stones. Radium, uranium, and vanadium. Slate. Sodium salts. Sulfur and pyrite. Talc and soapstone. Tin. Tungsten. Zinc. Minor metals. Minor nonmetals. Ore dressing and coal washing. Mineral statistics. Index.

Note: The final volume of a series published from 1892 through 1941 and devoted to an annual historical and statistical survey of mining and metallurgy. Each volume presents an account of the latest methods and statistics of world production and trade, together with existing commercial evaluations. Tables in each section of the present volume give data on production, sale, value, imports and exports, available supply, consumption, and price of the particular mineral considered, according to year and country of production, based on official reports. Production reports for belligerent nations are not included for 1941 as this information was discontinued by the various governments. Several bibliographies on particular minerals are included.

MITKE, CHARLES A.

Mining methods. New York: McGraw-Hill Book Company, Inc., 1930. 195 p. illus. 24 cm. \$3.00. 4088

Contents: Selection of a stoping method. Classification of modern stoping methods. Mining with open and filled stopes. Caving methods in general. Caving with branch raises. Combined shrinkage and caving methods. Sublevel caving. Mining ore by top-slicing. Stope control, dilution and recovery with the caving methods. Index.

Note: The author's purpose is to reduce the more than 150 different so-called stoping methods to a simple classification showing the most important underground methods and derived variations.

PEELE, ROBERT, AND JOHN A. CHURCH, EDITORS

Mining engineers' handbook, written by a staff of forty-six specialists under the editorship of Robert Peele with the collaboration of John A. Church. Third edition. New York: John Wiley & Sons, Inc., 1941. 2 v. illus. 22 cm. (Wiley engineering handbook series) \$15.00. 4089

Contents (abridged): Volume I, Mineralogy. Geology and mineral deposits. Earth excavation. Tunneling. Shaft sinking in rock. Shaft sinking in unstable and water-bearing ground. Boring. Prospecting, development and exploitation of mineral deposits. Geophysical prospecting. Underground transport. Hoisting plant, shaft pockets, and ore bins. Drainage of mines. Mine ventilation. Index. Volume II: Compressed air practice. Electric power for mine service. Underground surveying. Mine geologic maps and models. Mine organization and accounts. Cost of mining. Wages and welfare. Mine air, gases, dusts, hygiene, explosions, and accidents. Mining laws. Mine examinations, valuations, and reports. Aerial tramways and cableways. Underground mechanical loading, conveying and handling. Breaking, crushing and sorting of ores. Ore sampling. Assaying. Selling, purchasing and treatment of ores. Gold amalgamation and cyanidation. Preparation and storage of anthracite coal. Preparation and coking of bituminous coal. Mathematics and mechanics. Chemical and physical notes and tables. Elements of hydraulics. Engineering thermodynamics. Power and power machinery. Mechanical engineering miscellany. Electrical engineering. Elements of structural design. Petroleum production methods. Engineers' tables. Index.

Note: Due to improvements in methods and equipment, much new material has been added to this third edition, and obsolete data have been eliminated. A drastic revision has been made in the section on methods of mining. New sections are included on petroleum and on geophysical prospecting, while the chapter on mine ventilation has been completely rewritten. The rapid development of methods and devices for underground handling and conveying of minerals has resulted in a complete revision and expansion of that section. Bibliographies are included with the sections.

RICKARD, THOMAS ARTHUR

Man and metals; a history of mining in relation to the development of civilization. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1932. 2 v. illus. 23 cm. \$10.00.

4089a

Contents: Volume I, Introduction. The ages without metal. The early use of the metals. The gold and copper mines of ancient Egyptians. The Phoenician metal-merchants. The Cassiterides, or Tin Islands. The Athenians and their silver mines. The mines of the Romans in Britain. Volume II, Mining in medieval times. The law of mines and the freedom of the miner. The conquistadores. The later argonauts. The use of coal in the world's workshop. The first use of iron. Iron in human industry. The miner in southern Africa. The romance of modern mining. Epilogue.

Note: A carefully prepared, comprehensive history of mining with much technical data included. Numerous references are listed at the end of each chapter.

STALEY, WILLIAM WESLEY

Introduction to mine surveying. Stanford University, Calif.: Stanford University Press, 1939. 275 p. illus. 20 cm. \$3.50.

4091

Contents: Instruments and equipment. Angles and linear measurements. Bearing and azimuth. Determination of true meridian. Underground traversing. Stope surveys. Transferring the meridian. Problems in mine surveying. Triangulation system for mining property. Tunnel surveys. Compass surveys. Notes and calculations. Maps and sections. Bore-hole surveys. Coal-mine surveying. Index.

Note: Designed as a textbook on the modern procedure, technique, and instruments of mine surveying, this book also serves as a reference book for people in the field or at an operating mine. Based on extensive correspondence with mine engineers in the United States, Canada, and Mexico, as well as on the author's personal experience in the field and in the classroom.

STALEY, WILLIAM WESLEY

Mine plant design. New York: McGraw-Hill Book Company, Inc., 1936. 386 p. illus. 23 cm. \$5.00.

4092

Contents: Graphical solution of simple beams and roof trusses. Roof trusses, columns, and footings. Headframes. Mine hoists. Handling of water for mining purposes. Compressed air. Mine haulage. Power plants. Mine ventilation. Index.

Note: A practical discussion of the methods and procedure of selecting and designing mine plant equipment and simple structures. The book covers surface and underground equipment and buildings, with the exception of crushing and ore-dressing apparatus. It brings together material from many diverse sources and presents it in simple, well-illustrated form to aid the mine engineer and operator in many practical problems of mine plant equipment, construction, and operation.

UNITED STATES. BUREAU OF MINES

Minerals yearbook, 1942. Prepared under the direction of E. W. Pehrson. C. E. Needham, editor. Washington, D.C.: Government Printing Office, 1943. 1574 p. illus. 23 cm. Price ?

4092a

Contents (abridged): Part I, General summary. Part II, Metals. Part III, Nonmetals. Part IV, Mine safety. Index.

Note: An annual summary of mineral production. Emphasis is upon production in the United States and its territories, but there are also data on imports into the United States and on production in foreign countries. For some metals the scrap trade is also treated. The 91 chapters are the work of individual au-

thors. Although an annual, the volume covering 1943 production did not appear until 1945. A considerable amount of material that would have appeared in the 1942 and 1943 yearbooks had to be omitted for reasons of military security.

VON BERNEWITZ, MAX WILHELM

Handbook for prospectors and operators of small mines. Revised by Harry C. Chellson. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1943. 547 p. illus. 19 cm. \$4.00.

4093

Contents: Part I, Aid to prospectors. Tents, clothing, water, food, and utensils. Methods of transportation. Health and first aid. Laws pertaining to mining. Part II, Mineralogy: Elementary geology. Geology in prospecting. Occurrence of ores. Outcrops. Prospecting. What minerals to look for and where. Sampling and assaying. Field tests and measurements. Developing and equipping a prospect. Markets and prices. Part III, Minerals; their occurrence, description, detection, and use: Metallic minerals. Non-metallic minerals. Ore dressing and treatment. Memoranda. Glossary of terms used in mining. Index.

Note: This handbook is intended as a practical guide to prospecting and small-mine operation for the beginner, and is based in part on publications of the United States Geological Survey, Federal Bureau of Mines, state geological surveys, and state bureaus of mines. The fourth edition includes details of United States and Philippine mining law, as well as new methods of tests, new material on minerals of increasing importance, crystals, ore-dressing and treatment, miscellaneous weights and measures, shipping ores and products, minerals and metal content, prices for minerals, ores, metals and building materials over a considerable period.

YOUNG, GEORGE JOSEPH

Elements of mining. Third edition. New York: McGraw-Hill Book Company, Inc., 1932. 707 p. illus. 23 cm. \$6.00.

4094

Contents: Introductory. Prospecting. Boring. Drilling for blasting purposes. Rock breaking. Rock blasting. Transportation and hoisting. Mine drainage. Ventilation and illumination. Support of mine workings. Open-pit mining. Alluvial mining. Development. Underground methods. Mine organization and operations. Mine accounting. Accidents and miners' diseases. Examination of mineral deposits. Index.

Note: The book gives a comprehensive view of the mining problem. It offers an immense mass of material, compressed into a clearly written and well-balanced treatment. It emphasizes fundamental engineering principles and presents cost analyses, examples of cost, and dimensional data established by mining practice. It covers both coal and metal mining. It shows, wherever possible, the relation of geology to mining. The third edition covers the developments in mining from 1922 to 1932, including new data and illustrations, and an added bibliography under each chapter.

Ore Dressing

BUGBEE, EDWARD EVERETT

A textbook of fire assaying. Third edition. New York: John Wiley & Sons, Inc., 1940. 314 p. illus. 23 cm. \$3.00.

4095

Contents: Assay reagents and fusion products. Furnaces and furnace room supplies. Ore sampling. Balances and weights. Cupellation. Parting. The scorification assay. The crucible assay. The assay of complex ores and special methods. Sampling and assaying of bullion. The assay of solutions. The lead assay. The assay of ores and products containing metals of the platinum group. Practical assaying. Index.

Note: The information in this book can be readily understood by the commercial assayer. The book starts with the fundamentals and the chemistry of all the reactions involved is clearly explained. The various assaying procedures for all types of precious metal ores and low-grade metallurgical products are described together with standard practice for sampling and assaying all grades of gold and silver bullion. The third edition contains information as of 1940 with respect to the apparatus and reagents available for the assayer. Results of recent research, numerous new and special procedures for the assay of less

common but important ore mineral combinations and metallurgical products, data on the assay of metals of the platinum group, and a new chapter on practical assaying are included also.

DEAN, REGINALD SCOTT, AND C. W. DAVIS

Magnetic separation of ores. Washington, D.C.: Government Printing Office, 1941. 417 p. illus. 23 cm. (United States. Bureau of Mines. Bulletin 425) Paper, \$1.00. 4096

Contents: Introduction. Physical basis of magnetic-separation processes. Laboratory studies of magnetic minerals. Development of the art of magnetic separation as shown by United States patents. Important types of magnetic separators. Application of magnetic separators. Application, other than in magnetic separation, of magnetic properties of minerals and apparatus developed for measuring them. Bibliography. Index.

Note: This report discusses briefly the operations and trends in magnetic separation, explains magnetic separation theory, describes and classifies the machines used, and outlines their development as disclosed by patents and examples of practice on a wide variety of ores. There is a classification of patents, including patent number, date issued, name of patentee, and operation covered. A bibliography of 371 references to the pertinent world literature and an extensive index are included, and there are 165 photographs, drawings, and charts. Of particular use to the ore-dressing engineer.

DORR, JOHN VAN NOSTRAND

Cyanidation and concentration of gold and silver ores. New York: McGraw-Hill Book Company, Inc., 1936. 485 p. illus. 23 cm. \$5.00. 4097

Contents: Historical examination and testing of ore. Coarse crushing. Sorting. Fine grinding. Classification. Sand treatment. Slime treatment. Concentration of ores and treatment of concentrates. Bullion recovery. Plant control. Treatment of simple and complex ores (plant descriptions and flow-sheets). Treatment of old residues. Costs and power consumption. Useful reference information.

Note: A detailed picture of the art of cyanidation as practiced in the chief mining camps of the world, with description of apparatus employed, flow-sheets used, and analyses of testing procedure, cost, and operating data. Discusses every typical ore, simple or complex, in any part of the world, with regard to treatment, and with examples from practice.

GAUDIN, ANTOINE MARC

Flotation. New York: McGraw-Hill Book Company, Inc., 1932. 552 p. illus. 24 cm. \$6.00. 4098

Contents: Introduction by Theodore J. Hoover. Historical survey of flotation. The physicochemical foundations of flotation. The phases in flotation systems. Colloid systems. Flotation reagents. Mechanical aspects of froth production. Liberation and particle size. Flotation of sulfide ores of copper. The flotation of sulfide lead-zinc ores. Sulfide copper-zinc, copper-lead, and copper-nickel ores. Oxidized ores of copper, lead, and zinc. Precious and rare metals. Non-metallic minerals. Machinery. Some pointers on mill design. Elements of costs. Choice of ore-treatment method. Testing and testing equipment. Metallurgical calculations. Effect of flotation on mining, metallurgy, and metal markets.

Note: This book presents a comprehensive treatment of mineral separation by flotation, prepared for metallurgists, chemists, students, and business men. Following a brief history and a review of physicochemical fundamentals, the book takes up in detail the technology and practice of the art, including the particular problems encountered in applying flotation to various classes of minerals, data on the solutions accepted in practice, and information on machinery, engineering control, and the economics of flotation.

GAUDIN, ANTOINE MARC

Principles of mineral dressing. New York: McGraw-Hill Book Company, Inc., 1939. 554 p. illus. 23 cm. \$5.00. 4099

Contents: Introduction. Crushers. Laboratory sizing. Liberation. Grinding. Attributes of comminution. Industrial screening. The movement of solids in fluids. Classification. Quantifying

concentrating operations. Heavy-fluid separation. Jigging. Flowing-film concentration and tabling. Flocculation and dispersion. Flotation and agglomeration—physical aspects; chemical aspects; technology. Magnetic separation. Miscellaneous processes. Separation of solids from fluids. Auxiliary operations. Mineral dressing as an art.

Note: Mineral dressing is studied from the unit-process standpoint in this text. Each process, in turn, is analyzed from its physical and chemical principles while the ultimate objectives of the art and its philosophy are kept in view. Includes numerous references and illustrations.

LOW, ALBERT HOWARD, AND OTHERS

Technical methods of ore analysis, by Arthur J. Weinig and William P. Schoder, based upon the text by Albert H. Low. Eleventh edition. New York: John Wiley & Sons, 1939. 325 p. illus. (part col.) 23 cm. \$3.75. 4100

Contents: Semi-micro methods. Aluminum. Antimony. Arsenic. Barium. Beryllium. Bismuth. Cadmium. Calcium. Chlorine. Chromium. Cobalt. Copper. Fluorine. Iron. Lead. Magnesium. Manganese. Mercury. Molybdenum. Nickel. Phosphorus. Potassium and sodium. Silicon. Sulfur. Tin. Titanium. Tungsten. Uranium. Vanadium. Zinc. Selective analyses. Preparation and standardization of solutions. Tables. Bibliography. Author index. Subject index.

Note: This revision retains, with corrections, all the original material of Dr. Low's work which is still valid. Subjects unrelated to ore analysis, such as boiler water, coal and coke, steel, oil shale, and crude petroleum have been omitted, as has the chapter on apparatus and that on logarithms. Although the eleventh edition is about sixty pages shorter than the preceding one, it actually contains more material, since repetition has been eliminated by means of cross references, and a more concise presentation has been used. Material added includes chapters on the application of semi-micro methods to ore analysis, selective analyses and beryllium. A complete bibliography on ore analysis is given. The preparation and standardization of solution have been placed in a separate chapter, with cross references in the text. Recent recognized procedures have been included for the analysis of chromium, copper, fluorine, magnesium, manganese, molybdenum, phosphorus, potassium, titanium, uranium, vanadium, and zinc. The illustrations are all new.

RICHARDS, ROBERT HALLOWELL, AND OTHERS

Textbook of ore dressing, by Robert H. Richards and Charles E. Locke, assisted by Reinhardt Schuhmann, Jr. Third edition, completely revised and rewritten. New York: McGraw-Hill Book Company, Inc., 1940. 608 p. illus. 23 cm. \$5.50. 4101

Contents: General principles. Preliminary breaking. Intermediate and secondary crushing. Steam stamps. Gravity stamps and amalgamation. Fine grinding. Laws of crushing. Preliminary washing and hand sorting. Sizing by screens. Classifying and settling in water. Coarse-sand concentrating by jigs. Fine-sand and slime gravity concentration. Flotation. Miscellaneous processes of separation. Accessory apparatus. Mill principles and processes. General considerations. Ore examination and testing. Coal dressing. Appendix. Index.

Note: This textbook for students of metallurgy and for mill operators was originally a condensation and revision of Richards' four-volume treatise, *Ore dressing*, 1903-09. The first edition of the present title was published in 1909. The third edition incorporates new methods and machines developed from 1925 to 1940, including a new chapter on flotation. The treatment has been prepared on the theory that concrete facts such as descriptions of machines and processes should be learned before proceeding to the various theories of operation. Typical mills in each of the important districts are described, together with the best current mill principles and practices.

SHEPARD, ORSON CUTLER, AND WALDEMAR F. DIETRICH

Fire assaying. New York: McGraw-Hill Book Company, Inc., 1940. 277 p. illus. 23 cm. (Metallurgical texts) \$3.00. 4102

Contents: The scope of fire assaying. Sampling. Weighing. Cupellation. Parting. Theoretical discussion of assay fusions and related smelting processes. The crucible assay. The scorification assay. The assay of bullion for gold and silver. The assay of materials requiring preliminary acid treatment. Assay of solutions for gold and silver. The fire assay for the platinum metals. Fire assay methods for base metals. The accuracy of the fire assay for gold and silver. The preparation of gold and silver bullion from amalgam and cyanide precipitate. Assay equipment and supplies. Appendices: Minimum equipment for a small assay office. List of assay supplies and reagents. Assay supply houses.

Note: Provides a working knowledge of the practice of fire assaying without the need for a comprehensive understanding of the physico-chemical principles involved. Shows how to apply scientific principles in such matters as crucible charge calculations, cupellation and scorification procedures. Presents workable procedures for the determination of gold and silver in almost any type of natural or artificial material; for the determination of the individual members of the platinum group; and for some base metals.

Economic Geology

BATEMAN, ALAN MARA

Economic mineral deposits. New York: John Wiley & Sons, Inc., 1942. 898 p. illus. 23 cm. \$6.50. 4103

Contents: Part I, Principles and processes: Introduction. Brief history of the use of minerals and of the development of economic geology. Materials of mineral deposits and their formation. Magmas, rocks, and mineral deposits. Controls of mineral localization. Folding and faulting of mineral deposits. Classifications of mineral deposits. Resources, international relations, and conservation in minerals. Geology in prospecting, exploration, development, and valuation of mineral properties. Extraction of metals and minerals. Part II, Metallic mineral deposits: The precious metals. The non-ferrous metals. Iron and ferroalloy metals. Minor metals and related nonmetals. Part III, Non-metallic mineral deposits: The mineral fuels. Ceramic materials. Structural and building materials. Metallurgical and refractory materials. Industrial and manufacturing materials. Chemical minerals. Fertilizer minerals. Abrasives and abrasive minerals. Gemstones. Ground water supplies. Index.

Note: A complete, comprehensive treatise, written in not-too-technical language, on the formation, occurrence, and technique of discovery of mineral deposits of economic value. The book contains not only the customary fundamentals of the technical field, but also something of the history and philosophy of the study of mineral deposits. Emphasis is placed upon processes of formation of mineral deposits. The content includes worldwide deposits. A new treatment of oxidation, gossans, and supergene enrichment is given. There is also a detailed discussion of the mineral-forming processes of sedimentation, evaporation, and residual concentration. A new treatment of magmatic ores is given, with details of relations of magmas and ores. Further, the book gives practical geologic applications of theory, such as the value of geology in prospecting, the importance of minerals in industry and international relations, and mineral resources. A treatment of non-metals in industrial use groups is given. An abundance of diagrams constitutes an important part of the book.

EMMONS, WILLIAM HARVEY

The principles of economic geology. Second edition. New York: McGraw-Hill Book Company, Inc., 1940. 529 p. illus. 23 cm. \$4.00. 4104

Contents: Introduction and classification of mineral deposits. Magmatic segregations. Pegmatites. Pyrometamorphic or contact-metamorphic deposits. Hypothermal deposits. Mesothermal deposits. Epithermal deposits. Deposits formed at moderate and shallow depths by cold meteoric solutions. Sedimentary deposits. Deformation of ore deposits. Superficial alteration and enrichment of ore deposits. Openings in rocks and certain features of epigenetic deposits. Metasomatic processes. Mineral associations and wall-rock alterations. Associations of metalliferous lodes and igneous rocks. Structural control of epigenetic deposits. Iron. Copper. Gold and silver. Zinc and lead. Nickel, platinum, and chromium. Tin and tungsten. Miscellaneous metals. Deposits of the nonmetals. Index.

Note: A concise presentation of the science of metalliferous and nonmetalliferous deposits, except mineral fuels, for advanced

students of geology. The volume is based largely on lectures given at the Universities of Chicago and Minnesota. The first part treats the subject in a general manner and is followed by a detailed discussion of the individual metals and non-metals. This edition has been extensively revised and the material has been rearranged. Descriptions of mining districts have been brought up to date and the number of maps and illustrations has been increased. Numerous footnotes constitute an extensive bibliography.

FERGUSON, HENRY GARDINER, AND ROGER W. GANNETT

Gold quartz veins of the Alleghany district, California. Washington, D.C.: Government Printing Office, 1932. 139 p. illus. 29 cm. (United States. Geological Survey. Professional paper 172) Paper, \$2.00. 4105

Contents: Part I, Geology: Introduction. Rock formations. Geologic structure and history. Part II, Ore deposits: History and production. The veins. Mineralogy. Ore shoots. Origin of the deposits. Mine descriptions. Future of the district. Index.

Note: The Alleghany district has been a producer of gold since the earliest days of California gold mining, but differs from other California gold-quartz districts in that nearly all the production is obtained from small shoots of high-grade ore and very little is obtained from the ordinary type of lower-grade ore. In view of this unusual concentration of the gold, the present paper attempts to set forth in considerable detail all features of the geology that have any bearing on the localization of the high-grade ore shoots and to give the conclusions as to the determining causes. About one-third of the work is devoted to a description of the existing mines in the area. There are 46 plates showing photomicrographs of ore, together with numerous maps and charts.

GILLULY, JAMES

Geology and ore deposits of the Stockton and Fairfield quadrangles, Utah. Washington, D.C.: Government Printing Office, 1932. 171 p. illus. 29 cm. (United States. Geological Survey. Professional paper 173) Paper, \$0.85. 4106

Contents: Introduction. General geology. Structure. Summary of geologic history. Rock alteration. Weathering. Mineralogy. Ore deposits. The mines. Index.

Note: A detailed report on the geology of the area and its relation to the ores which occur chiefly as bedded replacement deposits and veins. About a third of the work is devoted to a description of the various mines in the area, illustrated with maps showing the workings and cross-sections of the ore bodies. There is a geologic map of the area to the scale 1:62,500, plus a number of photomicrographs of ores. The bibliography contains 48 references to works published between 1858 and 1930 which touch upon the geology or mining industry of the quadrangles.

HEWETT, DONNEL FOSTER

Geology and ore deposits of the Goodsprings quadrangle, Nevada. Washington, D.C.: Government Printing Office, 1931. 172 p. illus. (part col.) 29 cm. (United States. Geological Survey. Professional paper 162) Paper, \$1.15. 4107

Contents: Introduction. Geography. Geology: Age and character of the rocks. Unexposed rocks. Exposed rocks. Structure. Rock alteration. History of mining. Production, by V. C. Heikes. Outlook for mining in the district. Ore deposits. Detailed description of the mines: Gold mines. Silver mines and prospects. Copper mines. Zinc and lead mines. Index.

Note: Since 1907 the Goodsprings district has attained eminence as the principal source of zinc ores in Nevada, but production has fluctuated widely for a number of reasons. The aim of the present paper is to present a greater understanding of the geologic relations of the deposits as an aid to the scientific improvement of mining and production technique. There are many large-scale geologic maps and mine-production charts included, plus a bibliography of 22 publications issued between 1848 and 1929.

HEWETT, DONNEL FOSTER, AND OTHERS

Mineral resources of the region around Boulder Dam, by D. F. Hewett, Eugene Callaghan, B. N. Moore, T. B. Nolan, W. W. Rubey and W. T. Schaller. Washington, D.C.: Government Printing Office, 1936. 197 p. illus. 23 cm. (United States. Geological Survey. Bulletin no. 871) Paper, \$0.45. 4108

Contents: Introduction. Metalliferous resources. Nonmetalliferous resources: Heavy chemical minerals. Construction materials. Refractory and ceramic materials. Fuels. Water. Index.

Note: An appraisal of the mineral resources of the region with respect to their probable availability as the basis of industries that would consume power generated at Boulder Dam. Geologic data useful to the exploitation of the resources is included, and there are many topographic, correlation, and geologic maps.

JOHNSTON, WILLIAM DRUMM, JR.

The gold quartz veins of Grass Valley, California. Washington, D.C.: Government Printing Office, 1940. 101 p. illus. 28 cm. (United States. Geological Survey. Professional paper 194) Paper, \$2.50. 4109

Contents: Introduction. Summary of the geologic history of the northern Sierra Nevada. Rock formations. Ore deposits: History and production. Mining conditions at depth. Mine waters. Magnetite-pyrrhotite vein. Gold quartz veins. Mineralogy. Paragenesis of the vein-forming minerals. Ore shoots. Hydrothermal alteration of the wall rocks. Origin of the deposits. Method of vein formation. Source of vein materials. Mines. Index.

Note: One-third of the paper is devoted to a description of the geologic features of the various mines in the region, including their history and production, the genesis of the veins, and their distribution. There are 108 illustrations, including a large number of maps and charts and photomicrographs of ore.

LAHEE, FREDERIC HENRY

Field geology. Fourth edition, revised and enlarged. New York: McGraw-Hill Book Company, Inc., 1941. 853 p. illus. 19 cm. \$5.00. 4110

Contents: Introduction. Features seen on the surfaces of rocks. Rock particles and fragments. Original surface features of sediments. Original structures and structural relations of sedimentary rocks. Field relations of igneous rocks. Tilted and folded strata. Fractures and fracture structures. Metamorphic rocks. Mineral deposits. Topographic forms. Topographic expression. Topographic maps and profile sections. Geologic surveying: General observations. Instruments and other equipment used in geologic field mapping. Instrumental methods in field mapping. Airplane mapping. Subsurface geologic surveying. Modes of geologic illustration. Interpretation of geologic maps. Geologic computations. Preparation of geologic reports. Geophysical surveying.

Note: A standard and widely-used manual of geological exploration and mapping, combining both textbook and reference features, especially suitable for petroleum and mining geologists and engineers. It presents methods and keys for the recognition and interpretation of land forms and structures, and explains how to take and record data in the field, make and interpret maps, etc. This edition has been revised in line with advances in geological research and practice, with valuable new material on mass movement, flow structures and fracture systems in igneous rocks, directional drilling, use of gamma-rays in subsurface correlation, and electrical logging.

LILLEY, ERNEST RAYMOND

Economic geology of mineral deposits. New York: Henry Holt and Company, 1936. 811 p. illus. 24 cm. \$5.00. 4111

Contents: General principles. Major constructional non-metallic mineral materials. Fuels and related bitumens. The ferrous metals. The non-ferrous metals. Precious metals and minerals. The major chemical minerals. The industrial minerals. The lesser metals and minerals. Summary and conclusions. Index.

Note: A textbook for the advanced student of geology, covering the formation and physical characteristics of mineral deposits

such as petroleum, natural gas, iron ore, lead, gold, nitrates, mica, and constructional stone, together with a discussion of their mining and processing, their economic importance, and the distribution of deposits throughout the world. The book may also serve as a reference text for the mining engineer. Bibliographies appear under each chapter.

LINDGREN, WALDEMAR

Mineral deposits. Fourth edition, revised and reset. New York: McGraw-Hill Book Company, Inc., 1933. 930 p. illus. 23 cm. \$6.50. 4112

Contents: Introduction. The formation of minerals. Atmosphere, hydrosphere and underground waters. The flow of underground waters. The spring deposits at the surface. The composition of underground waters. Relations of mineral deposits to mineral springs. Origin of underground waters. Metamorphic zones and mineral deposits. The magma in its relations to mineral deposits. Folding and faulting. Openings in rocks. The form and structure of mineral deposits. Texture of mineral deposits. Ore-shoots. Classification of mineral deposits. Deposits formed by mechanical processes of transportation and concentration. Detrital deposits. Deposits produced by chemical processes of concentration in bodies of surface water by reactions between solutions. Sedimentary iron ores, regionally metamorphosed. Deposits formed by evaporation of bodies of surface waters. Mineral deposits resulting from processes of rock decay and weathering. Deposits formed by concentration of substances contained in the surrounding rocks, by means of circulating waters. Lead and zinc deposits in sedimentary rocks; origin independent of igneous activity. Epithermal deposits. Deposits of native copper. Mesothermal deposits. Hypothermal deposits. Pyrometamorphic deposits. Regionally metamorphosed sulphide deposits. Mineral deposits of the pegmatite dikes. Mineral deposits formed by concentration in molten magmas. Oxidation of metallic ores. Metallogenic epochs. Index of localities. Index of subjects.

Note: An attempt to place the knowledge of mineral deposits on the basis of a consistent genetic classification and thus bring the subject into a more important position in the field of geology. The general plan has been to select a few suitable examples to illustrate the genesis or formation of each allied group of deposits. Intended for advanced students of geology and as a reference for practicing geologists and mining engineers. The fourth edition covers the increase in geological knowledge from 1913 to 1933 resulting from increased activity in mineral production. New bibliographic material has also been added.

LOVERING, THOMAS SEWARD

Minerals in world affairs. New York: Prentice-Hall, Inc., 1943. 394 p. illus. 23 cm. (Prentice-Hall geology series, edited by N. E. A. Hinds) \$5.35. 4113

Contents: Part I, Economics, history, and geology: Background—ethics, history, and geology. Economics of the mineral industries. Minerals in history before the industrial era. The industrial era. Geology. Part II, Industrial minerals: The mineral fuels—coal. Petroleum. Part III, Industrial minerals—iron and the ferro-alloy metals: Iron and steel. Manganese. Chromium. Nickel. Tungsten. Molybdenum. Vanadium. Part IV, Nonferrous industrial metals: Copper. Aluminum. Lead. Zinc. Tin. Mercury. Antimony. Appendix. Index. Production tables.

Note: Mineral resources, according to the author's thesis, are a nation's most valuable but ephemeral possession, since there can be no second crop. Because of their restricted occurrence and indispensability to industry, they have determined the course of history many times in the past and will be of increasing importance in the future. The work reviews the role of minerals in national power, the economics of mineral industries, and the geology, geography, and control of important minerals.

NATIONAL RESEARCH COUNCIL. COMMITTEE ON PROCESSES OF ORE DEPOSITION

Ore deposits as related to structural features, prepared under the direction of the Committee on Processes of Ore Deposition of the Division of Geology and Geography of the National Research Council, Washington, D.C. Edited by W. H. Newhouse. Princeton, N.J.: Princeton University Press, 1942. 280 p. illus. 31 cm. \$6.50. 4114

Contents (abridged): Some relations of ore deposits to structural features. Structural features associated with ore deposits of certain types and in large areas. Ore deposits arranged according to structural features. Ore deposits in massive rocks. Ore deposits in layered rocks: Not related to known faults, fissures, or shear zones. With faults, fissures, or shear zones. Ore deposits near contact of massive and layered rocks. Structural petrology applied to ore deposits. Index.

Note: A collection of 81 short papers by about 60 specialists in several fields of geology related to ore deposition who have had intimate contact with ore occurrence in mines or districts. The papers describe the several structural features which have localized ore in a given mining district, and while the emphasis is upon description and fact rather than on theory, the interpretations and opinions of the various contributors are individual and occasional differences in viewpoint occur. Although many types of structural features and ore deposits are represented, no claim is made for completeness and no attempt is made to secure a weighted average of types of relationship. Each paper is illustrated with numerous drawings and there are bibliographic references in footnotes throughout the work.

NOLAN, THOMAS BRENNAN

The Gold Hill mining district, Utah. Washington, D.C.: Government Printing Office, 1935. 172 p. illus. 28 cm. (United States. Geological Survey. Professional paper 177) Paper, \$1.25. 4115

Contents: Introduction. Geologic formations. Geologic structure. Igneous metamorphism. Ore deposits. Minerals of the metamorphosed rocks and the ore deposits. Mines and prospects. Index.

Note: A detailed description of the geologic features and structures of the area, based on the author's field work in 1925-26. About one-third of the work is given over to a description of the mines and prospects of the district, including an account of the veins and their constituents, a history of production, and an assessment of future production in the locality. A large physiographic and geologic map to the scale 1:24,000 is included, and there are a number of photomicrographs of ores.

NORTHROP, STUART ALVORD

Minerals of New Mexico. Albuquerque: University of New Mexico Press, 1942. 387 p. illus. 23 cm. (University of New Mexico. Bulletin no. 379. Geological series. Vol. 6, no. 1) \$3.00. 4116

Note: A comprehensive report on the minerals of New Mexico including outlines of their physical properties together with records of occurrence. Part I includes a summary of the highlights in the history of New Mexico mineralogy and mining, a general survey of the economic aspects of its mineral industry, and a list of minerals recently discovered in New Mexico. Part II, which occupies most of the volume, lists the minerals alphabetically, giving their composition, physical properties, descriptions of sub-species, and records of occurrence. There is an extensive bibliography and an index to the minerals mentioned.

PALACHE, CHARLES

The minerals of Franklin and Sterling Hill, Sussex county, New Jersey. Washington, D.C.: Government Printing Office, 1935. 135 p. illus. 29 cm. (United States. Geological Survey. Professional paper 180) Paper, \$0.30. 4117

Contents: Introduction. The Franklin mining district: General features. The ore deposits: Average composition of the ore. Utilization of the ores. Paragenesis of the minerals. Origin of the zinc ore deposits. The minerals. Index.

Note: The study of the minerals of the Franklin area spans more than a century and is still incomplete. In this paper, data scattered through numerous American and foreign journals have been compiled and combined to prepare a consistent and detailed description of the many minerals already found. The author attempts further to fill in many gaps in the knowledge of some species, based on a study of the existing collections. More than 140 minerals, all of which are described in this paper, have been found in the district, 32 of which were first found there, and 30 of which are not known elsewhere in the world. There are brief statements of their occurrence, geologic relations,

associations in the rocks, and a résumé of the several hypotheses of their origin. There is an extensive, annotated bibliography of 285 references arranged chronologically from 1810 to 1934, covering the extant world literature on the subject.

PARK, CHARLES FREDERICK, JR., AND R. S. CANNON, JR.

Geology and ore deposits of the Metaline quadrangle, Washington. Washington, D.C.: Government Printing Office, 1943. 81 p. illus. 29 cm. (United States. Geological Survey. Professional paper 202) Paper, \$1.50. 4118

Contents: Introduction. General geology. Development of the topography. Caves. Alteration of the sedimentary rocks. Ore deposits. Minerals of the ore deposits and metamorphic rocks. The mines. Index.

Note: The field work on which this paper is based was undertaken primarily as a study of the metalliferous deposits of the area. For this reason the available time was largely devoted to consideration of the Pend Oreille Valley, where most of the known mineral deposits occur. About one-fourth of the work is taken up with an account of the mines in the area. A bibliography of 37 publications dealing with the Metaline area and nearby districts is included, and there are 27 plates of photographs and a geologic map.

RIES, HEINRICH

Economic geology. Seventh edition, corrected printing. New York: John Wiley & Sons, Inc., 1937. 720 p. illus. 23 cm. \$5.00. 4119

Contents (abridged): Part I, Nonmetallics. Coal—peat. Petroleum, natural gas, and other hydrocarbons—solid and semi-solid bitumens; bituminous rocks; oil shales. Building stones—granites; limestones and marbles; serpentine; sandstones; slates. Clay. Limes and calcareous cements. Salines and associated substances—salt; bromine; calcium chloride; sodium sulphate; sodium carbonate; soda niter; borates; iodine; potash. Gypsum. Fertilizers—rock phosphates of the United States. Abrasives. Minor minerals— asbestos; barite; diatomaceous earth (diatomite); feldspar; fluorspar; foundry sands; Fuller's earth (bleaching clay); glass sand. Minor minerals—graphite; lithium; lithographic stone; magnesite; meerschaum; mica; natural mineral pigments; monazite. Minor minerals—precious stones; quartz; sillimanite group; strontium; sulphur; pyrite; tale and soapstone; tripoli; zircon. Part II, Ore deposits: Ore deposits. Iron ores. Copper. Lead and zinc. Gold and silver. Minor metals. Index.

Note: A comprehensive work discussing the metallic and non-metallic minerals of economic value from their origins to the ultimate uses to which man has put them. In the seventh edition many parts have been entirely rewritten, such as the chapter on oil and gas. The chapters on subsurface waters and silver-lead ores have been eliminated, and the essentials of their content woven into their logical place in other chapters. The important tables of statistics which appeared in former editions have been replaced by numerous graphs. The book treats chiefly the mineral resources of North America. There are, however, brief references to the important deposits in other continents. In the corrected printing figures through 1940 on various minerals are included.

ROSS, CLARENCE SAMUEL

Origin of the copper deposits of the Ducktown type in the southern Appalachian region. Washington, D.C.: Government Printing Office, 1935. 165 p. illus. 28 cm. (United States. Geological Survey. Professional paper 179) Paper, \$0.45. 4120

Contents: Introduction. Methods of study. Location and geomorphic relations. General geology of the southern Appalachian region. Genetic history of the copper-bearing veins of the southern Appalachian region. Chemistry and physics of vein formation. Source and character of vein-forming materials. Mineralogy. Local descriptions. Index.

Note: This paper presents a study of the copper-bearing pyrrhotite deposits of the Ducktown type and allied bodies with the purpose of reconstructing the genetic history of the veins, including the later magma and hydrothermal stages of mineral

formation. A secondary and related object of the study has been to make the maximum use of petrologic methods in connection with the field studies in the investigation of an ore deposit and to test the power of these methods in solving the general problem of vein genesis. There are 43 plates of photomicrographs of specimen ores from the region, and an annotated bibliography of 114 publications covering the world literature of the subject.

ROUSH, GAR A.

Strategic mineral supplies. New York: McGraw-Hill Book Company, Inc., 1939. 485 p. illus. 23 cm. \$5.00. 4121

Contents: Strategic and critical minerals. General survey. Manganese. Nickel. Chromium. Tungsten. Tin. Aluminum. Antimony. Mercury. Platinum. Mica. Iodine. Nitrogen. Domestic self-sufficiency. Strategic mineral supplies in foreign countries. Commercial interests versus political interests.

Note: A concise picture, from both the military and general industrial viewpoint, of the status of the United States with respect to materials of mineral origin of which the domestic supply is inadequate to meet the demand. It discusses each group of strategic minerals in detail covering such basic items as uses, substitutes, ore reserves, sources of supply (both domestic and foreign), imports, export, tariff, stocks, and political and commercial control, as they affect the domestic situation in both peace and war. The book is based on articles which first appeared in the periodical, *The Military engineer*.

SINGEWALD, JOSEPH THEOPHILUS

Bibliography of economic geology of South America. New York: The Society, 1943. 159 p. 24 cm. (Geological Society of America. Special papers. No. 50) \$0.80. 4122

Contents: Preface. List of serials and abbreviations. South America. Argentina. Bolivia. Brazil. Chile. Colombia. Ecuador. Guianas: British Guiana. Dutch Guiana. French Guiana. Paraguay. Peru. Uruguay. Venezuela.

Note: Contains the bibliographies, brought up to date, which appeared in Miller and Singewald's *The mineral deposits of South America*, New York: The McGraw-Hill Book Company, 1919. The present bibliography contains a total of 2912 titles, sixty-three percent of which are dated subsequent to 1919.

TARR, WILLIAM ARTHUR

Introductory economic geology. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 645 p. illus. 23 cm. \$5.00. 4123

Contents: Part I, History and origin of earth materials: Introduction. Earth materials used by ancient man and their significance in modern life. General principles of the formation of mineral deposits. Part II, Metallic earth materials: Iron. Ferro-alloy metals. Copper. Lead and zinc. Gold and silver. Tin. Aluminum. Minor metals. Part III, Non-metallic earth materials: Coal. Petroleum and natural gas. Structural materials. Materials used chemically. Materials of miscellaneous uses. Index.

Note: An introductory treatment presenting in as simple a manner as possible a general picture of the earth materials used by man. The treatment of the formation of the more common minerals, their distribution, mining, treatment, uses, etc., is clear and fundamental, making more than an elementary knowledge of geology unnecessary to a thorough understanding of the book. The second edition incorporates the changes in the economic use of earth products between 1930 and 1938, plus new data on metallurgy and new bibliographic references.

UNITED STATES. BUREAU OF MINES

Mineral raw materials. Survey of commerce and sources in major industrial countries. Prepared by the staff of the Foreign Minerals Division, United States Bureau of Mines. Published with the approval of Harold L. Ickes, Secretary, Department of the Interior, and with the permission of John W. Finch, Director, Bureau of Mines. New York: McGraw-Hill Book Company, Inc., 1937. 342 p. illus. 23 cm. \$5.00. 4123a

Contents: Introduction. Part I, Survey by minerals: Foreword. Aluminum. Antimony. Asbestos. Barite. Bauxite. China clay. Chromite. Coal. Copper. Fluorspar. Graphite. Gypsum. Iron ore. Lead. Magnesite. Manganese ore. Mercury. Mica. Nickel. Nitrates. Petroleum. Phosphate rock. Pig iron and ferro-alloys. Platinum. Potash. Pyrites. Sulphur. Talc. Tin. Tungsten. Vanadium. Zinc. Part II, Survey by countries: Foreword. Belgium. Canada. France. Germany. Italy. Japan. Norway. Spain. Sweden. U.S.S.R. (Russia). United Kingdom. United States.

Note: The sources of supply and the interdependence of nations for the mineral raw materials required to maintain and develop domestic industries are indicated in this survey. Part I develops the survey by minerals, covering the major crude materials and discussing world production, industrial uses, and substitutes. Part II continues the survey by countries, giving production and import trade tables and outlining protective measures adopted by various countries that have an influence on world trade in minerals.

Petroleum

AMERICAN PETROLEUM INSTITUTE

Finding and producing oil; a manual of information on the business of finding and producing oil, including a digest of laws pertaining thereto, and a list of persons, firms, or corporations engaged directly or indirectly in such business. American Petroleum Institute, Dallas, Texas: Prepared and published by Division of Production, American Petroleum Institute, 1939. 338 p. illus. 27 cm. \$3.00. 4124

Contents: Geological methods of oil exploration. Geophysical methods of exploration. Methods of drilling. Sampling, coring, and bore-hole surveying. Production methods. Measuring, sampling, and testing oil products. Voluntary cooperative activities. Vocational and scholastic training. Dissemination of information. Oil and gas conservation laws. Voluntary trade associations and professional societies. Producers of oil. Manufacturers, supply houses, and various servicing companies. Drilling contractors. Fundamental research.

Note: This volume presents an outline of the petroleum and natural gas industries from the mining and production aspect, including a listing of the various services and facilities such as manufacturers, suppliers of equipment, consultants, contractors, educational facilities, etc., which are available to those engaged in the oil and gas industry. Each chapter is composed of a number of short papers covering related phases such as petroleum geology, methods of prospecting, core drilling, analysis of oil-field waters, microscopic examination of cores, oil-well pumping, and others. There are several rather extensive bibliographies appended to these papers and there are well over 1,000 manufacturers, supply houses, and servicing companies listed.

BARTON, DONALD CLINTON, AND GEORGE SAWTELLE, EDITORS

Gulf Coast oil fields. A symposium on the Gulf Coast Cenozoic by fifty-two authors. Forty-four papers reprinted from the *Bulletin of the American Association of Petroleum Geologists* with a foreword by Donald C. Barton. Tulsa, Okla.: The American Association of Petroleum Geologists, 1936. 1070 p. illus. 23 cm. \$4.00. 4125

Contents (abridged): Part I, General and theoretical papers: Oil-producing horizons of Gulf Coast in Texas and Louisiana, by Alexander Deussen. Mechanics of formation of salt domes, by Donald C. Barton. Fluid mechanics of salt domes, by L. L. Nettleton. Occurrence of siderite in cap rock at Carlos Dome, Texas, by F. W. Rolshausen. Relation of geophysics to salt-dome structures, by J. Brian Eby and Robert P. Clark. Gulf Coast geosyncline, by Donald C. Barton and others. Surface fracture system of south Texas, by Donald C. Barton. Part II, Stratigraphy: Study of Vicksburg group at Vicksburg, Miss., by A. R. Mornhinveg and J. B. Garrett, Jr. Review of Tertiary stratigraphy of Louisiana, by Henry V. Howe. Post-Fleming surface formations, by John Doering. Detailed study of some

beds in Fayette county, Texas, by Leslie Bowling and Arno P. Wendler. Areal geology of Eocene in northeastern Mexico, by William G. Kane and Guy B. Gierhart. Part. III, Descriptions of oil fields and salt domes: Driscoll Pool, Duval co., Texas, by I. R. Sheldon. Government Wells oil field, by John Trenchard and J. Barney Whisenant. Raccoon Bend oil field, Austin co., Texas, by L. P. Teas and Charis R. Miller. Buckeye field, Matagorda co., Texas, by E. W. Brucks. Structural features of Brenham salt dome, Washington and Austin cos., Texas, by Selwyn O. Burford. Orange, Texas, oil field, by Alexander Deussen and E. W. K. Andrau. Geology and geophysics showing cap rock and salt overhang of High Page Island dome, Galveston co., Texas, by Michel T. Halbouty. Jefferson Island salt dome, Iberia parish, La., by Lawrence O'Donnell. Late recent history of Côte Blanche salt dome, St. Mary parish, La., by Donald C. Barton. Belle Isle salt dome, St. Mary parish, La., by Donald C. Barton. Mount Sylvan dome, Smith co., Texas, by E. A. Wendlandt and G. Moses Knebel. Index.

Note: This collection of technical papers is intended as a supplement to the *Geology of salt dome oil fields*, Tulsa, Okla., 1926, and presents a partial record of the new information derived during the years 1924 to 1936. The papers contain tables of geologic data, mathematical analyses of dynamic action, calculations of available oil supplies, torsion balance maps, general stratigraphy and correlations, together with analysis of oils and other related data. Bibliographies follow many of the chapters.

CLOUD, WILBUR FRANK

Petroleum production. Norman: University of Oklahoma Press, 1937. 613 p. illus. 24 cm. \$5.00. 4126

Contents: Preface. Introduction. Legal phases of petroleum production. Oil sands and production relations. Oil field development. Oil field power and prime movers. Oil well completion. Flowing oil wells. Air-gas lift equipment and methods. Surface equipment and methods for pumping wells. Underground pumping equipment and pumping problems. Cleaning and reconditioning oil wells. Repressuring oil sands. Gathering, gauging, and shipping crude oil. Preparing crude oil for the market. Oil field water problems. The production of natural gas. Storage and storage problems. Index.

Note: The author has endeavored to present the entire subject of production and development, compiling the more important information pertinent to each phase of petroleum production as usually anticipated and utilized by engineers and operators. Some legal details of acquiring exploratory rights are brought out. Special emphasis has been placed upon sand conditions, reservoir energies, prevention of waste, increasing ultimate recovery, and improving the economy of production practices. Selected references follow each chapter.

DEGOLYER, EVERETTE LEE, EDITOR

Elements of the petroleum industry. Editorial advisory board: John M. Lovejoy, Hallan N. Marsh, H. H. Power [and others]. New York: The American Institute of Mining and Metallurgical Engineers, 1940. 519 p. illus. 23 cm. (Seeley W. Mudd series) \$5.00. 4127

Contents: Physical and chemical properties of petroleum and its products, by Stewart P. Coleman. Direct indications of the occurrence of oil and gas, by E. DeGolyer. Essentials for oil pools, by K. C. Heald. Exploration by geophysical methods, by J. C. Karcher. Land tenure and leasing, by Rush Greenslade. Trading and promotion, by John M. Lovejoy. Royalties, by Alexander Deussen. Oil-well drilling machinery and practices, by J. E. Brantly. Drilling, testing, and completion, by John R. Suman. Production practice, by C. V. Millikan. Conservation, by M. Albertson. Secondary methods for increasing oil recovery, by Paul D. Torrey. Oil pipe-line transportation, by W. R. Finney. Marine transportation, by B. B. Howard and M. D. Stauffer. Petroleum refining, by Walter Miller. Marketing, by Sidney A. Swensrud. Oil accounting, by Allan H. Hand. The natural-gas industry, by Eugene A. Stephenson. Economics of the petroleum industry, by Joseph E. Pogue. Introduction to the literature of oil and gas, by E. DeGolyer.

Note: This volume gives a readable and authoritative picture of many phases of the petroleum industry. Intended for the engineer and the layman. Bibliographies are listed at the end of most chapters, in addition to the literature guide which is given at the end of the book.

EMMONS, WILLIAM HARVEY

Geology of petroleum. Second edition. New York: McGraw-Hill Book Company, Inc., 1931. 736 p. illus. 23 cm. \$6.00. 4128

Contents: Preface. Introduction. Surface indications of petroleum and materials associated with it. Openings in rocks, reservoir rocks and covering strata. Some properties of petroleum, gas and oil-field waters. Origin of petroleum. Maps and logs. Accumulation of petroleum. Structural features of oil and gas reservoirs. Behavior of wells and rock pressure. Deformation of petroliferous strata. Eastern United States. Mid-continent region. Gulf Coast region. Rocky Mountain region. Pacific Coast. North America and West Indies, except United States. South America. Europe except Russia. Russia. Oceanica and Asia, except Russia. Australia and Africa. Index.

Note: A compilation of geological data on important petroleum and natural gas deposits throughout the world. The book is intended to serve primarily as a textbook and secondarily as a compendium of the world's oil-bearing areas. The second edition (1931) contains accounts of new oil fields developed since the publication of the first edition (1921) as well as new maps and illustrations. There are several hundred bibliographical references throughout the text.

HAGER, DORSEY

Fundamentals of the petroleum industry. New York: McGraw-Hill Book Company, Inc., 1939. 445 p. illus. 21 cm. \$3.50. 4129

Contents: Petroleum's contribution to national well-being. History and romance of oil. Individual operators, oil companies, and oil-field workers. World distribution of oil. Petroleum reserves. Acquiring oil lands and royalties on oil lands. Engineering in the search for oil. Drilling for oil. Production methods—well completion. Production methods—well spacing. Transportation and storage. Refining of oil. Marketing. The business of oil. Oil securities. The oil industry and legislation. Future trends.

Note: An introduction to the petroleum industry for all who want a check on effective methods of management and engineering in the production and marketing of oil. Based on practical experience and many special investigations; covers not only the many essentials of oil field operation but also history and scope of the industry, financial aspects, prospecting, transportation and refining of oil, and many other facts necessary to a full understanding of this important industry.

HAGER, DORSEY

Practical oil geology. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1938. 466 p. illus. 19 cm. \$4.00. 4130

Contents: Petroleum, its origin and accumulation. Chemical composition of petroleum. Stratigraphy. Fossils and their uses. Structural geology. Prospecting and mapping. Selecting drill-hole sites. Factors in oil-well drilling. Factors in oil production. Water and its relationship to oil. Natural gas. Oil shales. Geologic field methods and instruments in use. Geophysics. What the geologist has done for the oil business. Appendix. Index.

Note: A concise and practical manual for the oil man which describes general conditions relating to the occurrence of oil and its geology. Although the material has been drawn from both American and European sources, the emphasis is on American practice. This edition has been considerably revised and enlarged, and some theories, expressed in the previous edition, have been changed to agree with new facts. Two chapters have been added, one on the uses of fossils, and the other on geophysics. There is a list of books on oil and general geology.

HALBOUTY, MICHEL THOMAS

Petrographic and physical characteristics of sands from seven Gulf Coast producing horizons. Houston, Tex.: Gulf Publishing Company, 1937. 106 p. illus. 20 cm. \$1.50. 4130a

Note: The results of a study conducted on sands either cored or obtained in cuttings from wells drilled to the top of the Middle Oligocene or deeper, with the purpose of determining whether or not the sands of certain geologic zones and formations in the Gulf Coast region have enough petrographic or physical characteristics that they may be distinguished solely by zone instead of by paleontological methods. The writer was con-

cerned with the relative prospects of correlating the sediments of the Gulf Coast of Texas and Louisiana by means of an intensive study of the component minerals and physical properties of the sand bodies. There are 72 histograms illustrating the textures of various sands. This material was first published in *The Oil weekly* in a number of installments extending over a seven-week period.

HARDWICKE, ROBERT ETTER

Petroleum and natural gas bibliography. Austin, Texas: The University of Texas, 1937. 167 p. 23 cm. \$2.00. 4131

Contents: Foreword. Preface. Subject index. General and historical: general—economic and political aspects—historical or of historical value—fiction, historical fiction, and travel—biographical—dictionaries and encyclopedias—directories. Finding and prospecting: geology, source, and accumulation—geophysics. Development and production. Transportation and storage. Refining, analysis, and testing of petroleum, natural gas, and their products: analysis and testing—refining and manufacture. Marketing and utilization of petroleum, natural gas, and their products: marketing—utilization. Economics and statistics. Legal: books relating generally to oil and gas law—books relating to oil and gas law of particular states or of restricted subject matter—signed articles, notes, and comments in legal periodicals, United States—unsigned articles, notes, and comments in legal periodicals, United States. Hearings, investigations, reports and findings of political nature by branches of Congress, departments, and bureaus of the government of the United States. Accounting and finance. Bibliographies, indexes, and lists of publications. Author index.

Note: A list of approximately 1400 items in English on petroleum and natural gas. Included are all titles for which copyrights have been issued as well as other items of general interest, references to articles, notes and comments relating to the subject appearing in legal periodicals published in the United States, and references to indexes, lists, bibliographies, and other sources of reference. Items dealing with patents or with geology of restricted areas, and available items found in the lists of publications of bureaus and departments of the United States government are not included. Information supplied for each item includes author, title, place, publisher, paging, and, where possible, price.

HEROLD, STANLEY CARROLLTON

Oil well drainage. Stanford University, Calif.: Stanford University Press, 1941. 407 p. illus. 26 cm. \$5.00. 4132

Contents: Introduction. Artificial reservoirs. Natural reservoirs. Reservoir energy. Function of gas. Radius and area. Regional drainage and water encroachment. Across property lines. Stratigraphy and structure. Reservoir penetration. Multiple zones. Rates of production. Field development. Wells of all or no gas. Injection. Content, ultimate recovery and reserves. Abandoned oil and gas. Curtailment, proration and conservation. Conclusion. Index.

Note: A book for geologists, engineers, landowners, leaseholders, and operators of producing oil and gas properties. The events and conditions within a producing reservoir are described, and the influence of well performance on the movement of the oil and gas is presented in simple terms. Analogies between artificial and natural reservoirs are considered, the nature of reservoir energy is discussed, and the function of gas in the production of oil is set forth.

LEVEN, DAVID D.

Petroleum encyclopedia, "Done in oil"; the cavalcade of the petroleum industry from a practical, economic and financial standpoint; history, past and present, sciences, drilling operations, production, transportation, refining, marketing, finance, investments, oil royalties, regulation of securities and securities markets, taxation, glossary. Edited and revised by Dr. Sylvain J. Pirson. Illustrative photography by Robert Yarnall Richie. New York, N.Y.: The Ranger Press, Inc., 1942. 1084 p. illus. 23 cm. \$10.00. 4133

Contents: The cavalcade of oil. Finding and producing the oil. Transporting, refining and marketing oil. Financing the oil industry. The oil royalty business. Index.

Note: A comprehensive manual of the petroleum industry, covering all phases of petroleum from the genesis of its geology to its marketing and utilization. In general, the approach is from the economic and business standpoint. Compared to the first edition published in 1941, this edition has corrections of errors and other minor textual changes. The first edition was entitled "Done in oil."

LEVORSEN, ARVILLE IRVING, EDITOR

Possible future oil provinces of the United States and Canada. Tulsa, Okla.: The American Association of Petroleum Geologists, 1941. 154 p. illus. 23 cm. \$1.50. 4134

Contents: Alaska. Western Canada. Pacific Coast states. Rocky Mountain region. Northern mid-continent states. West Texas. Eastern Canada. Eastern United States.

Note: These papers have been prepared by committees whose members are thoroughly acquainted with the geologic structures of the regions under discussion. The purpose of the symposium is to present a picture or inventory of the potential oil resources, which, on the basis of present-day knowledge, can be assumed to exist on the North American continent north of the Rio Grande. Each paper is complete in itself and in all cases selected bibliographies are provided.

LEVORSEN, ARVILLE IRVING, EDITOR

Report of a symposium on petroleum discovery methods, conducted by the Research Committee of the American Association of Petroleum Geologists, April 1, 1942, Cosmopolitan Hotel, Denver, Colorado. Tulsa, Okla.: The American Association of Petroleum Geologists, 1942. 164 p. 28 cm. \$1.00. 4135

Note: In January of 1942 the Research Committee of the American Association of Petroleum Geologists sent a form letter to over 500 of its members asking for a reply to the question "Which of the current methods . . . applied to oil exploration, do you regard as offering the most promise in maintaining an adequate oil and gas discovery rate in the foreseeable future?" Excerpts from the replies to the letter are collected in this volume, and presented without comment. In the majority of cases the letters are signed and arranged alphabetically under the name of the writer. There is no subject index.

LEVORSEN, ARVILLE IRVING, AND OTHERS, EDITORS

Stratigraphic type oil fields. Edited by A. I. Levorsen; assisted by N. Wood Bass, north mid-continent states; Ross L. Heaton, Rocky Mountain states; W. S. W. Kew, California; D. Perry Olcott, south mid-continent states; Theron Wasson, eastern states. Tulsa, Okla.: The American Association of Petroleum Geologists, 1941. 902 p. illus. 23 cm. \$5.50. 4135a

Contents: Foreword, by A. I. Levorsen. California: Edison oil field and vicinity, Kern county, Calif., by Everett C. Edwards. Kern Front oil field, Kern county, Calif., by Everett C. Edwards. Colorado: Greasewood oil field, Weld county, Colo., by Charles S. Lavington. Kansas: Bush City oil field, Anderson county, Kans., by Homer H. Charles. Chanute oil pool, Neosho county, Kans.—a water-flooding operation, by W. Reese Dillard, Donald P. Oak, and N. Wood Bass. Hugoton gas field, Grant, Haskell, Morton, Stevens, and Seward counties, Kans., and Texas county, Okla., by John L. Carlough and Garvin L. Taylor. Nikkel pool, McPherson and Harvey counties, Kans., by Arnold S. Bunte and Leo R. Fortier. Wherry pool, Rice county, Kans., by Harold E. McNeil. Zenith pool, Stafford county, Kansas—an example of stratigraphic trap accumulation, by W. C. Imbt. Kentucky: Big Sinking field, Lee county, Ky., by Louise Barton Freeman. Louisiana: Stratigraphic reservoirs in University oil field, East Baton Rouge parish, La., by Michel T. Halbouty. Michigan: Shoenstring

gas fields of Michigan, by Max W. Ball, T. J. Weaver, H. D. Crider, and Douglas S. Ball. Montana: Border-Red Coulee oil field, Toole county, Mont., and Alberta, Canada, by Charles E. Erdmann and John R. Schwabrow. Cut Bank oil and gas field, Glacier county, Mont., by John E. Blixt. Ohio: Lensing sands of Ohio, by E. V. O'Rourke. Oklahoma: Davenport field, Lincoln county, Okla., by Stanley B. White. Dora oil pool, Seminole county, Okla., by W. I. Ingham. East Tuskegee pool, Creek county, Okla., by Joseph L. Borden and Ralph A. Brant. Olympic pool, Hughes and Okfuskee counties, Okla., by W. Reese Dillard. Red Fork Shoestring sand pool, Pawnee, Creek, and Tulsa counties, northeastern Okla., by Randall Wright. Pennsylvania: Music Mountain oil pool, McKean county, Pa., by Charles R. Fettke. Types of stratigraphic oil pools in Venango sands of northwestern Pa., by R. E. Sherrill, P. A. Dickey, and L. S. Matteson. Texas: Bryson oil field, Jack county, Tex., by T. C. Hiestand. Cross Cut-Blake district, Brown county, Tex., by Edgar D. Klinger. Davis sand lens, Hardin field, Liberty county, Tex., by S. Russel Casey and Ralph B. Cantrell. East Texas oil field, Rusk, Cherokee, Smith, Gregg, and Upshur counties, Tex., by H. E. Minor and Marcus A. Hanna. Hitchcock field, Galveston county, Tex., showing stratigraphic accumulation and structure, by Michel T. Halbouty and Benjamin T. Simmons. Hull-Silk oil field, Archer county, Tex., by Edwin I. Thompson. Lopez oil field, Webb and Duval counties, Tex., by J. Boyd Best. Noodle Creek pool, Jones county, Tex., by H. W. Imholz. O'Hern field, Duval and Webb counties, Tex., by D. G. Barnett. "Sand belt" area of Ward and Winkler counties, Tex., and Lea county, New Mex., by R. L. Denham and W. E. Dougherty. Seymour pool, Baylor county, Tex., by James K. Murphy, Paul E. M. Purcell, and H. E. Barton. Walnut Bend pool, Cooke county, Tex., by William J. Hilseweck. West Virginia: Gas-Spencer-Richardson oil and gas trend, Jackson, Roane, and Calhoun counties, West Va., by E. T. Heck. Shinnston oil pool, Harrison county, West Va., by David B. Reger. Wyoming: Osage oil field, Weston county, Wyo., by C. E. Dobbin and J. C. Miller. Selected bibliography of articles describing stratigraphic type oil fields, by Helen Fowler Tuttle, Hollis D. Hedberg, Clayton Rasmussen, and A. I. Levorsen. Index.

Note: A collection of papers, with charts and diagrams, on the geology of stratigraphic type oil fields in various parts of the United States. The work is intended as a factual background for a further approach to the causes of oil and gas accumulation and as a guide to the prospecting and exploitation of future oil fields in the country. The extensive bibliography covers 27 pages.

LEY, HENRY A., EDITOR

Geology of natural gas. This book consists of thirty-eight papers prepared by forty-seven authors. Only two have been previously published. Here for the first time has been assembled a comprehensive geologic treatise of the occurrence of natural gas on the North American continent. Tulsa, Okla.: The American Association of Petroleum Geologists, 1935. 1227 p. illus. 23 cm. \$6.00. 4136

Contents (abridged): Natural gas in Alberta, by S. E. Slipper. Natural gas fields of Ontario, by R. B. Herkness. Natural gas in Quebec and the Maritime Provinces, by L. C. Snider and L. M. Farish. Natural gas resources of California, by Harold W. Hoots and Stanley C. Herold. Natural gas in Washington, Idaho, eastern Oregon, and northern Utah, by Virgil R. D. Kirkham. Natural gas in Montana, by John G. Bartram and Charles E. Erdmann. Natural gas in Colorado, northern New Mexico, and Utah, by Dean E. Winchester. Natural gas in eastern Kansas, by Henry A. Ley. Natural gas fields of Michigan, by R. B. Newcombe. Summary of geology of natural gas fields of New York and Pennsylvania, by Paul D. Torrey. Estimation of natural gas reserves, by P. McDonald Biddison. Index.

Note: These papers, dealing with the geology of the important gas fields on the North American continent, have been prepared by authors well acquainted with the particular region described. The material is factual, rather than theoretical, and records the present knowledge of geologic conditions in and adjacent to important gas-bearing areas. The regions discussed are: Alberta, Ontario, Quebec and the Maritime Provinces, California, Washington, Idaho, eastern Oregon and northern Utah, Montana, Wyoming, Colorado, New Mexico, Texas, Kansas, Arkansas and Oklahoma, Louisiana, Michigan, Indiana and Ohio, Mississippi, Kentucky, New York and Pennsylvania. The four final papers constitute an evaluation and estimation of natural gas reserves, and a discussion of the properties, uses, and consumption of natural gas. A brief abstract precedes each paper. There is a subject index.

PAINE, PAUL McCLARY

Oil property valuation. New York: John Wiley & Sons, Inc., 1942. 204 p. illus. 23 cm. \$2.75. 4137

Contents: The scope of valuation. Properties. Unproved lands. Oil and gas reserves. Elements in a valuation. Valuation methods. The examination and report. Index.

Note: Reviews the meaning and scope of valuation in the oil business, discusses the factors which enter into a valuation, and describes the methods of applying these factors. The object is to show the influences, rather than the mere amount of oil and gas available, which affect the value of a property.

PORTER, HOLLIS PAINE

Petroleum dictionary for office, field and factory. Second edition. Houston, Tex.: The Gulf Publishing Company, 1936. 253 p. 23 cm. \$3.00. 4137a

Note: A collection of about 3,000 words and phrases in common use in all phases of the petroleum industry, intended as a reference work for students of petroleum engineering and others who are employed or interested in the petroleum industry. The field covered includes not only the practical terms but also the technical words and terms used in the geology, chemistry, mechanics, electrical and civil engineering of the industry. The second edition is apparently a reprint of the first edition without noticeable change.

SHAW, SILAS FREDERICK

Gas-lift principles and practices. Houston, Tex.: Gulf Publishing Company, 1939. 156 p. illus. 22 cm. \$3.00. 4138

Contents: History and invention. General principles controlling gas-lift operations. Lifting efficiency. Lift and submergence. Pressure. The eductor. Straight, or continuous gas-lift. Combination gas-lift flow. Intermittent gas-lift flow. Compressor plant installations. Gas-lift practices in various fields. Gas-lift practice in Seminole. Gas-lift practice in Oklahoma City, Oklahoma. Gas-lift practice in various fields and countries.

Note: In this technical work the history and development of the process is discussed, and the fundamental principles that control the operation of the lift are emphasized. Data obtained from operations in the United States are presented. References are given at the end of most chapters. Diagrams and illustrations of the equipment are included.

TRASK, PARKER DAVIES, AND OTHERS

Origin and environment of source sediments of petroleum, by Parker D. Trask, assisted by Harald E. Hammar and C. C. Wu. Houston, Tex.: Printed by the Gulf Publishing Company, 1932. 323 p. illus. 23 cm. \$6.00. 4139

Contents: Introduction and acknowledgments. Collection and preparation of samples. Measurement of organic content. Distillation tests. Texture of sediments. Calcium carbonate content of sediment. Relation of organic matter to environment. Detailed analyses of organic constituents of sediments. Change in organic content with depth. Comparison of past and recent sediments. Miscellaneous results. Theoretical considerations. Summary. Appendix. Index.

Note: This volume presents a study of the conditions under which sediments, that in the future may be source beds of petroleum, are now accumulating. While the ultimate aim is to ascertain the characteristics of source beds of oil, the work deals almost entirely with recent deposits in which all the organic substances from which petroleum is formed are present. There is a detailed summary of the investigation of about 2000 samples of organic matter from various parts of the globe, and conclusions are based on an application of the statistical method. The appendix contains a table of general data on all samples giving location, latitude and longitude, depth of sample, geologic description, nitrogen and calcium carbonate content, and ignition loss, as well as other data.

TRASK, PARKER DAVIES, AND H. WHITMAN PATNODE

Source beds of petroleum. Report of investi-

gation supported jointly by the American Petroleum Institute and the Geological Survey of the United States Department of the Interior, from 1931 to 1941. Tulsa, Okla.: The American Association of Petroleum Geologists, 1942. 566 p. illus. 23 cm. \$4.50. 4140

Contents (abridged): List of references. Statistical methods. Samples. Methods of analysis. Regional studies: California. Rocky Mountain area. Mid-continent area. West Texas area. East Texas basin. Gulf Coast area. Appalachian area. Source beds. Summary. List of wells and analytical data. Index.

Note: This book is an attempt to determine diagnostic criteria for recognizing source beds of petroleum through the study of ancient deposits. It is presented in technical terminology and is intended for petroleum geologists. Bibliographies are included in the text.

UREN, LESTER CHARLES

Petroleum production engineering. Second edition. New York: McGraw-Hill Book Company, Inc., 1934-39. 2 v. illus. 23 cm. \$11.00. 4141

Contents (abridged): Volume I, Oil field development: Properties, occurrence and associations of petroleum. Petroleum exploration methods. Acquisition of title to oil lands. Drilling equipment and methods: general features. Rotary drilling equipment and methods. Casing, casing appliances and casing methods. Fishing tools and methods. Oil-field hydrology. Finishing the well. Well records. Index. Volume II, Oil field exploitation: Flowing wells and their control. Pneumatic pumping of oil wells. Mechanical devices for lifting oil from wells. Recovery. Secondary methods of oil recovery. Preliminary refining of petroleum: dehydration; separation of gas and suspended solids. Gathering, local storage and shipping of petroleum; gaging, sampling and testing of oil and gas. Transportation of oil and gas. Auxiliary plants and departments on the oil-producing property. Office methods and records. Index.

Note: A textbook for senior students of petroleum production engineering and a reference for practicing engineers covering the technology of the petroleum industry, including well-drilling, production, transportation, and storage. The text represents a revision of the author's one-volume work, *A textbook of petroleum production engineering*, New York: McGraw-Hill Book Company, Inc., 1924, and contains approximately twice as much material as the original book, incorporating the advance in technical knowledge and methods in the field from 1924 to 1939. Each volume is complete in itself and may be used as a separate text for its particular field.

WOODRING, WENDELL PHILLIPS, AND OTHERS

Geology of the Kettleman Hills oil field, California: stratigraphy, paleontology, and structure, by W. P. Woodring, Ralph Stewart, and R. W. Richards. Washington, D.C.: Government Printing Office, 1940. 170 p. illus. 23 cm. (United States Geological Survey. Professional paper 195) Paper, \$1.50. 4142

Contents: Introduction. Location and geographic features. Outline of stratigraphy. Stratigraphy of exposed formations. Sources of volcanic material in exposed formations. Paleontology of exposed formations. Age and correlation of exposed formations. Stratigraphy and paleontology of formations penetrated by wells and exposed nearby. Structure. Physiography. Fossil localities. Index.

Note: In addition to publishing material of immediate interest to oil operators in the Kettleman Hills, this report makes data available for investigations in oil geology in nearby regions. The stratigraphy is described in the order in which the formations are penetrated during drilling operations, beginning with the youngest formation. Lists of fossils under the heading of Stratigraphy of exposed formations show the geographic distribution of fossils collected from the different faunal zones and lithologic units, and are arranged systematically. There is a bibliography of 63 works dealing with the geology of the area and published between 1894 and 1939. A geologic map to the scale 1:31,680 is included, and there are about 40 plates of photographs of fossils.

ZABA, JOSEPH, AND W. T. DOHERTY

Practical petroleum engineers' handbook. Second edition revised and enlarged. Houston, Tex.: Gulf Publishing Company, 1939. 492 p. illus. 22 cm. \$5.00. 4142a

Contents (abridged): General engineering data. Steam. Power transmission. Tubular goods. Drilling. Production. Transportation. Index.

Note: A reference work for operators, engineers, superintendents, foremen, and others engaged in petroleum production and drilling. The tables, formulas, and figures shown are practical rather than theoretical in nature and are intended to fit the majority of conditions under which the average operator is working in the field. Fundamentals of mathematics, mechanics, and electricity are given in the first section of the book. Definitions, steam tables, excerpts from American Petroleum Institute specifications, design of shafting, working pressures, cementing operations, tubing data, gas lift and flow measurements, friction head, pump data, and related data are among the topics treated in the remaining sections. The second edition contains about 90 pages of new material covering changes made in specifications between 1937 and 1939, together with new formulas, tables, and charts. The book does not deal with the chemistry of petroleum or with refining processes.

Geophysical Prospecting

HEILAND, CARL AUGUST

Geophysical exploration. New York: Prentice-Hall, Inc., 1940. 1013 p. illus. 23 cm. (Prentice-Hall geology series, edited by N. E. A. Hinds) \$10.00. 4143

Contents (abridged): Introduction. Methods of geophysical exploration. Measurement procedures in geophysical exploration. Geophysical methods in oil exploration. Geophysical methods in mining. Applications of geophysics in engineering. Gravitational methods. Magnetic method. Seismic methods. Electrical methods. Geophysical well testing. Miscellaneous geophysical methods.

Note: A comprehensive survey of the entire field of geophysical exploration. The material is divided into two parts. The first part is aimed at competent readers desiring an insight into the working principles and geological applications of geophysical methods. It is intended for individuals in executive and geologic advisory capacity and for persons not directly concerned with field or laboratory operations. The second and major portion is written for the technical student of geophysics. It presents the subject from an engineering point of view and presents a discussion of theory, field technique, laboratory procedure, and geological interpretations. References are included.

JAKOSKY, JAY JOHN

Exploration geophysics. Fourth impression. Los Angeles, Calif.: Times-Mirror Press, 1940. 786 p. illus. 23 cm. \$8.00. 4144

Contents: Preface and acknowledgments. Introduction. Geologic and economic background of exploration geophysics. Magnetic methods. Gravitational methods. Electrical methods: Magneto-metric and inductive methods. Seismic methods. Geochemical methods. Geothermal methods. Drill hole investigations (bore hole methods). Physical principles applied to production problems. Common permit and trespass practices; insurance. Name index. Subject index.

Note: A description of the fundamental theories, equipment and field techniques of the recognized exploratory geophysical methods and their application to problems of economic geology. An attempt has been made to give full credit to the proper investigators for all original ideas and applications. Patent references and literature references are cited wherever possible. Each chapter has been reviewed, and in most cases revised, by someone experienced in the particular phase of the subject treated.

NETTLETON, LEWIS LOMAX

Geophysical prospecting for oil. New York: McGraw-Hill Book Company, Inc., 1940. 444 p. illus. 23 cm. \$5.00. 4145

Contents: Part I, Gravitational methods: Fundamental principles and units. Gravity of the earth. Direct gravity-measuring instruments. The reduction of gravity measurements. The Eotvos torsion balance. Gravity calculations and interpretation. Isostasy. Appendix I. Tables of normal gravity. Gravity terrain correction charts and tables. Part II, Magnetic method: Fundamental principles and units. Magnetism of the earth. Geomagnetic measuring instruments. Reduction of magnetometer observations. Magnetic calculations and interpretation. Part III, Seismic methods: Fundamental principles. Theory of refraction shooting. Reflection shooting. The reduction of seismic observations. Seismic apparatus. Seismic field operations and interpretation. Appendix: Derivation of equations for equal time circles. Part IV, Electrical and miscellaneous methods and measurements in drill holes: Electrical prospecting methods. Electrical well logging. Miscellaneous prospecting methods and operations in wells. Part V, Geophysical interpretation: Geophysical interpretation.

Note: The purpose of this book is to provide in a single volume a connected presentation of the principles and practice of modern oil prospecting by geophysical methods. Particular care has been taken to explain clearly the necessary procedures for reducing field measurements to usable form.

Various Minerals

AMERICAN SOCIETY FOR TESTING MATERIALS

Symposium on lime. Philadelphia: American Society for Testing Materials, 1940. 118 p. illus. 23 cm. Paper, \$1.25; cloth, \$1.50. 4146

Contents: Lime investigations—an introduction to the symposium on lime, by James R. Withrow. Variations in properties of dolomitic lime putties with methods of hydration, by John E. Conley. The hydration of magnesian lime and the autoclave test, by F. C. Welch. Manufacturing lime for the glass industry, by A. H. Nieman. Factors affecting milks of lime employed in industry, by D. E. Washburn. Quality of lime desired for water treatment, by Charles P. Hoover. Prevention of after-precipitation in lime-treated industrial and municipal waters by threshold treatment, by Owen Rice and others. Soil acidity and liming, by Elmer O. Fippin. Criteria for evaluation of agricultural ground limestone, by R. M. Salter and C. J. Schollenberger. Preliminary investigation of the determination of fluorine in lime, by C. J. Koehler. Fundamental mechanics of calcination and hydration of lime and methods of control, by Victor J. Azbe. Lime characteristics and their effect on construction, by Walter C. Voss.

Note: An extensive bibliography is given in Fippin's paper on soil acidity and liming and two other papers give short reference lists. The critical discussions following most of the papers contain further information on the subject.

BOERICKE, WILLIAM FAY

Prospecting and operating small gold placers. Second edition. New York: John Wiley & Sons, Inc., 1936. 144 p. illus. 19 cm. \$1.50. 4146a

Contents: Introduction. How placer deposits have been formed. Examining 'placer ground; hints on prospecting. Panning; properties of gold and black sands; estimating the value of colors. The rocker; its construction and operation. General information on sluicing. Sluice-box construction; the long-Tom. Types of riffles. Methods of working placer ground. Cleaning-up; recovery of fine gold from black sands; under-currents and similar devices. Use of mercury in placer mining; amalgamation; retorting. Dry placers. Placer mining machines. Location of placer mining claims; leasing; sale of placer gold; selling a placer property. Bibliography. Appendix. Index.

Note: Valuable information for the amateur as well as the more experienced placer miner. This second edition contains a number of important changes, chief among them being the revision of all statements as to the value of gravel and gold particles having a stated content in units of weight. The chapter on placer mining machines has been entirely rewritten with much material added, and descriptions of a few recent machines that have demonstrated their merit in the field are included. Diagrams and photographs are used liberally.

CONLEY, JOHN E., AND EVERETT P. PARTRIDGE

Potash salts from Texas-New Mexico polyhalite deposits; commercial possibilities, proposed technology, and pertinent salt-solution equilib-

ria. Washington, D.C.: Government Printing Office, 1944. 251 p. illus. 23 cm. (United States. Bureau of Mines. Bulletin 459) Paper, \$0.35.

4147

Contents: Introduction. Part I, Mining, crushing, calcination, and extraction of polyhalite for recovery of potassium salts: Mining of polyhalite. Crushing and grinding. Cold-water leaching for removal of sodium chloride from polyhalite. Processes for utilization of polyhalite. Calcination of washed polyhalite. Extraction and recovery processes. Summarized production and marketing costs. Part II, Pertinent factors controlling extraction and recovery of potassium and magnesium sulfate from polyhalite: Effect of calcination of polyhalite. Relation between calcination conditions and extraction behavior. Decomposition of syngenite. Removal of sodium chloride from crushed polyhalite. Evaporation and crystallization of polyhalite solutions. Appendixes.

Note: A study of the most important ranges of the salt systems involved and a laboratory analysis of 11 proposed processes for treatment to obtain pertinent data on rates of reaction, feasible concentrations of solutions, and possible recoveries. The primary objective of the research summarized in this paper is to aid in the development of methods for the commercial production of salable potash salts from the polyhalite deposits in the region indicated. There is a critical discussion of the unit steps of the various proposed processes and estimates of the probable cost of operation. Twenty-nine patents and 76 references are listed in the appendix.

DAVIS, CHARLES WESLEY, AND H. C. VACHER

Bentonite: its properties, mining, preparation, and utilization. Revised by John E. Conley. Washington, D.C.: Government Printing Office, 1940. 83 p. illus. 23 cm. (United States. Bureau of Mines. Technical paper no. 609) Paper, \$0.15. 4148

Contents: General geology. Deposits—mining and production. Investigation of properties. Identification and classification of commercial bentonites. Properties that determine the uses of bentonite. Present and proposed uses. United States patents relating to bentonite. Bibliography of references cited. Index.

Note: This paper is a revision of the Bureau's Technical paper no. 438, now out of print. It covers an investigation undertaken to add to the general information on the properties and uses of bentonite.

EMMONS, WILLIAM HARVEY

Gold deposits of the world, with a section on prospecting. New York: McGraw-Hill Book Company, Inc., 1937. 562 p. illus. 23 cm. \$6.00. 4149

Contents: Introduction. North America. South America. Europe. Asia. Africa. Australasia. Prospecting.

Note: Presents practicable descriptions of the geology of all the principal, and many of the lesser, gold-mining regions of the world. About 500 maps and geological cross sections show in general the intrusives with which the lodes are associated, the rocks older than the intrusives, and the rocks younger than the intrusives, and locate principal gold deposits.

GIVEN, IVAN A.

Mechanical loading of coal underground. New York: McGraw-Hill Book Company, Inc., 1943. 397 p. illus. 23 cm. \$4.00. 4150

Contents: Mechanical coal-loading principles. Mechanical coal-loading essentials. Types of mechanical-loading units, characteristics, crews, unit production—hand-loaded equipment. Types of mechanical-loading units, characteristics, crews, unit production—self-loading equipment. Slope-sinking and development with mechanical-loading equipment. Conveyor-mining plans. Scraper-mining plans. Mobile-loader mining plans. Face preparation. Power for mechanical loading. Maintenance in mechanical loading.

Note: This manual discusses the various types of mechanical loading equipment used in slope-sinking, entry-driving and development work, and in production of coal from the usual or regular working sections—details the methods suited to or used

with the different kinds of equipment and under various seam thicknesses and natural conditions, tells how machines are best installed, where they can fill in for other types of equipment, how they are used for biggest production.

HESSE, ALFRED W.

The principles of coal property valuation. New York: John Wiley & Sons, Inc., 1930. 183 p. illus. 19 cm. \$3.00. 4151

Contents: Virgin coal lands. Operating properties. Appraisals and valuations. Index.

Note: A guide for executives and engineers. The book covers in a very comprehensive way the whole field of coal property valuation from the undeveloped coal rights holding to properties equipped with modern devices for coal winning and preparation. Under the three main sections the book discusses: (1) geological examinations, topographical surveys, preliminary investigations as to the character of the coal seams, estimation of probable recoverable coal of commercial grade, accessibility of property to markets, including transportation facilities, methods of investigation to be followed; (2) valuation of equipment and consideration of its adaptability to the working conditions in the mine, costs of production and the effectiveness of mining systems followed, methods of preparation necessary in order to obtain markets and best prices; (3) financial factors entering into successful operation, with useful formulas and tables.

LANG, WALTER BARNES, AND OTHERS

Clay investigations in the southern states, 1934-35: reports by W. B. Lang, P. B. King, M. N. Bramlette, T. N. McVay, H. X. Bay, and A. C. Munyan. With an introduction by G. R. Mansfield. Projects conducted by the Geological Survey under grants from the Federal Emergency Administration of Public Works. Washington, D. C.: Government Printing Office, 1940. 346 p. illus. 23 cm. (United States. Geological Survey. Bulletin 901) Paper, \$1.00. 4152

Contents: Introduction, by G. R. Mansfield. The sedimentary kaolinitic clays of South Carolina, by W. B. Lang. The bleaching clays of South Carolina, by H. X. Bay. Clay deposits of the San Antonio area and Morris county, Texas, by P. B. King. Some bleaching and ceramic clays in western Tennessee and possible bleaching clays in Calloway county, Ky., by M. N. Bramlette. Some ceramic clays in Alabama, by M. N. Bramlette and T. N. McVay. Bleaching clays in Alabama, by M. N. Bramlette and others. A preliminary investigation of the bleaching clays of Mississippi, by H. X. Bay (abstract). The bleaching clays of Georgia, by H. X. Bay and A. C. Munyan. Preliminary investigation of Florida bleaching clays, by H. X. Bay and A. C. Munyan. Index.

Note: A collection of ten papers summarizing the results of investigations made by the Federal Geological Survey in 1934 and 1935 of the character, distribution, and quantity of some of the clay deposits of the southern states, including South Carolina, Texas, Kentucky, Tennessee, Alabama, Mississippi, Georgia, and Florida, and generally limited to certain belts or groups of beds known or suspected to contain bentonitic clays. Each paper reports tests of ceramic clays in terms of color, hardness, shrinkage, fired color, and fired condition and gives bleach ratings of raw and acid-treated samples of the bentonitic clays. The work as a whole directs the attention of engineers and other investigators to deposits which seem worth while from an economic viewpoint to prospect in detail.

LI, KUO-CH'IN, AND CHUNG YU WANG

Tungsten; its history, geology, ore-dressing, metallurgy, chemistry, analysis, applications, and economics. New York: Reinhold Publishing Corporation, 1943. 325 p. illus. (part col.) 23 cm. (American Chemical Society monograph series. No. 94) \$7.00. 4153

Contents: The history of tungsten. The geology of tungsten. The ore dressing of tungsten. The chemistry of tungsten. Analysis of tungsten. The industrial application of tungsten. Substitution of tungsten. The economics of tungsten. Appendix. Index.

Note: This over-all survey of tungsten is sufficiently technical for the needs of the chemist, engineer, and student, but it is also general enough in terminology and presentation for the layman. At the end of each chapter is a supplemental bibliography.

MITCHELL, DAVID RAY, EDITOR

Coal preparation. Sponsored by the Seeley W. Mudd Memorial Fund. New York: The American Institute of Mining and Metallurgical Engineers, 1943. 729 p. illus. 23 cm. (The Seeley W. Mudd series) \$6.00. 4153a

Contents: Foreword, by Advisory Editorial Board. Introduction, by David R. Mitchell. Economics of coal preparation, by J. B. Morrow and D. H. Davis. Characteristics of coal and its associated impurities, by H. F. Yancey, M. R. Geer and J. D. Davis. Sampling, by T. W. Guy. Use specifications for coal, by J. H. Kerrick, J. E. Tobey and David R. Mitchell. Screening, by Thomas Fraser and John S. Johnson. Breaking and crushing, by C. S. Jenkins and Homer W. Riley. Preparation at the face, by John D. Cooner and M. H. Forester. Hand picking, by D. H. Davis. Principles of gravity concentration, by B. D. Thomas. Coal washers of the classifier type, by John Griffen. Launder washers, by C. P. Proctor and J. T. Crawford. Jigs, by Byron M. Bird. Concentrating tables, by B. W. Gandrud. Dense-media processes, by B. M. Bird, David R. Mitchell and F. E. Smith. Pneumatic coal cleaning, by E. C. Carris. Froth flotation of coal, by C. P. Proctor and Clare B. Carlson. Miscellaneous processes, by David R. Mitchell and R. B. Hewes. Slurries, sludges, slimes and water treatment, by F. P. Lasseter, G. R. Gardner and E. A. Reilly. Dewatering and drying, by A. J. Rostovsky, Jr., and H. A. Baumann. Dedusting and dust collection, by Thomas L. Garwood and F. C. Menk. Treatment of coal surfaces, by Ralph A. Sherman and J. M. Pilcher. Plant operation and control, by J. S. Johnson and W. C. McCulloch. Loading, by David R. Mitchell and Thomas Fraser. Index.

Note: This volume contains papers on the handling and preparation of coal after it is mined and before it has reached the consumer. It stresses up-to-date methods and is intended to be useful both to those whose daily work is concerned with the preparation of coal and to those who use the product. The work was supervised by an Advisory Editorial Board, whose chairman was Howard N. Eavenson.

PARSONS, ARTHUR BARRETTE

The porphyry coppers. New York, 1933. 581 p. illus. 23 cm. (Rocky Mountain Fund series) \$5.00. 4154

Contents: An achievement of engineers. Varied utility of copper. Utah—the prospect. Utah—the mine. Morenci. Nevada Consolidated. Braden. Miami. Ray Consolidated. Chino. Inspiration. Chuquicamata. New Cornelia. Copper Queen. Andes. Geology. Prospecting and estimating ore. Power-shovel mining. Underground mining. Concentration. Smelting. Leaching. Building the West. Index.

Note: This monograph presents a history of the engineering and technologic achievements, during the period 1905-1933, in the mining, production, treatment, and processing of copper from porphyry mines in the southwestern United States and the Andean region of South America. The text is designed to appeal to both the technical and non-technical reader and contains valuable statistical data along with a narrative style of treatment. The contributions of individual engineers, production superintendents, and mine owners are outlined and there are descriptions of various technical processes.

ROSS, CLARENCE SAMUEL

Occurrence and origin of the titanium deposits of Nelson and Amherst counties, Virginia. Washington, D.C.: Government Printing Office, 1941. 59 p. illus. 29 cm. (United States. Geological Survey. Professional paper 198) Paper, \$0.25. 4155

Contents: Introduction. General geology. Petrography. Mineralogy. Origin of the rocks and minerals. Related titanium deposits. Physicochemical processes controlling mineralization. Index.

Note: The titanium deposits in the central part of Virginia, near the eastern base of the Blue Ridge, have long been the

world's principal source of rutile and contain large supplies of ilmenite. This paper describes these titanium deposits and the rocks associated with them and discusses their paragenesis. There are also briefer descriptions of related and similar deposits in Quebec and in Arkansas. Nineteen plates of photomicrographs are included, and bibliographic references are given in footnotes.

SCOTT, GEORGE STANLEY

Anthracite mine fires: their behavior and control. Washington, D.C.: Government Printing Office, 1944. 206 p. illus. 23 cm. (United States. Bureau of Mines. Bulletin 455) Paper, \$0.40.
4155a

Contents: Introduction. Acknowledgments. Oxidation of coal. Heating and cooling. Effect of oxidation on composition of coal. Composition of mine atmospheres and their significance in connection with fires. Miscellaneous data pertinent to fires. Rapid methods for determining relative heating tendencies. History of an anthracite mine fire. Bibliography. Index.

Note: This paper discusses what the chemist can and cannot

contribute as a member of the fire-fighting personnel in combating anthracite mine fires. There is a detailed physical, chemical, and mathematical analysis of the effects of temperature, oxidation, particle size, contact time, gas content, and other related factors in the development of ignition temperatures and combustion in coal mines. The bibliography of 411 titles covers American books and papers published up to 1944. Eighty-two photographs, charts, and diagrams are included.

TURRENTINE, JOHN WILLIAM

Potash in North America. New York: Reinhold Publishing Corporation, 1943. 186 p. illus. 23 cm. (American Chemical Society monograph series. No. 91) \$3.50.
4156

Contents (abridged): General introduction. Preface. Introduction: Fifteen years in review. The uses of potash in American industries. Technology of potash production. Conclusion. Index.

Note: This is a continuation of the author's *Potash: a review, estimate and forecast*, published in 1926. The aim of this non-technical book is to present the developments which have taken place economically and industrially from 1926 to 1942.

METALLURGY AND METALLOGRAPHY

General

AMERICAN SOCIETY FOR METALS

Controlled atmospheres. This book contains the papers and discussions constituting the symposium on controlled atmospheres presented before the twenty-third annual convention of the American Society for Metals held in Philadelphia, Penna., October 20 to 24, 1941. Cleveland: The American Society for Metals, 1942. 232 p. illus. 23 cm. \$4.00. 4156a

Contents: Fundamental features of controlled atmospheres, particularly for the heat treatment of steel, by H. W. Gillett and B. W. Conser. Chemical equilibrium as a guide in the control of furnace atmospheres, by J. B. Austin and M. J. Day. Prevention of oxidation type of reaction, ferrous metals, by A. G. Hotchkiss and H. M. Webber. Prevention of oxidation type of reaction in the heat treatment of copper and its alloys, by E. G. de Coriolis and Wm. Lehrer. Heat treatment of the chromium-carbon stainless steels, by W. E. Mahin and W. C. Troy. Methods for determining the degree of carburization or decarburization and evaluating controlled atmospheres, by Norbert K. Koebel. Surface effects accompanying the heating of carbon tool steel in oxidizing atmospheres, by R. D. Stout and Toivo Aho. Cost of controlled atmospheres—equipment, instruments and operating, by Edward E. Slowter. Atmospheric control in the heat treatment of aluminum products, by P. T. Stroup. Atmosphere control in the heat treatment of magnesium products, by C. E. Nelson.

Note: Although each of these papers is complete in itself, taken as a whole they constitute a practical and comprehensive guide to the use of controlled atmospheres in the heat treatment of metals. Included with each paper is an abstract and a discussion of its contents. In some cases there is a brief bibliography. There is no index.

AMERICAN SOCIETY FOR METALS

Metal—inside out, by A. W. Grosvenor [and others]. A series of six lectures prepared by members of the Philadelphia chapter of the American Society for Metals and presented before that chapter, January to March, 1940. Cleveland: The American Society for Metals, 1941. 115 p. illus. 23 cm. \$2.00. 4157

Contents: Basic architecture, by A. W. Grosvenor. Effects of alloying on architecture, by Frederick Seitz. Hardness, by W. J. Diederichs. Under the microscope, by L. E. Ekholm. Strength of metals, by F. B. Foley. Impurities in metals, by A. H. Staud.

Note: A series of lectures dealing with the fundamentals of metallic structures, with emphasis on their crystalline structure and nature of development. The manner in which the working and handling of metals affects their physical and structural characteristics is also discussed. Although intended for the metallurgist, the volume is not of too technical a nature to be beyond the grasp of the interested layman. An index covers all of the papers.

AMERICAN SOCIETY FOR METALS

National metals handbook. Cleveland: American Society for Metals, 1939. 1,803 p. illus. 18 cm. \$12.50. 4158

Contents (abridged): Structure, properties, and technology. Testing. Heat treatment. Welding of metals. Properties of iron and iron alloys. Shaping and forming of metals. Case hardening. Surface treatment. Constitution of aluminum alloys. Technology of aluminum. Bismuth alloys. Properties of cadmium and calcium. Constitution and properties of copper alloys. Lead alloys. Lithium. Magnesium and its alloys. Properties and micrography of nickel and its alloys. Properties and micrography of tin and its alloys. Technology of zinc and its alloys.

Note: An authoritative reference tool, for metallurgists, engineers and students, dealing with the manufacture, treatment, properties, testing, and applications of metals and their alloys. Each section or article was prepared by a specialist in the particular field, and includes, in most cases, a brief list of references. The material is made readily accessible by means of a detailed table of contents and an index.

AMERICAN SOCIETY FOR TESTING MATERIALS

Compilation of available high-temperature creep characteristics of metals and alloys. Compiled by Creep Data Section of Joint Research Committee on Effect of Temperature on the Properties of Metals. (Joint committee of A.S.M.E. and A.S.T.M.) Philadelphia: The American Society for Testing Materials, 1938. 848 p. illus. 28 cm. \$8.00. 4159

Note: A compilation of tables, charts, and characteristic curves representing all the data then available (1938) on the creep strength of certain types of steel at elevated temperatures, based on laboratory test results from 22 American and foreign organizations and universities. The material is divided into three major sections: wrought steels and ferrous alloys, cast steels and ferrous alloys, and non-ferrous materials. Each subdivision consists of tables describing the initial physical properties, chemical composition, manufacturing data, room temperature properties of specimens after creep tests, and creep characteristics, followed by logarithmic curves of stress vs. creep rate. Photomicrographs of specimens after test are given in most cases. A general discussion of the data is given in the Foreword. Litho-printed.

AMERICAN SOCIETY FOR TESTING MATERIALS

Impact resistance and tensile properties of metals at subatmospheric temperatures. Prepared by H. W. Gillett. Project no. 13 of the Joint A.S.M.E.-A.S.T.M. Research Committee on Effect of Temperature on the Properties of Metals. Philadelphia: The American Society for Testing Materials, 1941. 112 p. illus. 23 cm. Board, \$2.50. 4160

Contents: Impact resistance. Low-temperature impact data for non-ferrous materials. Low-temperature impact data for ferrous materials. Low-temperature tensile properties. General comment. Bibliography. Index.

Note: A collection of 142 tables of experimental data giving various physical properties of a wide variety of steels and other metals and alloys, presented in topical form and accompanied by discussion and references to literature. A long bibliography is included.

AMERICAN SOCIETY FOR TESTING MATERIALS

Symposium on radiography, held at the thirty-ninth annual meeting, Atlantic City, N.J.,

June 30-July 1, 1936, and forty-fifth annual meeting, Atlantic City, N.J., June 23, 1942. Philadelphia: The American Society for Testing Materials, 1943. 256 p. illus. 23 cm. \$4.00.

4160a

Contents (abridged): 1936 symposium papers: The principles of the radiographic process, by John T. Norton. Foundry applications of radiography, by Earnshaw Cook. Miscellaneous applications of radiography and fluoroscopy, by Herman E. Seemann. An introduction to gamma-ray radiography, by Norman L. Mochel. The problem of radiographic inspection, by H. H. Lester. 1942 symposium papers: Some applications of X-ray inspection to production problems, by Don M. McCutcheon. Radiography of welds and weldments, by R. E. Lorentz, Jr. Some calibration data and scatter measurements for the radiography of magnesium aircraft castings, by L. W. Ball. A correlation of the mechanical properties and radiographic appearance of magnesium alloy castings, by R. S. Busk. A million-volt portable radiographic X-ray unit, by E. E. Charlton and W. F. Westendorp. High-voltage X-rays in the boiler shop, by O. R. Carpenter. The gamma-ray radiography of welded high pressure power plant piping, by R. W. Emerson. An investigation of the apparatus used in radium radiography, by L. W. Ball and D. R. Draper. An exposure meter for X-ray radiography, by Herbert Friedman and Arthur L. Christenson. A study of cassette design for radiography of aircraft castings, by L. W. Ball. Equivalent penetrameters in radiographic testing, by Robert J. Schier and Gilbert E. Doan. Precision radiography, by Robert J. Schier and Gilbert E. Doan. X-ray film evolution, by Vance Danford.

Note: Many reproductions of radiographs illustrate these technical papers and several bibliographies are included.

AMERICAN SOCIETY FOR TESTING MATERIALS

Symposium on the significance of the hardness test of metals in relation to design. Philadelphia: The American Society for Testing Materials, 1943. 58 p. illus. 23 cm. Paper, \$0.75.

4161

Contents: Some notes on the indentation hardness test, by J. M. Lessells. Conversion tables. Selected bibliography. Present types of hardness tests, by S. R. Williams. Fundamentals of hardness testing, by S. L. Hoyt. General discussion. Tentative hardness conversion tables for steel.

Note: A collection of technical papers reprinted from the *Proceedings of the American Society for Testing Materials*, Volume 43, Philadelphia, 1943. The illustrations include photographs of equipment.

AMERICAN SOCIETY FOR TESTING MATERIALS

Symposium on significance of the tension test of metals in relation to design. Philadelphia: The American Society for Testing Materials, 1940. 108 p. illus. 22 cm. (Reprint from the American Society for Testing Materials. *Proceedings*, Vol. 40, 1940) Paper, \$0.75. 4162

Contents: Foreword, by John M. Lessells. The tension test, by C. W. MacGregor. The strength features of the tension test, by F. B. Seely. The limited significance of the ductility features of the tension test, by H. W. Gillett. Discussion on significance of the tension test.

Note: Bibliographies follow each of the technical papers in this symposium, which are also correlated in a critical discussion of thirty pages.

BARRETT, CHARLES SANBORN

Structure of metals, crystallographic methods, principles, and data. New York: McGraw-Hill Book Company, Inc., 1943. 567 p. illus. 23 cm. (Metallurgy and metallurgical engineering series; R. F. Mehl, consulting editor) \$6.00.

4163

Contents (abridged): The fundamentals of crystallography. X-rays. Diffraction of X-rays by crystals. The determination of crystal structure. The structure of metals and alloys. The elec-

tron theory of metals and alloys. The plastic deformation of metals and alloys. Theories of slip. The structure of cold-worked metal. Age hardening and transformation. Electron diffraction. Appendix: Crystal geometry. Emission and absorption wave lengths. Absorption coefficients. Reflecting planes of cubic crystals. The intensity of X-ray reflections. Determination of crystal structure with Fourier series. Crystal structure of the elements. International atomic weights. Physical constants and numerical factors.

Note: This volume is intended to serve both as a text in crystallography for students of metallurgy, and as a reference tool in the field of metallography. It offers a handy survey of the results of research, and contains numerous references to the literature of the subject. In an attempt to make the book more readable some of the advanced material on X-ray diffraction and various tables of data have been placed in the appendix. There is an index.

BATTELLE MEMORIAL INSTITUTE

Prevention of the failure of metals under repeated stress. New York: John Wiley & Sons, Inc., 1941. 273 p. illus. 23 cm. \$2.75. 4164

Contents (abridged): Failures under repeated stress. The local nature of the fatigue nucleus. Endurance strength—the S-N curve. Engineering use need not demand infinite life. The rotating-beam endurance test. Stress distribution. Polished vs. scratched specimens. Fillet radii. Square and V-notches, threads. Keyways and splines. Collars, clamping and press-fitting stresses. Welds. Riveted joints. Oil holes. Roughening of the surface by corrosion. Corrosion simultaneous with repeated stress. Protection against corrosion and, hence, against corrosion-fatigue. Combined notches and corrosion-fatigue. Surface layers and coatings. Inclusions. Grain direction and grain size. Internal stress. Hydrogen embrittlement. Severity of notches in hard steels. Springs, notches, and decarburization. Mitigation of stress concentration. Cold working. The inspection problem. Understressing. Overstressing. The damage line. Peak stresses due to high duty. Peak stresses from harmonic vibration. Crack propagation. Choice of material resistant to crack propagation. Appendices. Bibliography. Author index. Subject index.

Note: The purpose of this handbook is to compile and present the engineering principles involved in the precautions through which fatigue failures might be prevented. After considering the general nature of fatigue failures, the book discusses stress concentration caused by fillets, keyways, oilholes, corrosion, tool marks, work-hardened surfaces, notches, and internal stresses. Stress reversals, peak stresses and their effects are fully explained. The 23 appendixes give further details concerning crystallization, effect of temperature, geometric factors and the size effect, effect of cold work, effect of surface conditions and coatings, etc. A glossary is given, as well as over 400 references to special studies.

BRAY, JOHN LEIGHTON

Non-ferrous production metallurgy. New York: John Wiley & Sons, Inc., 1941. 430 p. illus. 23 cm. \$4.00. 4165

Contents: Introduction. Metals and ores. Slags and fluxes. Aluminum. Antimony. Arsenic. Beryllium. Bismuth. Cadmium. Chromium. Cobalt. Copper. Gold. Lead. Magnesium. Manganese. Mercury. Molybdenum. Nickel. Platinum. Selenium and tellurium. Silver. Tin. Tungsten. Vanadium. Zinc. Secondary metals. Marketing of bullion, ores and concentrates. Index.

Note: This book is essentially an outline of metallurgical processes and equipment, with stress on the chemical standpoint. Full economic and tariff discussions are included. Thermal data for reactions are given. Extensive lists of suggested references appear at the ends of chapters, to afford opportunity for further investigation. Simplified flow sheets are given, and uncompleted line drawings showing only the principal parts and dimensions. Discussion of operating details is reduced to a minimum. The statistical material is confined to tables on production and prices in important producing countries or significant years.

BRICK, ROBERT MAYNARD, AND ARTHUR PHILLIPS

Structure and properties of alloys; the application of phase diagrams to the interpretation and control of industrial alloy structures. New York: McGraw-Hill Book Company, Inc., 1942.

227 p. illus. 23 cm. (McGraw-Hill publications in metallurgy; R. F. Mehl, consulting editor) \$2.50. 4166

Contents: Requisite tools of the metallurgist. Commercially pure metals. Cold-working and annealing. Solid solutions: copper-nickel and other useful systems. Eutectic alloys: lead-antimony system; bearing metals. Age-hardening: cast and wrought aluminum alloys. Phase transformations: copper-zinc alloys. Iron-carbon alloys: normalized and annealed steels. Structural, cast and forged steels. Theory of heat treatment of steels. Heat-treated automotive and tool steels. Cast irons. Monometallic: sintered metal powders. Generalizations.

Note: This text seeks to establish the correlation among alloy phase diagrams, micro-structures, and properties. Especial attention has been directed to the effect of industrial practices in casting, working, and heat treating alloys on the application of, or departure from, theoretical principles. One hundred thirty-six photomicrographs, with full descriptions of their origins, illustrate normal and abnormal structures of the most standard alloys.

BRODE, WALLACE REED, AND BOURDON F. SCRIBNER

Report on standard samples for spectrographic analysis. Results of survey sponsored by War Metallurgy Committee of National Academy of Sciences, National Research Council. Philadelphia: American Society for Testing Materials, 1944. 21 p. 23 cm. Paper, \$0.75. 4167

Contents (abridged): Iron and steel. Aluminum and its alloys. Magnesium and its alloys. Copper, brass, and bronze. Tin, lead, and zinc alloys.

Note: A report giving the chemical analysis of various ferrous and non-ferrous metals, based on spectrographic studies made on samples issued by the National Bureau of Standards. The purpose is to disseminate information on available standard samples and encourage further development of samples to meet war production requirements.

BUTTS, ALLISON

Metallurgical problems. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 446 p. illus. 23 cm. (Metallurgy and metallurgical engineering series; R. F. Mehl, consulting editor) \$4.00. 4168

Contents: Quantities and units. The chemical equation. Combustion. Manufacture of coke and producer gas. Thermochemistry and thermodynamics. The iron blast furnace. The Bessemer, open-hearth, and electric steel processes. Production of blast and draft. The heat balance. Calculation of charges for smelting. Alloys. The mass law and chemical equilibrium in metallurgical reactions. Drying and calcining. Roasting and sintering. Copper smelting and converting. Electrolytic processes. Hydrometallurgy. Metallurgy of aluminum and magnesium. Volatilization of metals in melting. Metallurgy of lead. Transfer of heat. Distillation processes. Vapor pressure and temperature-pressure relations in chemical reactions. Thermodynamics of chemical reactions. Table. Index.

Note: Presents practical problems designed to accompany courses in metallurgy; outlines and gives examples of methods used in calculation; and supplies tables with the necessary data. A feature of the book is the bringing together in single problems of the applications of principles of chemistry, physics, and other subjects. It was formerly entitled *A Textbook of metallurgical problems*.

COONAN, FREDERICK LEO

Principles of physical metallurgy. New York: Harper & Brothers, 1943. 238 p. illus. 24 cm. \$3.25. 4169

Contents: Metals and the crystalline state. Equilibrium diagrams. Changes in the solid state. Brass. Bronze and bearings. Age hardening; light alloys. Iron-carbon alloys. Heat treatment of steel. Cast iron. Alloy steels. Tool steels. Corrosion. Corrosion-resistant steels. Welding. Index.

Note: A concise elementary text, primarily for college students.

The material is discussed under the three main headings of principles, non-ferrous alloys, alloys of iron and carbon. Industrial alloys are treated only in a general manner and topics of a controversial nature are not debated. Brief lists of references are given at the end of each chapter.

CURTIS, FRANK W.

High-frequency induction heating. New York: McGraw-Hill Book Company, Inc., 1944. 235 p. illus. 22 cm. \$2.75. 4169a

Contents: Principles of induction heating. Types of induction-heating equipment. Design of induction-heating coils. Brazing, soldering, and joining. Hardening and heat-treatment. Fixtures for induction heating. Miscellaneous induction-heating applications. Designing for induction heating. Dielectric heating. Index.

Note: This book is designed to provide the practical user with information on the application of high-frequency induction heating equipment to the heating of metal parts in such operations as hardening, heat-treating, brazing, annealing, and forging. Information on electrical theory and characteristics is incorporated only incidentally.

DOAN, GILBERT EVERETT, AND ELBERT M. MAHLA

The principles of physical metallurgy. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 388 p. illus. 23 cm. (Metallurgical texts) \$3.50. 4170

Contents: Part I, The physics of metals: The states of aggregation. The properties of metals. Their change with temperature. The mechanical properties of metals. Their change with temperature. Part II, Metallography: The constitution of binary alloys. The phase rule. Non-equilibrium structures in binary alloys. Quenching. Aging. The structures of ternary alloys. The properties of alloys. Part III, Metal technology: The shaping of metals. The heat treatment and surface treatment of metals. The testing of metals. Some commercial alloys, processes and problems.

Note: Approaching the subject from the standpoint of classical physical chemistry and physics, beginning with the states of aggregation, this text presents a coherent and organically unified account of the behavior of metals under the influence of the operations which are performed upon them in the metal fabricating and manufacturing industries. Bibliographies are included.

DOWDELL, RALPH LEWIS, AND OTHERS

General metallography, by Ralph L. Dowdell, Henry S. Jerabek, Arthur C. Forsyth, and Carrie H. Green. New York: John Wiley & Sons, Inc., 1943. 292 p. illus. 23 cm. \$3.25. 4171

Contents: Introduction. Crystallization and crystal structure. Alloy systems and constitution diagrams. Classification of constitution diagrams. Pyrometry. Mechanical properties. Metallographic control. Cold working, plastic deformation, strain hardening. Iron and steel. Nonferrous metals and alloys. Corrosion. Appendix. Index.

Note: For beginners in the field of metallography. This book covers, in detailed but compact style, the principles governing the behavior of ferrous and nonferrous metals and alloys, their properties, structures, and conduct when processed and subjected to heat. It gives in clear, concrete terms the characteristics of important commercial alloys. Tables of physical and mechanical properties of metals and alloys have been presented for instant reference. Many of the tables are taken from the American Society for Metals, *Metals handbook*, Cleveland, 1939. Diagrams and illustrations, among them photomicrographs of typical metallic structures, are included.

EVERHART, JOHN LAURENCE, AND OTHERS

Mechanical properties of metals and alloys, by John L. Everhart, W. Earl Lindlieff, James Kanegis, Pearl G. Weissler, and Frieda Siegel. Washington, D.C.: Government Printing Office, 1943. 481 p. illus. 27 cm. (United States. Bureau of Standards. Circular C447) \$1.50. 4171a

Contents: Introduction. Selection of the data. Organization of the data. Definitions and discussion. Aluminum and aluminum alloys. Copper and copper alloys. Iron and steel. Lead and lead alloys. Magnesium and magnesium alloys. Nickel and nickel alloys. Tin and tin alloys. Zinc and zinc alloys. Miscellaneous metals and alloys. Appendix. References. Index.

Note: A compilation of data presented in tabular or graphic form compiled originally to answer questions pertaining to properties of metals and alloys received at the National Bureau of Standards. The present edition is based on the Bureau's Circular C101, the second edition of which was published in 1924. The present edition contains additional data on the properties of metals at high and low temperatures, on electrical and thermal conductivities, and on thermal expansion in connection with welding problems. Also, the tables have been rearranged to facilitate the location of data on specific alloys. The bibliography contains 724 numbered items. The text is keyed to it to indicate the sources of the data.

FRIER, WILLIAM T.

Elementary metallurgy. New York: McGraw-Hill Book Company, Inc., 1942. 207 p. illus. 21 cm. \$1.75. 4172

Contents: Iron. Other refining processes. Cast and wrought iron. Methods of forming metals. Constitution diagrams of alloys. The iron-iron carbide system. Heat-treatment of steel. Grain structure of metals. Alloy steels. Nonferrous alloys. Testing of metals.

Note: Intended for a short course which will give students who have had no previous knowledge of the subject an opportunity to learn the characteristics of metals and the laws which govern them. The microstructure of metal is emphasized throughout the text with regard to the effect of rolling and forging, casting, heat treating, etc. All theories of hardening and of the control of hardness of all metals, ferrous and nonferrous, have been summarized under one head, i.e., strained, abnormal, atomic arrangement.

HAYWARD, CARLE REED

An outline of metallurgical practice. Second edition. New York: D. Van Nostrand Company, Inc., 1940. 690 p. illus. 23 cm. \$7.50. 4173

Contents: Copper. Lead. Zinc. Aluminum. Nickel. Tin. Mercury. Antimony. Arsenic. Bismuth. Cadmium. Cobalt. Magnesium. Beryllium. Gold. Silver. Platinum. Chromium. Tungsten. Manganese. Vanadium. Molybdenum. Zirconium. Iron and steel. Non-ferrous alloys. Index.

Note: This college textbook covers the methods of extracting the metals from their ores. Each metal of economic importance is discussed separately, from the preliminary screening or crushing of the crude ore as it comes from the mine to the final steps in the refining of the metal. Photographs show the various operations and processes, and flow sheets teach the student the integration of these processes into complete production plants. In this edition the text and illustrations have been revised, the chapter on non-ferrous alloys has been enlarged, the equilibrium diagrams brought up to date, and new chapters added on zirconium and beryllium.

HEYER, ROBERT HARRY

Engineering physical metallurgy. New York: D. Van Nostrand Company, Inc., 1939. 549 p. illus. 23 cm. \$4.50. 4174

Contents: Pure metals. Principles of alloying. White metal bearing alloys. Light alloys. Die castings. Copper and its alloys. Irons and carbon steels. Heat treatment of steel. Low and medium alloy steels. Surface treatment of steel. Steel castings. Welding. Cast iron. High alloy irons and steels. Tool steels.

Note: This college textbook explains the application of metallurgical principles in the production of alloys, in their processing, and in their various uses in engineering. This fundamental knowledge is explained with many practical examples to show the student the direct application of metallurgical principles to the choice, or even the formulation, of an alloy for a specific engineering purpose, and the various steps in heat treatment and other methods of processing which are necessary in its preparation.

HOYT, SAMUEL LESLIE

Metals and alloys data book. New York: Rein-

hold Publishing Corporation, 1943. 334 p. illus. 26 cm. \$4.75. 4175

Contents: Preface. Test specimens. Hardness tests. The wrought steels. The cast steels. Stainless steels. The cast irons. Heat- and corrosion-resistant casting alloys. The non-ferrous alloys. Additional metals. General data. Index.

Note: A concise, detailed handbook designed expressly for metallurgists, engineers, and advanced students. The information is primarily in table and chart form with little textual material. As the data are given in varying units, conversion tables are included.

JOHNSON, CARL GUNNARD

Metallurgy. Chicago: American Technical Society, 1942. 262 p. illus. 21 cm. \$2.50. 4176

Contents: Properties of metals and tests to determine their uses. Chemical metallurgy. Producing iron and steel. Physical metallurgy. Shaping and forming metals. Commercially important nonferrous alloys. Copper and its alloys. Heat treatments for steel. Surface treatments. Alloy or special steels. Classification of steels. Powder metallurgy. Literature of metallurgy. Index.

Note: An introductory book presented in simple language for the layman, student, and untrained industrial worker. Although it is intended to cover metallurgy in general, physical metallurgy is emphasized. There are separate sections on surface treatments and the properties and classification of steels.

KEHL, GEORGE LOUIS

The principles of metallographic laboratory practice. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 453 p. illus. 23 cm. (Metallurgy and metallurgical engineering series; R. F. Mehl, consulting editor) \$4.00. 4177

Contents: Preface to the second edition. Preface to the first edition. Preparation of specimens for microscopic examination. Etching of specimens for microscopic examination. Metallurgical microscopes and photomicrography. The principles of photography. Macroscopic examination of metals. Hardness testing. Special metallurgical tests. The principles of pyrometry and pyrometric practice. Thermal analysis. Appendix. Index.

Note: A practical outline of the principles of metallographic laboratory practice. In this edition the latest manipulations and processes are described, and additional illustrations showing the effect of correct and incorrect techniques have been introduced. Such subjects as radiology and X-ray diffraction methods are not included. Several tables containing data on etching reagents, hardness numbers, thermoelectric and temperature equivalents have been added to the appendix. References are listed at the end of each chapter.

LIDDELL, DONALD MACY, AND GILBERT E. DOAN

The principles of metallurgy. New York: McGraw-Hill Book Company, Inc., 1933. 626 p. illus. 23 cm. (Metallurgical texts) \$5.50. 4177a

Contents: Introduction. Economic considerations in metallurgical processes. Materials consumed in metallurgy: Ores, slags and fluxes. Refractories and furnace linings. Fuels and their use. Air and water supply. Extractive processes and apparatus: Ore preparation for extraction processes. Pyrometallurgical processes of fire metallurgy. Hydrometallurgical apparatus. Briquetting and sampling. Dust and fume control. The measurement of temperature. Physical metallurgy: The metallic state. Alloys. Properties as related to structure. Technology of shaping metals. Other physicomettallurgical processes. Slags, bullion, matte, and speiss.

Note: The purpose of the authors is twofold: to give the engineering student not specializing in metallurgy a general survey of the subject, and to give the student studying metallurgy a proper foundation for his vocation. Emphasis is placed upon explanations of the basic nature of metallic substances, rather than upon descriptions of metals and alloys in most common use.

MATHEWSON, CHAMPION HERBERT, EDITOR

Modern uses of nonferrous metals, by F. M. Becket, J. O. Betterton, F. E. Carter [and

others]. Published for the Seeley W. Mudd Fund. New York: American Institute of Mining and Metallurgical Engineers, 1935. 427 p. illus. 21 cm. \$3.00. 4178

Contents (abridged): The new industrial development and exploitation of metals and alloys. Aluminum. Arsenic and antimony. Bismuth. Chromium. Cobalt. Copper. Gold. Lead. Magnesium. Miscellaneous alloy-forming elements: beryllium, calcium, cerium, lithium, manganese, titanium, vanadium, zirconium. Molybdenum. Nickel. The platinum metals. Quick-silver. Selenium and tellurium. Silver. Tantalum and columbian. Tin. Tungsten. Zinc and cadmium.

Note: Each of the twenty-one chapters of this book presents the industrial uses of one or more metals. The presentation is suitable for the layman and for technical men who are not specialists in metallurgy.

MERLUB-SOBEL, M.

Metals and alloys dictionary. Brooklyn, N.Y.: Chemical Publishing Company, Inc., 1944. 238 p. 23 cm. \$4.50. 4178a

Note: This dictionary includes metallurgical terms relating to American practice. It is intended for the use of lay workers as well as for the technologist. The definitions are listed in one alphabetical order. There are numerous cross-references but the definitions are on the whole rather brief, and the list of terms is selective rather than exhaustive.

MUNCHERYAN, H. RAND M.

Industrial radiology and related phenomena (X-rays, gamma rays, physical metallurgy, and magnetic inspection). Foreword by Mr. George E. Newton. Los Angeles, Calif.: Aircraft X-ray Laboratories, 1943. 539 p. illus. 23 cm. \$7.50, plus foreign postage. 4178b

Contents: Introduction. Dynamic currents. Direct and alternating currents. The X-ray apparatus. X-ray tubes. X-ray radiations. Making a radiograph. Photographic effects of X-rays. Diagnosis of radiographs. Metallurgical considerations. Photomicrographic technique. Important aircraft materials. Radiography with gamma rays. Magnetic inspection of materials. The atomic structure. Absorption of energy. Appendixes. Index.

Note: A text and reference book written primarily for laymen in the industrial field, particularly for inspectors, purchasing agents, foundry personnel, and engineers, who need to know the proper use of X-rays for industrial inspection. Included is a discussion of the fundamental principles of atomic theory and electricity, followed by a technical treatment of X-ray generation, apparatus, and applications, with specific illustrations of radiographs and photomicrographs of sound and defective materials. The work is adaptable as a classroom text in adult courses not requiring college-level prerequisites. Tables giving properties of various materials appear in the appendix.

NEWTON, JOSEPH

An introduction to metallurgy. New York: John Wiley & Sons, Inc., 1938. 537 p. illus. 24 cm. \$4.00. 4179

Contents: Introduction. Adaptive metallurgy: The structure of metals. The structure of alloys. The physical properties of metals and alloys. Shaping of metals and alloys. The heat-treatment of metals and alloys. The industrial metals and their alloys. Extractive metallurgy: The sources of metals. Ore dressing. Hydrometallurgy. Pyrometallurgy—chemical principles. Pyrometallurgy—heat. Pyrometallurgy—processes. Electrometallurgy. Sampling and related topics. Production of the industrial metals. Index.

Note: Two main purposes are served by this book: it gives a view of the entire field of metallurgy, and it acquaints the reader with the metallurgical idiom and gives him the vocabulary necessary for the understanding of specialized treatises on the various branches of metallurgy. It is an elementary study of principles, rather than practices. It considers these questions: What are metals and alloys? Where are the sources of the metals? How are these metals extracted?

PORTEVIN, ALBERT

Introduction to the study of heat treatment of metallurgical products. Cleveland, O.: Penton Publishing Co., 1939. 246 p. illus. 23 cm. \$5.00. 4179a

Contents: Foreword. Transformation points of steel. Experiments and examples. Preliminary treatment of steel. Experiments and examples. Phenomena and mechanism of steel quenching. Investigation of hardened steels. Quenching. Determination of hardening capacity of steel. Tempering quenched steels. Classification of industrial steels. Experiments and examples. Annealing. Malleabilization of cast irons. Heat treatment of light aluminum alloys. Heat treatment: general remarks. Index.

Note: An introductory textbook designed to set forth the fundamental knowledge and essential principles of the subject. Emphasis is placed upon experimental determinations and facts resulting from observation. To this end, some of the chapters are followed by chapters containing descriptions of experiments or manipulations that clarify and supplement the discussion. There are bibliographical footnotes.

PULSIFER, HARRY BRIDGMAN

Inspection of metals. Cleveland, O.: The American Society for Metals, 1941. 180 p. illus. 23 cm. \$1.50. 4180

Contents: Ideals in steel-making. Tests for composition. Surface inspection. Hardness testing. Tensile testing including shear. Soundness testing. Macrographic patterns. Microscopic structures and patterns. Grain size testing. Coatings and corrosion testing. Impact, fatigue and creep testing. Specifications. Non-ferrous metals testing. Welding of metals. Constitution and treatment of a metal and its alloys.

Note: An authoritative and concise volume intended for those learning to inspect metals and who have only a limited knowledge of metal-making practices. The various tests are enumerated, together with a description of testing techniques, and an explanation of how findings may be interpreted. A brief list of books for the reader requiring additional information is included. There is an index.

SACHS, GEORGE, AND KENT R. VAN HORN

Practical metallurgy; applied physical metallurgy and the industrial processing of ferrous and nonferrous metals and alloys. Cleveland, O.: American Society for Metals, 1940. 567 p. illus. 23 cm. \$5.00. 4181

Contents: The constitution of alloys. Grain structure of alloys and segregation. The crystal structure of metals and alloys. Phase changes in the solid state. Deformation and recrystallization. Residual stresses. Furnaces and general melting problems. Castings: production. Castings: mechanical properties. Castings: special casting alloys and methods. Ingots. Mechanical working fundamentals. Mechanical working: forging and extrusion. Mechanical working: drawing, straightening and fabricating. Heating, annealing and heat treatments. Heat treatment of steels. Heat treatment of nonferrous metals.

Note: The theory and practice of the making and shaping of commercial metals and alloys and the physico-chemical and physical relationships of metallurgy presented in a concise and simplified manner. One third of the volume deals with the general principles of physical metallurgy, while the remainder of the volume discusses the actual processes of metal and alloy manufacture. An appendix contains binary constitutional diagrams of commercially important ferrous and nonferrous alloys. The numerous footnotes constitute an extensive bibliography. There is an index.

ST. JOHN, ANCEL, AND HERBERT R. ISENBURGER

Industrial radiology; X-rays and gamma rays. Second edition. New York: John Wiley & Sons, Inc., 1943. 298 p. illus. 23 cm. \$4.00. 4181a

Contents: Introduction. The infancy of radiology. The history of industrial radiology. Nature and properties of X-rays. Influence of matter on X-rays. Influence of X-rays on matter. Production, detection, and recording of X-rays. X-ray generators. An installation for industrial radiography. Making a radiograph. Photographic procedure. Interpreting radiographs. Industrial fluoroscopy. Radiography of large castings and forgings. Radiog-

raphy of welded vessels and structures. Radiography of small objects. Some interesting examples. Radiography with gamma rays. Radiographic specifications and inspectors. Operating and cost data. Looking ahead. Appendixes: Radiographic rules. Tables. Charts. Bibliography. Index.

Note: This book discusses the examination, by means of X-rays and gamma-rays, of castings, forgings, welded joints, packaged materials, assemblies such as vacuum tubes and other industrial products. The subject matter is practical and intended for use by engineers. In this edition a large part of the new material concerns equipment and accessories, describing the latest developments and improvements in tools and technique. A completely new chapter on industrial fluoroscopy has been added. Three appendixes give useful charts and tables, including tables of X-ray and gamma-ray absorption coefficients, needle point sparking distances, recommended thicknesses of lead protection for various voltages and for radium, properties of commercially available radioactive materials, cost data, exposure charts for the radiography of aluminum, steel, and copper, and effects of intensifying screens on exposure time. The bibliography contains 1314 references.

SEITZ, FREDERICK

The physics of metals. New York: McGraw-Hill Book Company, Inc., 1943. 330 p. illus. 21 cm. (Metallurgy and metallurgical engineering series, R. F. Mehl, consulting editor) \$4.00. 4182

Contents: Atomic arrangements in metals. The periodic chart. Substitutional and interstitial alloys. The physical form of alloys. The elastic properties of crystals. The plastic properties of single crystals. The plastic properties of polycrystalline media. The plastic properties of alloys. Creep and secondary plastic effects. Internal friction. Rupture and fatigue. Diffusion in metals. The solubility of gases in metals. The properties of iron-carbon alloys. Introduction to the concepts of modern physics. The development of the electron theory of metals. The band theory of solids. The cohesion of solids. Alloys. The magnetic properties of metals. The electrical conductivity of metals.

Note: A non-mathematical treatment of the developments in the physics of metals that have taken place in recent years.

SISCO, FRANK THAYER

Modern metallurgy for engineers. New York, Chicago: Pitman Publishing Corporation, 1941. 426 p. illus. 23 cm. \$4.50. 4183

Contents: Metallurgy and engineering. The fundamental structure of metals and alloys. The manufacture of iron and steel. The composition of carbon and alloy steels. The constitution of steel. Fundamentals of heat treatment of steel. The operations of heat treatment. The significance of the static properties of metallic materials. The significance of the dynamic properties of metallic materials. Machinability, wear resistance and deep-drawing properties. Carbon steel as an engineering material. Gray cast iron and malleable cast iron. Low-alloy steels as engineering materials. High-alloy steels as engineering materials. Tool and die steels. Precipitation hardening and the constitution of non-ferrous alloys. Light alloys as engineering materials. Copper and copper-base alloys as engineering materials. Miscellaneous heavy non-ferrous alloys. Corrosion and corrosion resistance. The effect of temperature on the mechanical properties of ferrous and non-ferrous alloys. Questions. Suggested references for further reading. Index.

Note: In this text are essential data on the engineering properties of metallic materials, the variables affecting these properties and their significance to engineers. Relations between the constitution and structure and properties of materials are brought out in an elementary discussion of fundamental modern concepts of physical metallurgy. Intended as a refresher and handbook for mechanical, civil and mining engineers, and metallurgists.

STOUGHTON, BRADLEY, AND ALLISON BUTTS

Engineering metallurgy, a textbook for users of metals. Third edition. New York: McGraw-Hill Book Company, Inc., 1938. 525 p. illus. 23 cm. \$4.00. 4184

Contents: Introduction. Metals and other materials of construction. Metallurgical inspection and testing. Ores and ore treatment. The divisions of chemical metallurgy. Sizing and shaping metallic bodies. Welding and joining metallic bodies. The theory of alloys. Heat-treatment and the effect of heat on metallic

bodies. The properties and uses of the ferrous metals. Iron and steel. Processes for producing and refining iron and steel: their effects on properties. Properties and uses of common non-ferrous metals. Producing and refining non-ferrous metals; corrosion and its prevention. Application of metals in engineering service. Fuels and combustion. Pyrometry: The measurement of temperature in industrial operations. Appendixes. Index.

Note: Gives a well-rounded view of the entire subject, especially from the standpoint of the branches of engineering outside of metallurgical engineering. Thus the book covers the electrical, magnetic, and strength properties of metals; the corrosion resistance of metals; and the utilization of the various metals and alloys in engineering design in chemical and mining engineering. The third edition contains new material on inspection and testing of metals, alloy steels and aluminum alloys, distillation of zinc, and utilization of metallurgy in design.

VAN WERT, LELAND RUSSELL

An introduction to physical metallurgy. New York: McGraw-Hill Book Company, Inc., 1936. 272 p. illus. 23 cm. \$3.00. 4185

Contents: Introduction. What is a metal? The metals and their properties. The equilibrium diagram: the liquid=solid change. The equilibrium diagram: the solid=solid change. The microconstituents of alloys. The properties of alloys. The mechanical and thermal treatment of metals and alloys. Index.

Note: A textbook primarily for postgraduate engineering students and metallurgists, designed for those who intend to continue in the science as well as for those seeking only a general knowledge of the subject. The book deals with the structure of metals and their behavior under various conditions of stress and temperature, including a discussion of the composition and properties of alloys and the heat treatment of metals. While a fairly thorough knowledge of the fundamental physical sciences is assumed, the book may nevertheless be used in undergraduate courses as well as in postgraduate courses.

WILLIAMS, ROBERT SEATON, AND VICTOR O. HOMERBERG

Principles of metallography. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1939. 339 p. illus. 21 cm. (International chemical series, James F. Norris, consulting editor) \$3.50. 4186

Contents: The simple alloy diagram. The alloy diagram and its meaning. The plastic deformation and annealing of metals. The nonferrous alloys of technical importance. Iron and steel. The macroscopic examination of steel. Laboratory methods. Appendix. Index.

Note: This book is intended to meet the needs of those students of general science or engineering who do not intend to specialize in metallography, but who expect to use it in connection with professional work. Emphasis is laid on the applications of metallography rather than on the physico-chemical principles involved. In this edition, the chapter on plastic deformation of metals is new, and other important changes have been made.

WILLIAMS, SAMUEL ROBINSON

Hardness and hardness measurements. Cleveland, O.: The American Society for Metals, 1942. 558 p. illus. 23 cm. \$7.50. 4187

Contents: Theories and definitions of hardness. Atomic structure in relation to hardness. Underlying conditions in hardness measurements. Wear resistance in relation to hardness. Early, recent and modern scratch hardness methods. Early penetration hardness methods. Brinell and Rockwell hardness testing methods. Pyramidal indenter method of hardness testers. Elastic properties as a measure of hardness. Rebound methods of measuring hardness. Pendulum method of measuring hardness. Physical processes which occur at the point where a hardness test is made. Hardness tests on various non-metallic materials. Portable hardness testers. Correlation between hardness and the magnetic properties of solid matter. Magnetic methods of testing hardness. Hardness and magnetostriction. Electrical properties as a measure of mechanical hardness.

Note: The volume deals primarily with hardness of metals and will be of value to the metallurgist as a reference tool. There is a discussion of what is meant by hardness and how

it is brought about, followed by detailed descriptions of testing instruments, methods of operation, and interpretation of results. The 83-page bibliography will serve as a comprehensive guide to the literature of the subject. There is an index.

ZMESKAL, OTTO

Radiographic inspection of metals. New York: Harper and Brothers, 1943. 150 p. illus. 19 cm. \$2.75. 4187a

Contents: Introduction. The source of radiation. Equipment for industrial radiography. Fundamentals of radiographic practice, Part I. Fundamentals of radiographic practice, Part II. Applications. Glossary of terms. Selected references. Appendixes: Critical absorption wave-lengths (series), voltages required to excite characteristic radiations and most intense wave-length in beam so produced. Penetrimeters. Stereoscopic tube shifts. Minimum focus-film distance for gamma ray radiography. Index.

Note: A brief elementary textbook based on lectures given by the author at the Illinois Institute of Technology. An expert presentation of the principles and practice of the radiographic inspection of metals, fully illustrated with both drawings and photographs. It describes the production of X-rays and gamma rays, explains the operation of an X-ray tube, discusses equipment for radiography and for safeguarding personnel, presents in detail the fundamentals of radiographic practice, and discusses its applications, especially in the weld shop, the foundry, production radiography, and microradiography. It does not discuss the physical theory of X-rays.

Corrosion**EWING, SCOTT PRESTON**

Soil corrosion and pipe line protection. New York: American Gas Association, 1938. 277 p. illus. 24 cm. \$2.50. 4193

Contents: Preface. Pipe line systems of the United States. Soils and pipe line corrosion. The corrosion of pipe lines. Corrosion in distribution systems. Corrosion survey methods. Bituminous and related coating materials. Methods for applying coatings. The inspection of pipe, pipe lines and coatings. Relative performance of pipe coatings. Cathodic protection and electrolysis. Appendix: Tentative code for visual inspection of protective coatings on buried pipe. Instructions for making the pattern and conductance test. Index.

Note: A collection of information relating to the subject of the corrosion of underground piping systems and its prevention, compiled by sifting in an organized manner the vast amount of published information on the subject. It is intended for the use of engineers and operators of underground piping systems. Selected lists of references are appended to the chapters.

MCKAY, ROBERT JAMES, AND ROBERT WORTHINGTON

Corrosion resistance of metals and alloys. New York: Reinhold Publishing Corporation, 1936. 492 p. illus. 23 cm. (American Chemical Society monograph series. No. 71) \$7.00. 4194

Contents (abridged): Preface. Part I, General and theoretical: Introductory. The rate factors. Forms of corrosion. Corrosives. Metal corrosion properties. Part II, Corrosion behavior of specific metal and alloy groups: Introductory. Magnesium and its alloys. Aluminum and its alloys. Zinc and zinc coatings. Cadmium plate. Tin and tinplate. Lead. Iron and steel. Silicon-iron. Molybdenum alloys. Chromium alloys. Chromium plate. Nickel-iron alloys. Nickel. Nickel-copper alloys. Copper. High-copper alloys—brass, bronze, nickel silver. Author index. Subject index.

Note: Data on the rates and processes of corrosion are treated in detail, but in most cases no means of prevention is offered. The book is essentially technical, but still comprehensible to the layman with some chemical education. At the end of each chapter is an extensive bibliography.

SPELLER, FRANK NEWMAN

Corrosion, causes and prevention; an engineering problem. Second edition. New York:

McGraw-Hill Book Company, Inc., 1935. 694 p. illus. 23 cm. \$7.00. 4195

Contents: Part I, General principles: Introductory outline of the corrosion problem. Nature and mechanism of corrosion—theories of corrosion. Influence of methods of manufacture and treatment. Influence of factors internal to the metal—composition. Influence of factors external to the metal—classification of corrosion. Principles and methods of corrosion testing. Relative corrosion of ferrous metals. Part II: Preventive measures: Prevention of corrosion in atmosphere. Prevention of corrosion under water. Prevention of corrosion in closed water systems by removal of dissolved gases. Prevention of corrosion in high-pressure steam plants—boiler water treatment. Prevention of corrosion in steam and hot-water heating systems. Prevention of corrosion in chemical industries. Prevention of corrosion underground. Stray-current electrolysis. Appendix. Bibliography.

Note: A systematic presentation of information on the corrosion problem. Combines in one volume a thorough treatment of the theory of corrosion and a detailed description of developments in the prevention of corrosion. Deals particularly with the ferrous metals. Important among the new material in this edition is that on electrochemical theory of corrosion in the presence of water, soil corrosion and protective coatings for use under ground, economics of preventive measures, and practical applications of preventive measures.

Powder Metallurgy**AMERICAN SOCIETY FOR TESTING MATERIALS**

Symposium on powder metallurgy. Philadelphia: The American Society for Testing Materials, 1943. 55 p. illus. 23 cm. Paper, \$1.00. 4196

Contents: The fundamentals necessary to apply powder metallurgy, by Charles Hardy. The effect of pressure on the properties of compacts, by Clarence W. Balke. The influence of homogenization upon the physical properties of copper-nickel powder alloys, by Frederick N. Rhines and Russell A. Meussner. The effect of particle size on the shrinkage of metal compacts, by P. R. Kalischer. Alloy powders, by T. H. Lashar. Metal powder friction materials, by J. F. Kuznick. The hot pressing of metal powders, by W. N. Pratt.

Note: Brief technical papers which include results of original experimental research and references to the application of powder metallurgy to the mass production of machine parts.

BAEZA, WALTER J.

A course in powder metallurgy. New York: Reinhold Publishing Corporation, 1943. 212 p. illus. 23 cm. \$3.50. 4197

Contents: Introduction. History and modern developments. Production of metal powders. Powder specifications. Classification of particle size. Cohesion. Manufacturing problems and machines. The college course. Laboratory cost for the course in training. General instructions to students. The experiments, precautions and discussion of results. Index.

Note: This book gives a brief, semi-technical description of the practical technology of powder metallurgy. It is designed for use in connection with the organization of classes in this subject, and provides sufficient theoretical background to enable the student to acquire a firm grasp of fundamentals. Directions for laboratory experiments are included.

CONFERENCE ON POWDER METALLURGY, MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Powder metallurgy; papers presented at the 1940 and 1941 conferences on powder metallurgy held at the Massachusetts Institute of Technology; edited by John Wulff. Cleveland, Ohio: The American Society for Metals, 1942. 622 p. illus. 23 cm. \$7.50. 4198

Contents (abridged): Glossary of powder metallurgy, by the editor. Developments in metal powders and products, by H. E. Hall. Effect of time, temperature, and pressure upon the density of sintered metal powders, by F. C. Kelley. Powder production and classification, by Don O. Noel. Metallic catalysts,

by P. H. Emmett. Magnetic powders and production of cores for inductance coils, by Earle E. Schumacher. Determination of the surface area and the average particle size of finely divided metals by use of low temperature adsorption isotherms, by P. H. Emmett. The electron microscope as a metallurgical tool, by G. G. Harvey. Sintering furnaces, by H. M. Webber. Alloy steel from powders, by John Wulff. Manufacture of tungsten metal, by P. E. Wretblad. Cemented carbides, by E. W. Engle. Patent survey of powder metallurgy, by Anthony William Deller. Subject index.

Note: This volume contains 50 papers by specialists on almost as many aspects of powder metallurgy. Most of the papers are accompanied by bibliographies.

Iron and Steel

ALLEN, ROY MORRIS

The microscope in elementary cast iron metallurgy. Chicago: American Foundrymen's Association, 1939. 143 p. illus. 23 cm. \$3.00. 4199

Note: This volume is the outgrowth and expansion of a paper which appeared in the *Transactions* of the American Foundrymen's Association, vol. 39, p. 733-826, 1931. Not intended for the expert metallurgist, but for the small producer of cast iron who is unable to support a trained metallurgical staff, it outlines the underlying principles of the physical metallurgy of cast iron, and shows how to interpret what the microscope can show. The major portion of the book deals with the properties and structure of cast irons in relation to their methods of preparation, and the presence of various elements such as sulfur and phosphorus. There is a brief chapter on the use and interpretation of the cast iron equilibrium diagram. The final section describes the construction and operation of the microscope, its use in metallurgical work, and the technique of preparing samples of metals for examination.

AMERICAN FOUNDRYMEN'S ASSOCIATION. GRAY IRON DIVISION. ALLOY CAST IRONS COMMITTEE

Alloy cast irons, reviewed and revised by the Alloy Cast Irons Committee, Gray Iron Division, American Foundrymen's Association. Second edition. Chicago: American Foundrymen's Association, 1944. 282 p. illus. 23 cm. \$3.25. 4200

Contents: Metallurgical principles of the effects of alloying elements in cast iron. Effects of alloying additions on cast iron. Effects of alloys on the physical and mechanical properties of gray irons. Ladle inoculants. White and chilled iron castings. Heat treatment of alloy cast iron. Foundry practice for alloy cast irons. Specific applications of alloy cast irons. Index.

Note: A book covering the manufacture, uses, and properties of modern alloy cast irons, with extensive bibliographies. Elements discussed include aluminum, bismuth, carbon, chromium, cobalt, copper, magnesium, manganese, molybdenum, nickel, phosphorus, silicon, sodium, sulfur, titanium, tellurium, tungsten, vanadium and zirconium. The second edition not only revises and brings up to date the 1939 edition but also emphasizes methods of conserving alloys which the war emergency made necessary.

AMERICAN FOUNDRYMEN'S ASSOCIATION

Symposium on graphitization of white cast iron. Publication no. 42-46. Chicago: American Foundrymen's Association, 1942. 174 p. illus. 22 cm. Paper, \$3.00. 4200a

Contents: The principles of graphitization, by H. A. Schwartz. The suppression of graphitization by supercooling, by C. H. Junge. The effect of composition on the annealing of white cast iron, by W. C. McMillan. Periodic malleable annealing furnaces, by W. R. Bean and W. R. Jaeschke. Malleable annealing in the Dressler or tunnel-type kiln, by R. J. Anderson. Electric furnace annealing of malleable iron, by R. M. Cherry. Graphitization of arrested anneal malleable iron, by D. P. Forbes. Atmospheres and the annealing of malleable iron, by R. J. Cowan. Some effects of hydrogen on the time of malleabilization, by C. H. Lorig and M. L. Samuels. Temperature control of graphitizing furnaces, by J. H. Lansing. Metallographic changes during cooling between

the first and second stages of annealing, by H. A. Schwartz and C. H. Junge. The velocity of conversion of austenite to ferrite and cementite, by H. A. Schwartz and Martin K. Bennett.

Note: Papers presented at three annual conventions of the Association held in 1936, 1941, and 1942. A report of the discussion of the papers read at the 46th annual A.F.A. convention is also included.

AMERICAN FOUNDRYMEN'S ASSOCIATION

Symposium on malleable iron melting. Chicago: American Foundrymen's Association, 1943. 244 p. illus. 22 cm. \$3.00. 4201

Contents: Some principles of melting malleable iron, by H. A. Schwartz. Open-hearth furnace for production of malleable castings, by Leo J. Kelly. Cupola-electric furnace duplexing of malleable iron, by Charles Morrison. Control of powdered-coal-fired melting furnaces, by J. A. Durr. The cupola-air furnace duplex process for production of malleable cast iron, by F. J. Wurscher. Melting malleable iron with oil in the air furnace, by A. Van Lantschoot. Brackelsburg furnace melting of malleable iron, by W. Zégnik and Kenneth Mason. Melting cupola malleable iron, by H. W. Maack. Practical operating phases of melting, by J. H. Lansing. Malleable foundry refractory practice, by C. A. Brashares. Air-furnace cast iron, by Duncan P. Forbes. Thermal balances and fuel costs of malleable melting furnaces, by J. H. Hruska. Notes on the production of cupola malleable castings, by F. B. Riggan. Measuring and controlling pouring temperatures and fluidity, by Carl F. Joseph. Developments in melting malleable cast iron, by W. R. Bean.

Note: These technical papers present information on the current methods of design and production of malleable irons by various processes, including special application of silica brick in cupola linings, refractory practice for air furnace, acid-electric furnace, and open-hearth furnace, the advantages and disadvantages of the different types of furnaces, the effect of silicon and carbon on tensile properties, and other technical information. A report of the discussion is given after each paper.

AMERICAN FOUNDRYMEN'S ASSOCIATION

Symposium on steel castings, held at joint meeting of the American Foundrymen's Association and the American Society for Testing Materials, Atlantic City, N.J., June 21, 1932. Chicago: American Foundrymen's Association (with American Society for Testing Materials), 1932. 254 p. illus. 23 cm. \$0.50. 4202

Contents: General survey of the steel castings industry, by W. C. Hamilton. Statistical data on steel casting production in the United States, by G. P. Rogers. Notes on the design of steel castings, by F. A. Lorenz, Jr. Purchase requirements for steel castings, with notes on physical properties in test bars and in commercial castings, by R. A. Bull. Physical and mechanical properties of some well-known cast steels, by C. H. Lorig and C. E. Williams. Representative properties of cast medium pearlitic steels, by Fred Grotts. Castings of corrosion-resistant steels, by Jerome Strauss. Austenitic manganese steel castings, by John Howe Hall. Problems and practices in the heat treatment of steel castings, by A. W. Lorenz. Fusion welding as related to steel castings, by T. S. Quinn.

Note: The papers included in this symposium present information and data intended for producers and purchasers of steel castings, covering many of the physical properties of cast steel, its chemical composition, characteristics of various alloys, standard specifications and purchase requirements. A bibliography follows the Lorig and Williams paper, and a number of the papers are accompanied by a report of the discussion that followed their presentation.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS. IRON AND STEEL DIVISION. COMMITTEE ON PHYSICAL CHEMISTRY OF STEELMAKING

Basic open hearth steelmaking, by the Committee on Physical Chemistry of Steelmaking, Iron and Steel Division, A. I. M. E.; edited by the staff of Alloys of Iron Research and T. S. Washburn, B. M. Larsen, and J. S. Marsh; Frank

T. Sisco, consulting editor; sponsored by the Seeley W. Mudd Memorial Fund. New York: The American Institute of Mining and Metallurgical Engineers, 1944. 632 p. illus. 23 cm. (Seeley W. Mudd series) \$3.00; \$3.50 postpaid, foreign countries. 4203

Contents: Part I, Practice: Basic open-hearth furnaces, by H. K. Work and H. M. Banta. Survey of open-hearth operations, by T. S. Washburn. Open-hearth refractories, by R. B. Sosman. Raw materials, by T. L. Joseph and others. Slag-control methods, by F. M. Washburn and W. O. Philbrook. Charging and melting practice, by F. M. Washburn and others. Refining practice, by F. M. Washburn and others. Finishing and deoxidation practice, by Gilbert Soler and R. K. Kulp. Molds and pouring practice, by H. J. Sweeney and H. J. Wiegell. Ingot structure and segregation, by James W. Halley. Nonmetallic inclusions, by C. E. Sims. Effects of steelmaking practice upon the properties of steel, by R. S. Archer. Part II, Theory: Elements of physical chemistry, by John Chipman and Eric R. Jette. Thermochemistry of the open hearth, by B. M. Larsen and L. S. Darken. The physical chemistry of liquid steel, by John Chipman. The physical chemistry of slags, by F. M. Washburn and others. Kinetics of the open hearth, by B. M. Larsen. Index.

Note: This book treats steelmaking by the basic open-hearth process in a manner that will be useful to students, technicians, and operators. The chapters are arranged so that the operator may skip much of the theoretical part if he wishes. Each chapter, however, contains an explanation of the fundamentals relevant to its subject matter, presented in a form that should assist the reader in understanding the background of the underlying principles. A description of the physical act of steelmaking as presented in the chapters on practice is intended to clarify to the student the operation of the open-hearth process. The production of carbon and alloy steel, involving a careful technique in slag control and deoxidation, is described in considerable detail. There are references at the end of each chapter.

AMERICAN SOCIETY FOR METALS

Carburizing. This book contains the papers and discussions constituting the symposium on carburizing presented before the nineteenth annual convention of the American Society for Metals held in Atlantic City, N.J., October 18 to 22, 1937. Cleveland: The American Society for Metals, 1938. 339 p. illus. 23 cm. \$4.00. 4204

Contents: Review of some fundamentals of carburizing, by M. A. Grossmann. Theoretical discussion of action of solid carburizing agents, by H. W. McQuaid. Gaseous media for carburizing, by G. T. Williams. Factors governing selection of type of carburized case, by A. L. Boegehold and C. J. Tobin. Furnace atmospheres and decarburization, by J. A. Webber. Steels used in the carburizing process, by O. W. McMullan. Hardenability test for carburizing steel, by W. E. Jominy and A. L. Boegehold. Production carburizing, by E. F. Davis. Study of commercial carburizing containers, by R. W. Roush and A. C. Dames. Physical and chemical characteristics of carburizing compounds and their handling in production, by S. L. Widrig. Commercial gas carburizing, by L. D. Gable and E. S. Rowland. Light cases, by V. T. Malcolm. Liquid bath carburizing, by B. B. Beckwith.

Note: A comprehensive treatment of the subject of carburizing, from both the theoretical and practical sides. Each chapter is preceded by an abstract of its contents, and followed by a brief discussion. In most cases there is a bibliography at the end of the chapters. There is no index.

AMERICAN SOCIETY FOR METALS

Hardenability of alloy steels (medium and low alloy steels—up to 5% alloy). This book contains the papers and discussions constituting the symposium on the hardenability of alloy steels (up to 5% alloy) presented before the twentieth annual convention of the American Society for Metals held in Detroit, October 17 to 21, 1938. Cleveland: The American Society for Metals, 1939. 318 p. illus. 23 cm. \$3.50. 4205

Contents: Physics of hardenability, by R. F. Mehl. Hardenability tests, by W. E. Jominy. Effect of the silicon and aluminum addition on hardenability of commercial steels, by M. J. R. Morris and H. W. McQuaid. Hardenability, its relation to quenching, and some quantitative data, by M. A. Grossmann and others. Hardenability of low chromium steels, by Walter Crafts and J. L. Lamont. Transverse hardness tests of heat treated steels, by G. T. Williams. Hardenability and its designation, the hardenability line, by B. R. Queneau and W. H. Mayo. Hardenability of plain carbon steels, by J. L. Burns and G. C. Riegel. Hardenability in light sections, by G. V. Luerssen.

Note: These papers, prepared by men well versed in the practical and theoretical aspects of metallurgy, deal with the various phases of hardenability, for medium and low alloy steels. Each chapter is preceded by an abstract of the paper and followed by a brief discussion. Bibliographies are provided in a few instances. There is no index.

AMERICAN SOCIETY FOR METALS

Modern steels; manufacture, inspection, treatment and uses; a series of lectures organized by Pittsburgh Chapter, A. S. M.; edited by Ernest E. Thum. Cleveland: The American Society for Metals, 1939. 374 p. illus. 23 cm. \$3.50. 4206

Contents: Raw materials and production of pig iron, by M. W. Lightner. Steel making process, by M. W. Lightner. Steel pouring, by G. R. Fitterer. Hot working, by E. E. Thum. Inspection and testing of steel, by G. R. Fitterer. Metallography, by F. H. Allison. Heat treatment, by A. W. Demmler. Alloy steels, stainless steels, and tool steels, by J. P. Gill.

Note: This series of papers on the manufacture, inspection, treatment and use of modern steels, prepared by experts in the field, will be of interest to both the metallurgist and general reader. It is also intended for use as a college text and contains at the end of each section suggestions for additional reading, and exercises. There is an index.

AMERICAN SOCIETY FOR TESTING MATERIALS

Tables of data on chemical compositions, physical and mechanical properties of wrought corrosion-resisting and heat-resisting chromium and chromium-nickel steels, prepared by Russell Franks and Francis L. LaQue. Philadelphia: The American Society for Testing Materials, 1942. 43 p. illus. 22 cm. Paper, \$1.25. 4207

Note: These tables give data for the different steels in ready reference form for both the maker and user of the steels. Single figures rather than ranges have been used to describe the various properties. The data include such information as modulus of elasticity, density, specific resistance, thermal conductivity, tensile strength, yield point, impact resistance, and ductility, as well as chemical composition. Creep-strength curves and short-time high-temperature curves are also given.

BAIN, EDGAR COLLINS

Functions of the alloying elements in steel. Cleveland: American Society for Metals, 1939. 312 p. illus. 23 cm. \$4.00. 4208

Contents: Fundamental characteristics of steels. Alloying elements in unhardened steels. Effects of alloying elements in forming austenite. Effects of the elements in hardening steel. Effects of alloying elements in tempering.

Note: In this volume the author has undertaken to provide the reader with a knowledge of the common alloying elements and their basic functions in steel. He directs special attention toward the improvement of the mechanical properties of steel, and toward those alloy steels which are usually hardened and tempered. There is a detailed table of contents but no index.

BOYLSTON, HERBERT MELVILLE

An introduction to the metallurgy of iron and steel. Second edition. New York: John Wiley & Sons, Inc., 1936. 563 p. illus. 23 cm. \$5.00. 4209

Contents: The historical and economic background of the iron and steel industry. Chemical and physical principles. The raw materials of the iron industry. The blast furnace and the

manufacture of pig iron. The foundry. Wrought iron. Early steel-making processes. The Bessemer process. The open-hearth process. The electric furnace process. The manufacture of commercially pure iron. Ingots and ingot making. The mechanical treatment of steel. The composition, structure, and physical properties of iron and steel. The heat treatment of steel. Appendix. Index.

Note: A comprehensive outline of the fundamentals of iron and steel making, shaping, and treating. Detailed information required by the specialist is not given. In this edition statistical data have been extended and new processes described. Of particular note is the account of the Bracklesberg melting furnace for the foundry, the Byers-Aston process for wrought iron, and the use of molybdenum-tungsten high speed steel. Trends in the electric furnace industry are outlined.

BRAY, JOHN LEIGHTON

Ferrous production metallurgy. New York: John Wiley & Sons, Inc., 1942. 457 p. illus. 23 cm. \$4.00. 4210

Contents: History. Raw materials. The metal iron. The iron blast furnace. Wrought iron. Cementation and crucible processes. The Bessemer process. The basic open-hearth process. The acid open-hearth process. The electric furnace. Scrap. Ingots and ingot molds. Ferroalloys. Iron and steel industry in the United States. Index.

Note: This work confines itself solely to consideration of the means and methods of producing ferrous products, leaving their metallography, fabrication, and other aspects to special works on those subjects. The current processes are described in some detail, and the fundamental theories underlying them are presented. Excellent line drawings are used as illustrations. Bibliographic references accompany each chapter.

BUELL, WILLIAM C., JR.

The open-hearth furnace; its design, construction and practice. Cleveland, O.: The Penton Publishing Co., 1936-39. 3 v. illus. 23 cm. Vol. 1, o. p.; vols. 2-3, \$4.00 each. 4210a

Contents: Volume I: Introductory. Economics of the open-hearth furnace. Refractories for the open-hearth furnace. Thermal effects in refractories. Open-hearth furnace bottoms. Open-hearth furnace backwalls. Open-hearth furnace frontwalls. Roofs—their costs and thermal properties. Mechanics of the roof. Skew system. Buckstays—their design and selection. Index. Volume II: Introductory. Critical areas. Metallurgical factors affecting furnace design. Temperatures, fuel rates and fluid flow. Quantitative heat distribution and heat balance. Flow diagrams—their development and use. The bath of metal—its rating and development. Heat transfer to the open-hearth bath. Refractories for open-hearth furnace ends and throats. Layout of open-hearth furnace ends. Design of open-hearth furnace throats. Steel binding for open-hearth furnace ends. Index. Volume III: Introductory. Fluid flow in ancillary system. Typical slag pockets. Design of open-hearth slag pockets. Typical fantails. Design of open-hearth fantails. Typical regenerator chambers. Connecting flues. Design of open-hearth regenerator chambers. Distribution and flow of fluids in regenerator chambers. Checkerwork for open-hearth furnaces. Heat exchange in regenerators. Flues for open-hearth furnaces. Valves for open-hearth furnaces. Waste-heat boilers. Open-hearth furnace control. Flow diagrams. Conclusion. Subject index. Table index, Vols. I to III. Equation index, Vols. I to III. Illustration index, Vols. I to III.

Note: A practical treatment of this subject written from the viewpoint of engineers and metallurgists concerned with the design and operation of open-hearth furnaces. There are many drawings throughout the text that show actual construction details and dimensions of furnaces in operation. Citations to the literature of the subject are scant and are given only in footnote references.

BULLENS, DENISON KINGSLEY, AND OTHERS

Steel and its heat treatment, by D. K. Bullens and the metallurgical staff of the Battelle Memorial Institute. Fourth edition, rewritten and reset. New York: John Wiley & Sons, Inc., 1938-39. 2 v. illus. 23 cm. Vol. I, \$4.50; Vol. II, \$5.00. 4211

Contents (abridged): Volume I, Principles, processes, control: Metallurgical principles. Testing of steel. The structure of steel. General annealing practice. Spheroidizing. Normalizing and "austempering." Principles of hardening. Tempering and toughening. Grain size. Surface-reaction processes. Case carburizing. Controlled atmospheres. Cyaniding, nitriding, surface hardening, coating. Control of heat-treating operations. Sources of effective heat for heat-treating operations. Application of heat in heat treating. Control of the cooling phase. Index. Volume II, Engineering and special-purpose steels: Carbon steels. Phosphorus, sulphur, lead, and free-machining steels. Manganese constructional steels. Silicon steels. Copper steels. The plain nickel steels. The plain chromium steels. The assistant elements, aluminum, titanium, zirconium, vanadium, etc. Plain molybdenum and tungsten steels. S.A.E. steels and treatments. Engineering steels of more complex composition. Complex alloy steels based on ferrite formers. The nickel-chromium and similar families. Complex alloy steels based on carbide formers. Alloy steels for carburizing. Alloy steels for nitriding. Spring steels. Factors in the selection of constructional steels. The special-purpose steels. Steels for high- and low-temperature service. The austenitic steels. Carbon tool steels. High-speed tool steels. Permanent magnet steels and their heat treatment. Index.

Note: A treatise on technical practice for the practical man. In this edition, extensive revision and the addition of new material has resulted in a need for a second volume. Among the topics which did not appear in the previous edition or which were mentioned only briefly are: austempering, precipitation hardening, free-machining steels, spring steels, intermediate alloy tool and die steels. Extensive bibliographies are given at the end of each chapter.

CAMP, JAMES MCINTYRE, AND C. B. FRANCIS

The making, shaping and treating of steel. Rewritten by C. B. Francis. Fifth edition. Pittsburgh: Carnegie-Illinois Steel Corporation, 1940. 1440 p. illus. 23 cm. \$7.50. 4212

Contents (abridged): The making of steel: Fundamentals of physics, chemistry, metallurgy. Refractories. Iron ores. Fuels. Fluxes and slags. Manufacture of pig iron, wrought iron, and sponge iron. Uses. Early methods. The Bessemer process. The open-hearth process. The shaping of steel: Summary of methods. Casting. Mechanical treatment. Rolling-mill construction and operation. Blooms, billets, and slabs. Rolling of finished products. Circular shapes. Forging of axles, shafts, and other shapes. Composition and heat treatment of steel: Structural constituents. Heat treating theory and practice. Low-alloy high-strength structural steels. Medium, or pearlitic and ferritic, alloy steels. High-alloy steels. Tool and special alloy steels. Manufacture of steel wire, sheet, strip and tubular products: Gauges. Steel wire and steel wire products. Hot-rolled strip and sheet. Cold-rolled strip and cold-reduction mills. Protective coatings. Steel tubular products. Index.

Note: A comprehensive reference book on the major phases of the steel industry, for the steel and metallurgical engineer, the student, and the plant operator. There are detailed descriptions of modern plant construction and design, heating value of fuels, chemistry of the open-hearth and Bessemer processes, and the various types of electric furnaces in use. Tables of data give chemical composition of alloys, physical properties of standard high tensile structural steel, and other related data. The text is liberally illustrated with photomicrographs, photographs of equipment and processes, and numerous mechanical drawings and performance curves. There are references at the end of each chapter.

CAMPBELL, HARRY LINN

The working, heat treating, and welding of steel; supplemented with a series of laboratory assignments. Second edition. New York: John Wiley & Sons, Inc., 1940. 230 p. illus. 23 cm. \$2.25. 4213

Contents: The development of iron and steel products. The physical testing of steel. The chemical composition of steel. The classification of steel. The physical constitution of steel. The effects of temperature changes and mechanical working upon steel. Processes and equipment for working steel. Processes used in heat treating steel. Equipment used in heat treating steel. Alloy steels and their heat treatments. Processes and equipment for welding steel. The preservation of steel. Laboratory assignments. Index.

Note: This book is elementary in that it covers the subject broadly and has deliberately been made easy to read and to

understand. At the same time, details are handled authoritatively and competently. The appended bibliography and lists of reading make immediately available more detailed and extensive studies of the different aspects of metallurgy and heat treatment of steel. Improvements in the second edition include revision of the material on testing methods, the classification of steel, the physical constitution of steel, processes and equipment for working steel, the processes for heat treating steel, and welding processes.

CLEAVES, HAROLD EDWARD, AND J. G. THOMPSON

The metal—iron. New York: Published for the Engineering Foundation by McGraw-Hill Book Company, Inc., 1935. 574 p. illus. 23 cm. (Alloys of Iron Research. Monograph series) \$6.00.

4214

Contents: Part I, Preparation of high-purity iron: Laboratory production of electrolytic iron. Commercial production of electrolytic iron. Part II, The properties of high-purity iron: Introduction. Structure of high-purity iron. Thermal properties. Electric properties. Magnetic properties. Miscellaneous properties. Chemical properties. Mechanical properties. Heat treatment and aging. Effect of minor constituents. Condensed summary of the properties of iron. Bibliography. Name index. Subject index.

Note: An appraisal of the preparation and properties of high-purity iron. The first part contains a critical review of existing methods for the laboratory and commercial production of electrolytic iron and a summary of the production of carbonyl iron, high-purity iron for special purposes such as atomic-weight determinations and commercial ingot and sponge iron. In the second part is a critical summary of published and unpublished data on structure and properties.

ENOS, GEORGE MAGEE

Visual examination of steel. A series of three educational lectures presented to members of the American Society for Metals during the twenty-first National Metal Congress and Exposition, Chicago, Illinois, October 23 to 27, 1939. Cleveland: The American Society for Metals, 1940. 123 p. illus. (part col.) 23 cm. \$2.00.

4215

Contents: Surface of metals. Study and photography of rough surfaces at low magnifications. Fractures. Macro etching. Contact etching and printing, and other tests.

Note: This small volume is concerned primarily with one phase of metallographic technique, namely macroscopic examination in which the magnification is less than 30 diameters. Similar to J. R. Vilella's book *Metallographic technique for steel* (see Index), the author has discussed good and poor techniques and their effect on the conclusions of the examiner. Numerous photographs illustrate the various defects which occur in steel. There is a brief bibliography and an index.

EPSTEIN, SAMUEL, AND FRANK T. SISCO

The alloys of iron and carbon. New York: Published for the Engineering Foundation by the McGraw-Hill Book Company, Inc., 1936-37. 2 v. illus. 23 cm. (Alloys of Iron Research. Monograph series. F. T. Sisco, editor) Vol. I, \$5.00; Vol. II, \$8.00.

4216

Contents (abridged): Volume I: Preface. Acknowledgments. Iron-carbon alloys. General features of the iron-iron carbide diagram. Arrested transformations, principles underlying hardening. Changes on tempering iron-carbon alloys. The structure of iron and steel. Operations of quenching, tempering, and carburizing. Factors affecting the quality of commercial iron-carbon alloys. Bibliography. Name index. Subject index. Volume II: Preface. Acknowledgments. Mechanical properties of cast steels. Mechanical properties of hot-worked carbon steels. Mechanical properties of cold-worked carbon steels. Mechanical properties of heat-treated carbon steels. Effect of cross-section and other variables on mechanical properties. The

mechanical properties of cast iron. Malleable cast iron. Behavior of iron-carbon alloys under repeated stress. Effect of temperature on properties. The corrosion of commercial iron-carbon alloys. Electric and magnetic properties of commercial iron-carbon alloys. Miscellaneous engineering properties of commercial iron-carbon alloys. Bibliography. Name index. Subject index.

Note: Volume I of this work is by Epstein, and Volume II, by Sisco. The work is part of a series issued by the Engineering Foundation as a critical summary of research on iron and its alloys as reported in the technical literature of the world. The first volume contains a presentation of data on the constitution and heat treatment of the alloys of iron and carbon, the so-called "plain carbon" steels and cast irons, including factual data and theoretical discussion. The second volume deals with the mechanical, chemical, and other engineering properties of commercial iron-carbon alloys, including laboratory methods of testing. Intended as a foundation for further research as well as a summary of information for the practical metallurgist, steel worker, foundryman, and engineer. The other volumes in this series, listed below, are similar in scope and purpose, dealing with other alloys of iron, such as silicon, copper, molybdenum, nickel, and chromium, and outlining the physical and chemical properties of each, with emphasis on their industrial importance. Each volume contains an extensive bibliography in addition to numerous data tables.

FRENCH, HERBERT JAMES

Alloy constructional steels, with a section on corrosion in collaboration with Francis L. LaQue. A series of five educational lectures on alloy constructional steels presented to members of the American Society for Metals at the fourth Western Metal Congress and Exposition, Los Angeles, May 19 to 23, 1941. Cleveland: The American Society for Metals, 1942. 294 p. illus. 23 cm. \$4.00.

4217

Contents: Unhardened steels. Quenching and tempering of alloy steels. Heat treated steels. Service at sub-atmospheric temperatures. Service at elevated temperatures. Wear. Corrosion. Processing and special treatments. S.A.E. steel specifications. A.I.S.I. steel specifications. Cross section hardenability.

Note: The purpose of this volume is to provide information which will assist the engineer in the selection of steels for constructional purposes and to illustrate the importance of alloy steels in this field. The manufacture and properties of alloy steels are described, together with a discussion of their specialized uses. There are separate subject and author indexes.

GREGG, JAMES LAWRENCE, AND B. N. DANILOFF

The alloys of iron and copper. New York: Published for the Engineering Foundation by the McGraw-Hill Book Company, Inc., 1934. 454 p. illus. 23 cm. (Alloys of Iron Research. Monograph series. Frank T. Sisco, editor) \$5.00.

4218

Contents: Introduction. Constitution of iron-copper alloys. Constitution of iron-copper-carbon alloys. Melting and working of copper irons and steels. Effect of copper on characteristics and physical properties of iron and steel. Precipitation hardening of copper steels. Mechanical properties of iron-copper alloys, copper-bearing wrought iron, and cast steel. Mechanical properties of wrought copper steels. Corrosion resistance of copper steel and iron. Copper in cast iron. Copper in complex steels and other alloys. Copper-rich alloys. Bibliography. Name and subject indexes.

Note: See note under Epstein and Sisco, *The alloys of iron and carbon* listed above.

GREGG, JAMES LAWRENCE

The alloys of iron and molybdenum. New York: Published for the Engineering Foundation by McGraw-Hill Book Company, Inc., 1932. 507 p. illus. 23 cm. (Alloys of Iron Research. Monograph series. Frank T. Sisco, editor) \$5.00.

search. Monograph series. Frank T. Sisco, editor) \$6.00. 4219

Contents: Introduction. Iron-molybdenum alloys. Constitution and manufacture. Metallography and physical properties of molybdenum steel. Properties and uses of molybdenum steel. Molybdenum cast iron. Chromium-molybdenum steel. Nickel-molybdenum and nickel-chromium-molybdenum steels. Molybdenum in high-speed steels. Molybdenum in nitriding steels. Other iron-molybdenum alloys. Appendix—The iron-carbon-molybdenum system. Name and subject indexes.

Note: See note under Epstein and Sisco, *The alloys of iron and carbon* listed above.

GREGG, JAMES LAWRENCE

The alloys of iron and tungsten. New York: Published for the Engineering Foundation by the McGraw-Hill Book Company, Inc., 1934. 511 p. illus. 23 cm. (Alloys of Iron Research. Monograph series. Frank T. Sisco, editor) \$6.00. 4220

Contents: Introduction. Constitution of iron-tungsten alloys. Preparation and properties of iron-tungsten alloys. Iron-carbon and tungsten-carbon alloys. Constitution of iron-tungsten-carbon alloys. Manufacture of tungsten steels. Characteristics of tungsten steels. Mechanical properties of tungsten steels. Tungsten magnet steels. Tungsten in cast iron and steel. Tungsten in tool and die steels. Development of high-speed steels. The nature of high-speed steel. Cutting properties of high-speed steels. Other properties of high-speed steels. Miscellaneous alloys containing tungsten. Bibliography. Name and subject indexes.

Note: See note under Epstein and Sisco, *The alloys of iron and carbon* listed above.

GREINER, EARL SHIRK, AND OTHERS

The alloys of iron and silicon, by Earl S. Greiner, J. S. Marsh and Bradley Stoughton. New York: Published for the Engineering Foundation by the McGraw-Hill Book Company, Inc., 1933. 457 p. illus. 23 cm. (Alloys of Iron Research. Monograph series. Frank T. Sisco, editor) \$5.00. 4221

Contents: Introduction. High-purity silicon, high-purity iron, ferrosilicon. Constitution of iron-silicon alloys. The diagram. Constitution of the iron-silicon alloys: compounds, transformations, and structure. Properties of iron-silicon alloys. Constitution of iron-silicon alloys: discussion. The iron-carbon-silicon system. Constitution of alloys containing iron, carbon, and silicon. Silicon and silicon manganese steels:—manufacture; mechanical properties of structural grades. Silicon and silicon-manganese steel: *ii*—spring steels; miscellaneous mechanical properties; corrosion. Complex steels containing silicon as an alloy. High-silicon corrosion-resistant iron. Special properties. Electric and magnetic properties of silicon steel sheet—general. Electric and magnetic properties of silicon steel sheet—special. Summary of the alloys of iron and silicon. Appendix. Bibliography. Name and subject indexes.

Note: See note under Epstein and Sisco, *The alloys of iron and carbon* listed above.

GROSSMANN, MARCUS AURELIUS, AND EDGAR C. BAIN

High speed steel. New York: John Wiley & Sons, Inc., 1931. 178 p. illus. 24 cm. \$3.50. 4222

Contents: Part *i*, Manufacture and use: Crucible melting. Electric furnace manufacture. Casting the ingots. Cogging and recogging. Finishing. Annealing. Inspection. Recovery: percentage of ingot obtained as finished material. Heat treating furnaces. Heat treatment. Hardening. Preparation of finished tools. Part *ii*, Nature and properties: The nature of cutting tools. The constitution of high speed steel. Metallography of the solidification and working. Metallography of heat treatment. The functions of the individual alloying elements. Further properties of high speed steel. Index.

Note: A general view of the manufacture and properties of high speed steel which will make clear the general laws that govern its behavior during manufacture and final preparation,

and the connection between its fundamental properties and its immediately useful ones. Sound practice in melting, hammering, and rolling ingots and bars, in heating during fabrication, and in making and heat-treating finished tools is described. The fundamental physical properties, and constituent diagrams, and the microstructures arising under various conditions of manufacture and heat treatment are discussed in relation to their effect upon the mechanical properties.

KINZEL, AUGUSTUS BRAUN, AND WALTER CRAFTS

The alloys of iron and chromium. New York: Published for the Engineering Foundation by the McGraw-Hill Book Company, Inc., 1937-40. 2 v. illus. 23 cm. (Alloys of Iron Research. Monograph series; Frank T. Sisco, editor) \$6.00 each volume. 4223

Contents (abridged): Volume *i*, Low-chromium alloys: The constitution of iron-chromium alloys. The iron-chromium-carbon system. Transformations in chromium steels. General effects of chromium in iron and steel. Properties of plain low-chromium engineering steels. Special purpose low-chromium steels containing up to 3.5 per cent chromium. Low-chromium cast iron. Chromium engineering steel containing 4 to 10 per cent chromium. Bibliography. Name index. Subject index. Volume *ii*, High-chromium alloys: Melting high-chromium steels. Fabrication of 12 to 30 per cent chromium steels. Low-, medium- and high-carbon steels containing 10 to 18 per cent chromium. Plain and modified chromium steels containing 20 to 35 per cent chromium. Chromium cast iron containing 12 to 35 per cent chromium. Constitution of complex iron-chromium alloys. Manufacture and fabrication of austenite chromium-nickel steels. The resistance of the austenite chromium nickel steels to oxidation and corrosion. Chromium manganese steels. Iron-chromium-aluminum alloys. Bibliography. Name index. Subject index.

Note: See note under Epstein and Sisco, *The alloys of iron and carbon* listed above.

LUNDELL, GUSTAV ERNST FREDRICK, AND OTHERS

Chemical analysis of iron and steel, by Gustav E. F. Lundell, James Irvin Hoffman and Harry Aaron Bright. New York: John Wiley & Sons, Inc., 1931. 641 p. illus. 24 cm. \$7.00. 4224

Contents: Part *i*, General considerations. Part *ii*, Methods for the determination of the constituents of irons and steels. Part *iii*, Methods for the determination of oxygen, oxide inclusions, hydrogen and nitrogen. Part *iv*, Methods for the analysis of ferro-alloys. Part *v*, Methods for the analysis of ores, lime-stones, fluorspar, refractories, slag, molding sands, and coal and coke. Index of authors. Index of subjects.

Note: This comprehensive book is intended chiefly for works chemists, whether those just beginning their career or those who have had considerable experience in the ferrous analysis field. The aim of the authors has been to give rapid methods suitable for routine analysis as well as methods that must be used in making analyses of the highest accuracy. Since no method of chemical analysis can be applied indiscriminately each procedure is discussed at sufficient length to enable the analyst to decide whether it can be applied to the determination in hand or, if not, whether it can be modified so as to be made suitable. Realizing that new alloys will probably bring new problems, the authors have tried to lay down some general principles which will guide the analyst confronted with still newer alloys.

MARSH, JOHN SAMUEL

The alloys of iron and nickel. New York: Published for the Engineering Foundation by the McGraw-Hill Book Company, Inc., 1938. 593 p. illus. 23 cm. (Alloys of Iron Research. Monograph series. Frank T. Sisco, editor) \$6.00. 4225

Contents: Introduction. The iron-nickel system. The iron-carbon-nickel diagram. The constitution of complex iron-nickel alloys. Physical properties of iron-nickel alloys. Thermal expansion. Magnetic properties of iron-nickel alloys. Magnetic prop-

erties of complex iron-nickel alloys. Mechanomagnetic properties. Electric properties. Mechanical properties of iron-nickel alloys. Mechanical properties of complex iron-nickel alloys. Corrosion. Bibliography. Name index. Subject index.

Note: See note under Epstein and Sisco, *The alloys of iron and carbon*, listed above.

PARKER, CHARLES M.

Steel in action. Lancaster, Pa.: The Jaques Cattell Press, 1943. 221 p. illus. 20 cm. (Science for war and peace series) \$2.50. 4226

Contents: Steel in our daily life. The remote past. The manufacture of iron and steel. Carbon steel. Alloy steel. The struggle for raw materials. Distribution and control of raw materials. Scrap. International trade in iron and steel. The steel industries of the world. The wartime expansion of the American industry. Production and distribution of steel products. New developments under war pressure. Steel in the postwar world. Index.

Note: A non-technical description for the layman of the early beginnings of the industry, the sources of raw materials, and the manufacture of iron and steel by modern methods.

SAUVEUR, ALBERT

The metallography and heat treatment of iron and steel. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1935. 531 p. illus. 27 cm. \$8.00. 4227

Contents: Pure metals. Impure metals. Pure and impure iron. Wrought iron. Steel. Impurities in steel. The thermal critical points of iron and steel (their occurrence). The thermal critical points of steel (their causes). The thermal critical points of iron and steel (their effects). Cast steel. The mechanical treatment of steel. Heat treatment. Annealing and normalizing. The hardening of steel. The tempering of hardened steel. Theories of the hardening of steel. Miscellaneous heat treatments. The cementation and case hardening of steel. Alloy steels. Cast iron. Impurities in cast iron. Malleable cast iron. Constitution of metallic alloys. Equilibrium diagram of iron-carbon alloys. The phase rule. Appendixes: Manipulations. The optics of metallography. Tentative recommended practice for thermal analysis of steel. Index.

Note: A comprehensive treatment of the metallography of iron and steel, covering structure of metals, processes, manipulations and apparatus. The book is intended primarily for students and for the manufacturers and users of steel, but it will also be of value to the interested layman. In this edition many of the chapters have been revised to meet recent developments, and two chapters have been added dealing with metallic crystals and the hardening of steel. There are numerous photographs of magnified cross-sections of various types of iron and steel.

SHANNON, RANDOLPH WILLIAM

Sheet steel and tin plate. New York: The Reinhold Publishing Corporation, 1930. 285 p. illus. 24 cm. \$2.50. 4228

Contents: Part 1, Industrial iron products in general; Introduction. The different kinds of iron products. Part 2, Sheet steel and tin plate: Definitions, annual production in the United States, types of steel used. The principles of rolling sheet steel products. Continuous hot-rolling of sheets. The sheet steel makers' contribution to industry. Tables pertaining to sheet steel products. The shaping process: hot-rolling and shearing. The refining process: annealing. The refining process: pickling. The refining process: cold rolling. The refining process: resquaring; flattening operations; oiling; protective coatings. The refining process: metallic coating processes. Inspection; forming and painting; preparation for shipment. Classification, description, and application. Bibliography. Index.

Note: Written for the layman, this book describes the principles of iron and steel making with regard to sheet steel and tin plate, outlines the operations and materials involved in rolling and treating, and tells of the nature and purpose of grades and finishes. Appendixes deal with annealing, definitions and terms for textures of surfaces, definitions relating to physical properties of steel, abbreviations, how to specify sheet steel products, tolerances, and notes.

STOUGHTON, BRADLEY

The metallurgy of iron and steel. Fourth edition. New York: McGraw-Hill Book Company,

Inc., 1934. 559 p. illus. 23 cm. (Metallurgical texts) \$4.00. 4229

Contents: Introduction and early history. First applications of chemical theory in ferrous metallurgy. The age of steel. Iron ore smelting in the twentieth century. Modern open-hearth practice. The Bessemer process. Electric processes for producing high temperatures. The ingot making stage of manufacture. The mechanical treatment of steel. Iron and steel founding. The iron-carbon equilibrium diagram. The constitution of steel. The heat treatment of steel. The constitution of cast iron. Malleable cast iron. Alloy steels and alloy cast irons. Index.

Note: This edition of a work intended for the use of students and for workers in the fields of engineering and metallurgy has been so completely revised as to resemble the former edition only in the matter of subject content. The production of iron and steel in all its phases is still described, but the arrangement of the material stresses the historical angle. The sections on the open-hearth process have been expanded while those dealing with forging and rolling and alloy steels have been curtailed. Lists of references are given at the end of each chapter.

SWEETSER, RALPH HAYES

Blast furnace practice. New York: McGraw-Hill Book Company, Inc., 1938. 356 p. illus. 23 cm. \$4.00. 4230

Contents: The blast furnace plant. Raw materials. Theory and chemistry of blast furnace process. Operating the blast furnace. By-products of the blast furnace. The commercial side of blast furnace practice.

Note: An illustrated story of the making of pig iron in the iron blast furnace. The treatment is mainly from the operating man's viewpoint, but the book is of interest to others concerned with the iron and steel industry.

TEICHERT, ERNEST JOHN

Ferrous metallurgy. Second edition. New York: McGraw-Hill Book Company, Inc., 1944. 3 v. illus. 22 cm. (The Pennsylvania State College. Mineral industries series) Vol. I-II, \$4.00 each; Vol. III, \$5.00. 4231

Contents (abridged): Volume I, Introduction to ferrous metallurgy: Metallurgical fuels and their combustion. Manufacture of pig iron. Iron founding. Malleable cast iron. Wrought iron. The cementation and crucible steel processes. Volume II, The manufacture and fabrication of steel: The Bessemer processes. The basic open-hearth processes. The acid open-hearth process. The electric furnace process. The fabrication of steel. Rolling mill practice. Volume III, Metallography and heat-treatment of steel: The X-ray. The physical testing of metals. The mechanical treatment of steel. Heat-treatment of plain carbon steels. Precipitation hardening. Grain size in steel. Casehardening of steels. Alloy steels. Individual effects of alloying elements. Index.

Note: Intended as the basic textbook for a three-year course in ferrous metallurgy, this series is also valuable to engineers and metallurgists. Both theory and methods used in practice are included. Indexes have been added to this edition. Few changes have been made in the bibliographies. Equipment and practices in industry have been brought up to date.

THUM, ERNEST EDGAR, EDITOR

The book of stainless steels; corrosion resisting and heat resisting chromium alloys. Cleveland, O.: The American Society for Steel Treatment, 1933. 631 p. illus. 23 cm. \$5.00. 4232

Contents (abridged): Constitution of chromium and chromium nickel steels. Problems of melting and casting. Foundry practice. Rolling mill practice. Finishing and fabricating operations. Welding. Duplex materials. Five per cent chromium steels. Low carbon stainless steels. High carbon stainless steels. Chromium ferrites. Twenty-five to 30 per cent chromium-iron alloys. Austenitic 18% chromium, 8% nickel alloys. Higher alloys of chromium-nickel-iron. Other high chromium alloys. Determination of long-time properties. Requirements of chemical and food industries. Requirements of metallurgical industries. Architectural uses. Transportation industries. Power industries.

Note: A comprehensive book on American practice. Written by 82 experts, each chapter and sub-chapter has been carefully correlated and edited so as to present a unified text.

TIEMANN, HUGH PHILIP

Iron and steel (a pocket encyclopedia) including allied industries and sciences. With an introduction by Henry Marion Howe. Third edition. New York: McGraw-Hill Book Company, Inc., 1933. 590 p. illus. 18 cm. \$4.00. 4233

Note: A pocket reference book for students, practicing engineers, and other workers in iron and steel including allied industries and sciences. Defines the varied nomenclature of the mill, the laboratory, and the office and supplies brief treatises on the more important subjects. Terms pertaining to the industry are arranged in one alphabetical order. Definitions range in length from a few words to several pages. To avoid repetition of definitions much use has been made of cross references, the reader being referred to the particular general subject for explanation of lesser or included terms. The third edition includes new material covering developments from 1918 to 1931, especially in chemistry and metallography.

TRINKS, WILLIBALD

Roll pass design. Second edition. Cleveland, O.: The Penton Publishing Co., 1933-34. 2 v. illus. 23 cm. Vol. I, \$4.50; Vol. II, \$6.00. 4233a

Contents: Volume I: Preface. Classification and strength of rolls. Basic principles governing entrance and deformation. Various principles underlying the process of rolling. Index. Volume II: The rolling of square or nearly square sections. Rolls for flat sections. Rolls for merchant bar. The rolling of shapes. Die rolling. Rolling mill torque. Appendix: The rolling of non-ferrous metals. Roll passes for seamless tubes. Index.

Note: This work is intended to help a rolling-mill roll designer do his work better and more intelligently. The theories which it explains are the result of 14 years of experimental work, theoretical analysis, and classroom work with experienced roll designers. The first volume covers the general laws and rules of roll design, the second the application of principles with examples of roll passes. The work was originally published in the *Rolling mill journal* in 1929 and 1930. It was revised and enlarged for publication in book form in the latter year. The second edition incorporated revisions throughout.

UNITED STATES STEEL CORPORATION

Sampling and analysis of carbon and alloy steels; methods of the chemists of the subsidiary companies of the United States Steel Corporation as revised to 1937. New York: Reinhold Publishing Corporation, 1938. 356 p. illus. 23 cm. \$4.50. 4234

Contents (abridged): Qualitative and quick tests for identifying various types of steel. Chemical separations. Determination of manganese. Determination of phosphorus. Determination of sulphur. Determination of silicon. Determination of copper. Determination of nickel. Determination of chromium. Determination of vanadium. Determination of molybdenum. Determination of titanium. Determination of aluminum. Determination of arsenic. Determination of tin. Determination of cobalt. Determination of tungsten. Determination of uranium. Determination of zirconium. Determination of columbium and tantalum. Determination of selenium. Determination of boron. Determination of beryllium. Determination of nitrogen. Determination of antimony, copper and molybdenum. Determination of zinc. Determination of cerium. Appendixes.

Note: The scope of this reference book for metallurgists includes approved procedures for sampling mill products, and for determining all the elements that may occur in steel under any conditions of combination. Methods are given for such infrequently occurring elements as beryllium and cerium. The first appendix describes three recent procedures for determination of sulphur by combustion. Bibliographies follow each chapter.

VILELLA, JOSEPH RAMÓN

Metallographic technique for steel. A series of three educational lectures on metallographic technique for steel presented to members of the A.S.M. during the nineteenth National Metal

Congress and Exposition, Atlantic City, New Jersey, October 18 to 22, 1937. Cleveland: American Society for Metals, 1938. 84 p. illus. 23 cm. \$2.00. 4235

Contents: Preparation of the specimen. Etching methods. Photomicrography.

Note: This small volume differs from the usual text on metallography, in that it emphasizes the difference between good and poor techniques as reflected in the finished photomicrograph. By means of comparisons the author illustrates how faulty preparation of the specimen, and poor etching and photographic technique, will alter the appearance of the photomicrograph and lead to erroneous conclusions. There is an index.

WILLIAMS, GORDON T.

What steel shall I use? Cleveland, O.: The American Society for Metals, 1941. 213 p. illus. 23 cm. \$3.50. 4236

Contents: Selection of steels as affected by tensile properties. Selection of steels as affected by endurance limit. Impact and hardness tests; notes on their practical use. Wear, and what can be done about it. Metallurgical factors in the selection of steel. Properties of steel as purchased. Available heat treating equipment. What alloys should be used? Utility of casehardening steels. Considerations in fabrication. Economics of steel selection. Problems and service failures.

Note: The purpose of this volume, parts of which appeared in the 1941 issues of *Metal progress*, is to provide a quick and practical understanding for technical men of what steel is and what it can be made to do. For the reader wishing to pursue the subject at greater length, the author gives a list of suggested readings at the end of each chapter. There is an index.

Various Metals

ADDICKS, LAWRENCE, EDITOR

Silver in industry. New York: Reinhold Publishing Corporation, 1940. 636 p. illus. 23 cm. \$10.00. 4237

Contents: The background, by Lawrence Addicks. Properties of silver, by A. J. Dornblatt. Binary silver alloys, by A. J. Dornblatt. Ternary and engineering alloys containing silver, by A. J. Dornblatt and A. M. Setapen. Technology of silver, by A. J. Dornblatt. Low-temperature bonding of silver, by Allison Butts and G. R. Van Duzee. High-temperature bonding of silver, by R. H. Leach. The use of silver in bearings, by R. W. Dayton and C. L. Faust. Coatings, by Lawrence Addicks and A. J. Dornblatt. Electroplated silver coatings, by A. J. Dornblatt and A. C. Simon. Chemical and vaporized coatings, by A. M. Setapen. Silver in stationary electrical contacts, by Lyall Zickrick, C. Peterson and F. H. Clark. Silver in moving electrical contacts, by S. B. Wiltse and H. M. Parshall. Silver as a catalyst, by Allan R. Day and Tony Immediata. Corrosion resistance of silver and silver alloys, by Allison Butts and J. M. Thomas. The oligodynamic effect of silver, by A. Goetz, R. L. Tracy and F. S. Harris, Jr. Silver as a fungicide, by L. W. Nielson and L. M. Massey. Miscellaneous, by Lawrence Addicks and Irl C. Schoonover. Statistics of industrial consumption, by Lawrence Addicks. Summary and conclusions, by Lawrence Addicks. Appendixes: Bibliography. Patent index. Subject index.

Note: This work is based on investigations made by a group composed of American silver producers, the National Bureau of Standards and several universities. The bibliography and the patent index are comprehensive.

AMERICAN FOUNDRYMEN'S ASSOCIATION

Magnesium alloys foundry practice. Chicago: American Foundrymen's Association, 1944. 136 p. illus. 23 cm. (Reprint 43-36) Paper, \$3.00. 4237a

Contents: Recommended practices for sand castings of magnesium alloys, by M. E. Brooks and others. Fluoroscopic examination of light alloy castings, by A. E. Cartwright. Temperatures developed in sand cores during the casting of magnesium alloys, by M. V. Chamberlin and A. T. Peters. Magnesium foundry sand control, by F. S. Brewster. Molding and core sand characteristics in a light metal foundry, by A. V. Lorch.

Sand practice in a Canadian light alloy foundry, by A. E. Cartwright. Magnesium foundry sand practices, by M. E. Gantz. Chemical analysis of sands for magnesium castings, by Eugene M. Cramer. Core sand reclamation at elevated temperatures, by D. L. Longueville and O. J. Myers. Thermal process of core sand reclamation, by W. L. Hartley. Fire control in magnesium foundries, by R. I. Thrune. The control of magnesium dust, by John M. Kane. Health aspects of magnesium and other foundries, by Warren A. Cook.

Note: This publication reprints papers presented at sessions of the 47th annual meeting of the American Foundrymen's Association, held in St. Louis, April 28-30, 1943. Discussion and bibliographies are included.

GREGG, JAMES LAWRENCE

Arsenical and argentiferous copper, with a foreword by H. Foster Bain. New York: Reinhold Publishing Corporation, 1934. 189 p. illus. 23 cm. (American Chemical Society monograph series. No. 67) \$4.00. 4238

Contents: Historical and general. Properties and uses of copper. Arsenical and argentiferous copper. Constitution of arsenical and argentiferous copper. Electrical and thermal properties of arsenical and argentiferous copper. Mechanical properties of arsenical and argentiferous copper and copper alloys. Corrosion of arsenical copper and brass. Uses of arsenical and argentiferous copper. Appendix. Bibliography. Index.

Note: A monograph for metallurgists covering the special properties of the argentiferous and arsenical coppers, including a general account of copper itself in all its phases, based on a summary of previous knowledge and available technical data. Among the important material presented for the first time are data dealing with the effect of arsenic on the properties of tough-pitch copper in both the cold-rolled and the annealed condition and the effects of increasing amounts of silver on the softening of cold-rolled copper during tinning.

MONDOLFO, LUCIO F.

Metallography of aluminum alloys. New York: John Wiley & Sons, Inc., 1943. 351 p. illus. 22 cm. \$4.50. 4239

Contents: Part I, Equilibrium diagrams: Binary diagrams. Ternary diagrams. Quaternary diagrams. Part II, Polishing and etching: Macro-examination. Polishing. Etching. Constituents. Part III, Commercial alloys: Master alloys. Aluminum-copper alloys. Aluminum-silicon alloys. Corrosion-resistant alloys. Duralumin. Aluminum-copper-nickel alloys. Part IV, Effect of fabricating on the microstructure: Melting, fluxing, pouring, casting.

Working. Heat treatment. Corrosion and protection. Bibliography. Index.

Note: A book for the plant metallurgist. By means of diagrams, photomicrographs, and clear, explicit words, existing data and much heretofore unpublished material on aluminum alloys are presented in this book. It is a specialized book for a specialized field. The photomicrographs—all original—and the extensive material on the aluminum alloys in commercial use are especially noteworthy. There is a large classified bibliography.

NEWTON, JOSEPH, AND CURTIS L. WILSON

Metallurgy of copper. New York: John Wiley & Sons, Inc., 1942. 518 p. illus. 23 cm. \$6.00. 4240

Contents: From ore to concentrate. The extraction of copper from its ores. Roasting. Smelting. Converting. Fire refining. Smoke and gases. Electrolytic refining. Hydrometallurgy. Properties of copper. The uses of copper. Production of copper. Index.

Note: This is a study of current methods for the extraction of copper from its ores and for refining the metal to commercial grade. There is a thorough treatment of theory and the chemistry involved. Principles are stressed. The book includes information on the uses of copper, ore dressing, copper alloys and their fabrication, and heat treatment. Brief data are given on the sources of copper, the nature of copper ores, and the geographic distribution of these ores.

WILKINS, RICHARD ALFRED, AND E. S. BUNN

Copper and copper base alloys; the physical and mechanical properties of copper and its commercial alloys in wrought form. New York: McGraw-Hill Book Company, Inc., 1943. 355 p. illus. 29 cm. \$5.00. 4241

Contents: Acknowledgment. Preface. The coppers. The brasses. The leaded brasses. The tin brasses. The special brasses. Nickel silvers. The cupro-nickels. The silicon bronzes. The aluminum bronzes. The tin bronzes. The copper-beryllium alloys. Low-temperature mechanical properties of wrought copper and copper-base alloys. Fatigue and corrosion-fatigue properties of wrought copper and copper-base alloys. Bending properties of wrought copper and copper-base alloys. Bibliography. Appendixes. Index.

Note: A comprehensive compilation of physical and mechanical property data on all of the common coppers and copper base alloys in wrought form, particularly designed as a reference source for engineers and metallurgists engaged either in specification writing or the fabrication of equipment utilizing non-ferrous materials.

SHIPBUILDING

BAKER, ELIJAH

Introduction to steel shipbuilding. New York: McGraw-Hill Book Company, Inc., 1943. 242 p. illus. 21 cm. \$3.00. 4242

Contents: General discussion of strength of materials. Materials used in shipbuilding. Riveting and welding. Keels. Floors and double bottoms. Frame and framing systems. Shell plating. Deck beams. Pillars and girders. Bulkheads and flooding. Decks. Stern, stern frame, and rudder. Types of ships. Lines and offsets. Weight and displacement calculations. Stability, trim, the inclining experiment, and damage control. Launching. Tonnage. Testing the ship on trials.

Note: Intended primarily for the apprentice shipbuilder, this book is designed to give him a basic understanding of the ship's hull as a whole and of the relationship of the many shipyard trades to the finished ship. Stress is placed upon reasoning rather than memorizing, and the student is led to appreciate the logic behind the design, construction, and behavior of a ship. The mathematical treatment has been reduced to a simple arithmetic, except in the discussion of stability, where trigonometry is used.

CARMICHAEL, ANDREW WILLIAMS

Practical ship production. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 283 p. illus. 23 cm. \$3.00. 4243

Contents: Requirements of ships. General description of ships. Structural members of ships. Design of ships. Shipyards. Preliminary steps in ship construction. The building of ships.

Note: A manual of ship building, designed to help the practical worker to understand and better handle the various jobs and procedures of ship construction. Gives a fundamental view of the ship, the requirements that affect its construction, its structural elements, procedure of design, etc. Covers the steps in construction from ordering materials to launching, with emphasis on the practical details of mold and template work, fabrication of hull material, welding, riveting, etc.

CARR, FRANK J.

Marine coppersmithing. New York: McGraw-Hill Book Company, Inc., 1944. 195 p. illus. 22 cm. \$2.00. 4244

Contents: Tools and equipment. Heat. Annealing and melting temperatures. Acids. Tinning and use of solders. Brazing. Flanges. Reducing a pipe and making a cup joint. Branches. Tube bending. Templating. Expansion joints. Sheet brazing. Sheet bends. Testing. Miscellaneous. Shipwork. Compartmentation.

Note: This practical book outlines the necessary steps involved in each operation. The author shows the methods of procedure and explains trade terms as he goes along. Silver brazing is stressed throughout the book.

CHAPELLE, HOWARD IRVING

Boatbuilding: a complete handbook of wooden boat construction. New York: W. W. Norton & Company, Inc., 1941. 624 p. illus. 24 cm. \$5.00. 4245

Contents: Acknowledgments. Preface. Introduction. Plans. Lofting. The backbone—setting up. Flat-bottom hull construction. V-bottom hull construction. Round-bottom hull construction. Lapstrake, and other construction methods. Joiner-work, plumbing, installation, sparmaking, and finishing. Tools and care, professional building. Index.

Note: A practical handbook and boatshop assistant, covering the complete process of wooden boat construction, designed and written to meet the needs of the amateur builder. The builder

is shown how to plan each job in its proper sequence. Many types of craft from flat-bottom rowboats to commercial vessels are considered.

CHAPELLE, HOWARD IRVING

Yacht designing and planning for yachtsmen, students and amateurs. New York: W. W. Norton & Company, Inc., 1936. 319 p. illus. 24 cm. \$4.75. 4246

Contents: Preface. Tools and materials. Preliminary design. The lines. The construction and joiner plans. The sail plan. Specifications. Appendix. Index.

Note: In this book for amateurs and yachtsmen who are not professional builders, the author has avoided the purely theoretical and has written a practical handbook which explains, with many drawings and diagrams, methods as actually carried out in the drafting room. The subject is treated from the point of view of American requirements and conditions.

COEN, MARTIN J.

Ship welding handbook. New York: Cornell Maritime Press, 1943. 505 p. illus. 19 cm. \$3.50. 4248

Contents: Introduction to welding. Electricity. Generators. Electrodes and metals. Symbols and joints. Technique. Effects of heat. Sequence. Tests. Appendixes: American Welding Society report on thermal stresses and shrinkage in welded ship construction. Welding design. Index.

Note: The author, a welding engineer and instructor, has endeavored to maintain a balance between theory and practice. The various states of metallic arc welding are discussed, with illustrations of equipment, procedure, techniques, and examples of good and bad welding. The treatment is primarily for practical students and workers.

COMSTOCK, JOHN PAUL

Introduction to naval architecture. Second edition. New York: Simmons-Boardman Publishing Corporation, 1944. 209 p. illus. 23 cm. U.S. and Canada, \$4.00; other countries, \$4.25. 4249

Contents: Ship calculations: Definitions, abbreviations and particulars of example ship. Lines, form calculations and curves of form. Stability, including experiment and period of roll. Volume calculations, capacities and tonnage. Local strength and American Bureau of Shipping rules. Weight estimates. Waves and rolling. Standard longitudinal strength calculation. Power. Propulsion. Freeboard and flooding. Launching. Design: Owner's requirements, preliminary dimensions, power and weight. Revised dimensions, freeboard, stability and flooding. Revised weights, final dimensions, power and lines. Final stages of design. Index.

Note: This text for high school graduates is substantially the course in theoretical naval architecture given to hull drawing apprentices at the shipyard of the Newport News Shipbuilding and Dry Dock Company by the author. Its purpose is to acquaint the student with the fundamentals of theoretical naval architecture, and to explain how they are interrelated and progressively applied in the design of a steel ship. Illustrated with example drawings, tables, charts, and photographs of shipyard construction work.

CRIVELLI, ALBERT F.

Shipfitter's manual. New York: Pitman Publishing Corporation, 1941. 145 p. illus. 21 cm. \$1.50. 4250

Contents: Shipbuilding terms. Materials used in ship construction—structural shop. Principal structural members of a ship. Mold loft. Shop layout of equipment; machine and hand tools. General phases of shipfitting in ship construction. Structural shop personnel; shop safety. Hull structural plan reading. Electric arc welding. Appendix—answers to questions. Index.

Note: A brief guide for student shipfitters. In addition to the definitions and illustrations of shipbuilding terms in chapter 1, there are helps such as listings of tools and uses, designations and duties of workers, lines and symbols used in blueprint reading, symbols used in arc welding, and hull structural abbreviations. Problem questions follow most chapters.

EDDINGTON, WALTER J.

Glossary of shipbuilding and outfitting terms. New York: Cornell Maritime Press, 1943. 435 p. illus. 19 cm. \$3.50. 4251

Contents: Glossary of terms. Appendices: Tables and other data. Contents of storage warehouses. Deck department tools. Engine room tools. Machine tools and machine tool accessories. Steward's department allowance list. Addenda: Lifeboat and life raft equipment. Index to tables and other data.

Note: A glossary of the language of shipbuilding, ships, and the sea with examples of nautical slang and superstitions and terms encountered in sea fiction. Appendixes list the equipment of various parts of a modern ship.

FLEXNER, JAMES THOMAS

Steamboats come true; American inventors in action. New York: The Viking Press, 1944. 406 p. illus. 21 cm. \$3.50. 4251a

Contents (abridged): In pursuit of a paradox. Magic and prophecy. France plays the first card. Stone age adventure. The birth of an obsession. The race is on. A miniature painter. There's many a slip. England enters the game. Lord high admirals of the Delaware. Birth of a submarine. Fulton's first steamboat. Death for sale. Steamboat fever. Who invented the steamboat? Appendixes: Bibliography of principal sources. Notes to the text.

Note: Much scholarly research preceded the writing of this vivid, non-technical account of how the steamboat evolved from the experiments of John Fitch, James Rumsey, and Robert Fulton. The characters and personalities of these men are emphasized as much as their mechanical ideas. The appendix contains supplementary notes and an annotated bibliography.

GARYANTES, HUGO F.

Handbook for shipwrights. New York: McGraw-Hill Book Company, Inc., 1944. 602 p. illus. 23 cm. \$5.00. 4251b

Contents: Mathematics for shipwrights. Blueprint reading. Ship's lines, body plan, offsets, and development. Care and use of tools. Timber. Ropes and lines for handling, tying, and bracing. Nails, spikes, screws, and bolts. Effects of welding and ship welding data. Shipwright work in connection with subassembly. Shoring and bracing. Ribbands, fairing, pulling, and jacking. Staging. Outside supports. Preparations for laying down the keel and bottom shell. Spauls and cradle. Laying the keel. Erecting, setting, and aligning the vertical keel. Setting bottom and side shell plating and establishing frame stations. Setting and aligning inter-bottom structure and plating. Bulkheads. Side framing. Deck girders and beams. Regulating and setting deck plating. Shell stringers. Bilge keel and packing. Hatch casings and trunks. Superstructure. Foundations. The rudder. Fittings and castings. Stanchions. Draft figures and load and paint lines. Establishing working lines. Running sheet lines. Machinist's boring stands and shaft skids. Armor. Establishing and checking dimensions. Timber joints. Ladders, stairs, ramps, and gangways. Launching. Terms and definitions. Appendix.

Note: A handbook for the working shipwright, rather than a classroom text. Hull construction is fully discussed but not all the work performed by shipwrights in various shipyards could be included. Mathematical tables constitute the appendix.

GOEHRING, EDWARD P.

Marine piping handbook, for designers—fitters—operators. New York: Cornell Maritime Press, 1944. 662 p. illus. 19 cm. \$5.00. 4252

Contents: Pipes, fittings, flanges, and supports. Valves. Main and auxiliary machinery. Hull drawings. Piping systems. Diagrammatic drawings and system calculations. Systems of draw-

ings. Tables and information. Shipyard abbreviations and glossary. Index.

Note: A text and reference book for designers, fitters, operating marine engineers, industrial and vocational teachers, and students. Complicated and exacting specifications are explained and analyzed, and all types of piping installation, large and small, including high pressure, are treated.

HALIDAY, GEORGE VINCENT, AND W. E. SWANSON

Ship repair and alteration. New York: Cornell Maritime Press, 1942. 378 p. illus. 19 cm. \$2.75. 4253

Contents: Hull repairs. Mathematics and elementary geometry. Fifty simple geometrical problems. Development and layout. General information and tables. Shipbuilding terms and abbreviations. Index.

Note: A guide for shipfitters, helpers, and apprentices. The author endeavors to cover problems which might arise in hull repair, development, and layout. A glossary of shipbuilding terms and abbreviations is provided.

HANSEN, EMIL M.

Modern marine pipefitting. New York: Cornell Maritime Press, 1941. 434 p. illus. 19 cm. \$3.00. 4254

Contents: Introduction. Systems of drawing. Types of drawings. Symbols and conventions. Glossary of abbreviations and shipbuilding terms. General layout of ships. Ship's structure. System of reading drawings. Systems of piping. Templates. Fabrication. Pipe-material classification. Valves and fittings. Types of joints and gaskets. Tests. Tools. Pipefitting practice. Glossary of pipefitting terms. Safety. Useful tables and other data. Index.

Note: A manual for marine pipefitters, giving methods of using plans and blueprints in the installation of piping, principally in naval vessels. It is designed primarily for new men in the work, and the author has endeavored to produce a work simple enough to obviate apprenticeship.

HANSEN, EMIL M.

Ship outfitter's handbook. New York: Cornell Maritime Press, 1943. 291 p. illus. 23 cm. \$3.00. 4255

Contents: Systems of drawing. Types of drawings. Symbols and conventions. Glossary of abbreviations and shipbuilding terms. General layout of ships. Ship's structure. System of reading ship outfitting drawings. Ship outfitting jobs. Fabrication. Outfitting practice. Templates. Tests. Tools. Safety. Tables and other data. Index.

Note: This handbook is designed for beginners in ship outfitting. The layout and structure of ships are discussed and a method for effective use of blueprints is developed. There are numerous illustrations and a supplement of reproductions of working drawings.

HASE, VERN E., AND RALPH W. ALLEN

Marine pipefitting. New York: McGraw-Hill Book Company, Inc., 1944. 325 p. illus. 23 cm. \$3.00. 4256

Contents: Tools, valves, and piping material. Compartmentation and nomenclature. General shipwork. Piping systems: steam. Piping systems: water and oil. Piping systems: drainage and gasoline. Other piping systems. Silver brazing. Shopwork. Lead working. Mechanical drawing, plan reading, and detailing. Applied geometry and flange layout. Mitering. Piping and branch layout. Mathematics: fractions, decimals, powers, and roots. Trigonometry. Mathematical mitering layout. Mathematical piping layout.

Note: A manual for the practical instruction of the trainee or beginning worker. It describes and pictures all the major piping systems on ships and the best methods of installing them. Modern shop practice in pipefitting is clearly set forth, with detailed explanation of how to bend pipe, and with a new and practical approach to mechanical and mathematical piping layout.

HEED, H. L.

Ship structure and blueprint reading. New York: Cornell Maritime Press, 1942. 258 p. illus. 19 cm. \$2.50. 4257

Contents: Introduction. Materials of ship construction. Elements of mechanical drawing. Plates and shapes. Welding and riveting. Combinations of structures of steel. Ship layout. Ship's drawings. Ship types and arrangement. Appendages. Ventilation. Machinery. Piping. Lines of a ship. Tables. Blueprint abbreviations. Shipbuilding glossary. Index.

Note: A guide for welders, fitters, loftsmen, riveters, and others in shipyard or allied work. The author has concentrated on teaching the beginning shipyard worker how to read and interpret plans and drawings.

HUGHES, CHARLES HAYNES

Handbook of ship calculations, construction and operation. Third edition. New York: McGraw-Hill Book Company, Inc., 1942. 558 p. illus. 18 cm. \$5.00. 4258

Contents: Weights, measures and formulas. Strength of materials. Shipbuilding materials. Ship calculations. Hull construction. Machinery. Electricity. Systems. Ship equipment. Ship operation. Index.

Note: A reference work on all phases of ship design, construction, and operation for naval architects, marine engineers, ship officers and engineers, and shipbuilding draftsmen. This edition represents an extensive revision of earlier editions. Particular sections which contain much new material are those on horsepower, coal and wood, steam, heat exchange and balance, Diesel engine auxiliaries, propellers and paddle wheels, and air-conditioning and cargo-protection systems.

LAING, ALEXANDER KINNAN

Clipper ship men. Illustrated by Armstrong Sperry. New York: Duell, Sloan and Pearce, 1944. 279 p. illus. 24 cm. \$3.00. 4259

Note: A review is here presented of the trends which revolutionized ship design and led ultimately in the 1850's to the perfection of the swift-sailing clippers. More than the ships themselves or their performances, however, this book stresses the ideas which produced them, particularly the theories of Nat Palmer, John Griffith, Samuel Pook, William Webb, and most important of all, Donald McKay.

LANE, CARL DANIEL

American paddle steamboats. Frontispiece by Arthur C. Adams. New York: Coward-McCann, Inc., 1943. 250 p. illus. (part col.) 28 cm. \$6.00. 4259a

Contents: Foreword. American paddle steamboats: The East. The Middle West. The Far West. Plates: Steamboats. Steamboat engines. Steamboat trivia. Index.

Note: An historical account of the paddle-wheel steamers which for more than a century operated on almost every river, lake, and coastal route throughout the country. It describes the building of the boats, the rivalry of the steamship companies, passenger accommodations, fares, cargoes, and runs. In addition to illustrations in the text, there are 95 plates, with descriptive notes, of pictures of steamboats, steamboat engines, steamboat tickets, advertising broadsides, and other miscellany.

LILJEGREN, C. O.

Naval architecture as art and science. New York: Cornell Maritime Press, 1943. 212 p. illus. 23 cm. \$4.00. 4260

Contents: Elementary principles. Advanced studies. Naval architecture as a quasi-science. Naval architecture as an exact science. Appendices: Theory of trochoidal wave. Capacities of merchant ships. List of references. Index.

Note: The author, an architect-engineer, challenges traditional theories in the art of ship designing, and tries to place it on a scientific basis. New proposals are brought forward concerning the best longitudinal lines, the most profitable bow and stern angles, the form of minimum wetted surface, the effect of model

basin walls on model resistance, optimum speed-length ratios, propeller immersion, and river towboats. A bibliography is provided.

MOSS, LOUIS QUENTIN

Practical mathematics for shipfitters and other shipyard workers. New York: Pitman Publishing Corporation, 1941. 108 p. illus. 21 cm. \$1.50. 4262

Contents: Reading and computing simple dimensions. Decimals. Geometry of laying out. Measuring and computing angles. Length of plates and bending allowances. Areas and weights of ship structural shapes and plates. Square root and its applications. Miscellaneous problems for review. Answers to practice problems. Index.

Note: A brief review of mathematics as applied to real situations in shipfitting. A list of abbreviations and a glossary of technical terms precede the text; shipbuilding trade terms and symbols are used in the problem descriptions and specifications. Problems occupy a large share of the text; answers to these 140 problems are supplied.

NIEDERHOFF, AUGUST EVAN

Blueprint reading for the shipbuilding trades. New York: McGraw-Hill Book Company, Inc., 1943. 87 p. illus. 28 cm. (A McGraw-Hill practical manual) \$2.00. 4263

Contents: Orthographic projection. Shipbuilding prints. Auxiliary views and body plans. Ship terms. Structural-steel nomenclature. Welding symbols. Preassemblies of ships. Fabricating terms. Liberty ship outboard profile and general arrangement. Floors. Oiltight and watertight bulkheads. Frames. Upper deck. Shaft tunnel. Amidships section. Structural framing and shell expansion. Boat-deck bulkheads. Propulsion machinery. Piping. Erection sequence.

Note: A practical text for shipfitters that introduces the beginner not only to the meaning of blueprints but also to the parts and elements of a ship. In simple, concrete language the author covers orthographic projection, alphabet of lines, abbreviations, and terms found on ship construction blueprints. Actual prints used in shipyards and Maritime Commission blueprints of steel cargo ships are used as examples.

NOWLIN, GORDON A.

Connecting ships' wiring. Boston: Houghton Mifflin Company, 1944. 300 p. illus. 19 cm. \$3.00. 4264

Contents: Part I, Background information: Designating locations aboard ship. Getting information about the job. General cable information. Specific cable information. Part II, Lighting circuits: Designation of lighting circuits. Entering cables into boxes. Connections. Distribution boxes. Testing the circuit. Part III, Intercommunication circuits: Wiring intercommunication circuits. Cutting in and testing intercommunication circuits. Part IV, The power system: Wiring and cutting in power circuits. Testing power circuits. Part V, Recent developments: Degaussing. New methods of sealing electrical cable ends. Index. Appendix.

Note: An interpretation of the principles and specifications governing the cutting in and connecting up of electrical equipment on board naval and commercial vessels. The practices described are standard procedures in the installation of electrical equipment and are applicable to most of the ships now being built in American yards. Electrical theory is purposely omitted and emphasis is upon the practical aspect of electrical wiring from the viewpoint of the beginning electrician and trainee.

PIPER, JOHN F.

Marine electrical installation. Third edition. New York: Cornell Maritime Press, 1943. 450 p. illus. 19 cm. \$2.50. 4265

Contents: The modern vessel. Electrical systems. Tools. Temporary services. Electrical materials. Cable rack, brackets, and hangers. General wiring methods. Lighting systems. The power system. Interior communication systems. The generating plant. Laying out work. Conduit work and mechanical systems. Blueprint reading. Tests and trials. Appendixes: Installation code. Tables and useful data. Elementary theory. Index.

Note: A handbook for the marine electrical worker. Electrical

theory is discussed, and its practical application indicated. In this third edition new text material and new illustrations have been added, and sections have been provided on laying out, degaussing systems, and elementary theory.

RABL, SAMUEL SUPPLEE

Practical principles of naval architecture. New York: Cornell Maritime Press, 1942. 218 p. illus. 19 cm. \$2.00. 4266

Contents: Practical principles. Mathematics. Curves and graphs. The coefficients. Buoyancy and displacement. Centers and moments of gravity. Area and buoyancy. Stability, trim and the metacenters. Stability and trim calculations. Speed, resistance and power. The measurements of a ship. The inclining experiment. Launching. Strength of floating structures. Strength of materials. Curves of form, deadweight scale and capacity plan. Effect of flooded compartments. Appendices. Index.

Note: An elementary text and handbook for men in shipyards, junior draftsmen, and men in the merchant marine. The author has included new methods and also some which may be termed old fashioned, since many good ships still in use were constructed according to these older methods. This volume constitutes a second edition, revised, in which the chapter on the effect of flooded compartments is new material. Additions have also been made to the appendices on the admiralty coefficient and determining I.H.P. by independent methods.

RABL, SAMUEL SUPPLEE

Ship and aircraft fairing and development, for draftsmen and loftsmen and sheet metal workers. Illustrations by the author. New York: Cornell Maritime Press, 1941. 97 p. illus. 21 cm. \$2.50. 4267

Contents: Dedication. Acknowledgments. Introduction. Methods of depicting and dimensioning shape of a drawing. The mold loft floor. Elementary geometry employed on a loft floor. Principles of plane and solid geometry—projection of lines and surfaces. True lengths of lines and measurement of angles. Visual fairing. Geometric fairing. Elementary developments. Principles of shell development. Shell plate development. Templates. The plating model. Layout problems.

Note: A practical discussion, with illustrations and problems, of layout and construction work for modern ships and aircraft. The book is designed for draftsmen, loftsmen, sheet metal workers, and students of naval architecture and aeronautics.

ROSSELL, HENRY EASTIN, AND LAWRENCE B. CHAPMAN, EDITORS

Principles of naval architecture. Written by a group of authorities. New York: The Society of Naval Architects and Marine Engineers, 1939. 2 v. illus. 28 cm. \$11.00; single volumes, \$6.00 (for postage outside the U.S., add \$1.25; for single volumes, \$0.85) 4267a

Contents: Volume 1, Statics of naval architecture: Geometry of the ship, by W. Selkirk Owen. Freeboard, tonnage and capacity, by Harold F. Norton. Transverse stability, by S. A. Vincent. Longitudinal stability and trim, by John F. Macmillan. Subdivision of ships, by John F. Macmillan and John P. Comstock. Strength of ships, by David Arnott. Launching, by Henry H. W. Keith. Volume 2, Dynamics of naval architecture: The motion of ships among waves, by George C. Manning. Resistance and powering, by Kenneth S. M. Davidson. Propulsion and propellers, by Karl E. Schoenherr. Steering, by Karl E. Schoenherr.

Note: An authoritative publication containing information on various aspects of naval architecture. It is illustrated with diagrams, charts, and tables, and contains also practical examples and bibliographies. It is intended both for naval architects and marine engineers and for students in naval architecture and marine engineering.

SCULL, JOHN E.

Ship wiring; a primer of cable and fixture installation. New York: Cornell Maritime Press, 1943. 227 p. illus. 19 cm. \$2.00. 4268

Contents (abridged): Blueprints. Description of fixtures. Fixture installation—general, lighting, power, interior communication and fire control. Stuffing tubes and bushings. Tube installation—thin bulkheads, miscellaneous, boxes and fixtures. Types of installation for various compartments. Cable. Clearance holes. Reading drawings. Sketches. Cable lay-off. Welding. Cabling the job. Index.

Note: A manual designed for the beginner with little or no electrical experience. Electrical theory is not discussed, but the problems arising in electrical lay-off and installation are considered and practical advice is given.

SWANSON, WILLIAM ELMER

Modern shipfitter's handbook. Second edition, revised and enlarged. New York: Cornell Maritime Press, 1941. 309 p. illus. 19 cm. \$2.50. 4269

Contents: Outline of ship construction. Blueprint reading. Mold loft. Structural shop and anglesmithing. Assembly. Erection. Launching. Tools and their uses. Riveting. Riggering. Welding. Safety. Glossary of construction terms. Tables. Appendix. Index.

Note: A pocket-size manual written from the point of view of the worker and the learner. Working operations are illustrated by the use of drawings. New in this second edition is the appendix which covers tank or box assembly, welded corners, winch house assembly, port and deck lights, cylinder assembly, stack construction, masts, derrick posts, etc.

TOMLINSON, JOSEPH L.

Shipbuilding blueprint reading. Chicago: American Technical Society, 1942. 208 p. illus. 28 cm. \$3.00. 4270

Contents (abridged): Shop arithmetic. Plates showing profile of modern cargo ship and midship section. Glossary of ship terms. Plates showing profile and deck plan, and abbreviations used on ship drawings. Typical ship drawings. Symbols and abbreviations. Developing the shape of the ship. Ship lines. Ship parts. Drawing projections. Welding and abbreviations. Deck beam bracket. Bulwark bracket. Gusset and floor bracket. Side stringer. Watertight flat deck. Rivet gages for channels and angles. Thickness and weight of steel plate. Engine foundation. Boss frame. Oil-tight bulkhead. Main deck plating. Fore-castle deck. Midship transverse frame. Forepeak profile.

Note: A wire-bound textbook with explanations, illustrations, and test questions, covering shop mathematics, nomenclature, abbreviations, and working drawings of the modern cargo vessel.

TULIN, ADAM F.

Practical shell developing for steel shipbuilders; a manual for loftsmen, shipfitters, hull draftsmen and others who deal with steel ship construction. Second edition. New York: Simmons-Boardman Publishing Corporation, 1941. 158 p. illus. 24 cm. U.S. and Canada, \$3.00; other countries, \$3.25. 4271

Contents: Shell plate developing and expanding. Sight edge expansions. Transferring fore and aft lines from the body. Lining in frame lines. Lining in butts. Thickness plotting. Stretching and drawing templates. Miscellaneous. Bow table. Index.

Note: An advanced manual for loftsmen, shipfitters, hull draftsmen, and others who deal with steel ship construction. The modern center spot squaring method and the edge squaring method of shell developing are made clear with the aid of scale drawings and worked out examples. No theoretical treatment is given as the loftsmen using the book is assumed to have had at least six months' experience.

UNITED STATES. MARITIME COMMISSION

Welding instructions for use by welding supervisors, leadermen, etc., of all crafts concerned with shipyard welding. Third edition. Revised April 1944. Washington, D.C.: Government Printing Office, 1944. 46 p. illus. 23 cm. Paper, \$0.10. 4271a

Contents: Introduction. Qualification and duties of welding supervisors. Importance of making sound welds. Design details. Standard procedure. Sequences: General. At ends of ship. Individual sequences. Bilge plate. Step back order of deposition. Four-plate intersection. Welding longitudinals in tankers in way of transverse bulkheads. Fashion plate. Failure due to improper sequences, etc. Preparation of subassemblies for welding and erection. Joint details. Joints without beveled plate preparation. Erection procedure: Tack welding. Welding of lifting pads. Butt welds: Girders. Back chipping. Fillet welds. Fittings. Heavy material. Automatic welding. Welding in cold weather. Electrode storage and handling. Fairing. Sequence for repairs. Welding safety.

Note: This publication is addressed to all contractors constructing ships for the United States Maritime Commission. The material which it contains was gathered from the experiences of a representative body of men active in merchant and naval shipbuilding. The instructions are intended for training the members of the welding, ship fitting, and other departments concerned in the proper techniques to be used in shipbuilding from keel laying through to delivery of the vessel. The third edition contains an additional chapter on "Welding safety," not contained in the 1943 edition.

VAN GAASBEEK, RICHARD MONTGOMERY
Wooden boat and ship building; the funda-

mental principles and practical methods described in detail, especially written for carpenters and other woodworkers who desire to engage in boat or ship building, and as a textbook for schools. Chicago: F. J. Drake & Company, 1941. 238 p. illus. 19 cm. \$2.00. 4272

Contents: The mould loft. Stern and stern construction. Fut-tocks and frames. Outside planking. Ship construction. Machines and labor-saving devices. Raising the frames. Planking and finishing. Shift of scarphs and fastening of wooden vessels. Hand tools. Wooden boat and ship terminology. Power for ship propulsion. Index.

Note: A textbook intended for use in schools for adults and designed to assist house carpenters and other woodworkers in adjusting their skills to the wooden boat- and ship-building industries. The work is also meant for the shipbuilders and experienced workers who wish to broaden their knowledge of modern methods. The material is largely fundamental and deals with basic principles common to the construction of all sizes or types of vessels. There are many photographs of construction methods of small and large boats.

MARINE ENGINEERING

CHAPMAN, LAWRENCE BOYLSTON

The marine power plant. Second edition, completely rewritten. New York: McGraw-Hill Book Company, Inc., 1942. 401 p. illus. 23 cm. \$4.00. 4273

Contents: Introduction. Review of thermodynamics of steam. Fuels. Marine boilers. Combustion. Draft. Comparison of oil and coal for steamships. Superheaters. The reciprocating engine. The steam turbine. The geared turbine and combination machinery. The electric drive. The Diesel engine. Comparison of types of propelling machinery. Condensers. Air pumps. Feed heaters. The power plant layout. Power plant computations.

Note: A first book in marine engineering that keeps in mind the viewpoint of the sea-going engineer and the shore operating staff, as well as that of the student of marine engineering, naval architecture, and marine transportation. Fundamental principles and the thermodynamic and economic features have been stressed, and only enough descriptive matter and details included to make clear the principles involved.

FORD, LOUIS RANDOLPH

American marine Diesel engines. New York: Diesel Publications, Inc., 1944. 279 p. illus. 15 cm. Paper, \$1.50. 4274

Contents: Alco-Sulzer. American Locomotive, Model 539. Atlas Imperial. Busch-Sulzer, Type DHBM. Cooper-Bessemer, Type JS. Cummins, Series H. Enterprise, DMG-38. Fairbanks-Morse, Model 37. Fairbanks-Morse, Model 36A. Fairbanks-Morse, opposed piston. General Motors, Model 71. Hendy, Series 50. Nordberg, Type TSM. Nordberg, Victory Ship Type. Sun-Doxford, opposed piston. Superior, Model KNB.

Note: A pocket book of concise descriptions and technical information of interest to marine engineers in charge of the operation of Diesel engines. The material is not general, but is related specifically to the makes of engines mentioned in the contents.

FORD, LOUIS RANDOLPH

Marine Diesel handbook. Third printing. New York: Diesel Publications, Inc., 1944. 928 p. illus. 23 cm. U.S., \$7.00; other countries, \$8.00. 4274a

Contents: Preface. Marine applications of the Diesel engine. Principles of the Diesel engine. Types of Diesel engines. Diesel engine construction, fixed parts. Diesel engine construction, moving parts. Pistons and piston rings. Cylinder head valves. Fuel system. Fuel injection systems. Cooling system. Principles of lubrication. Application of lubrication. Air systems. Diesel engine fuel. Diesel propulsion methods. Diesel-electric drive. Supercharging. Factors affecting overall economy. Waste heat recovery. Propellers and propulsion. Speed regulation. Vibration and noise suppression. Electricity on the motorship. Operation and maintenance of Diesel engines. Use of the indicator. Miscellaneous accessory equipment. Questions on practical operations. Index. Advertisements. Advertisers' index.

Note: This handbook covers in simple language the operation and maintenance of marine Diesel engines. Also, it contains some matter on the design and construction of these engines. The first two printings were issued in 1942 and 1943. The three printings differ only in the included advertising content.

FORD, LOUIS RANDOLPH

Practical marine Diesel engineering. Fourth edition. New York: Simmons-Boardman Publishing Corporation, 1943. 642 p. illus. 24 cm. \$6.00. 4275

Contents (abridged): Action of gases in a cylinder. The use of heat cycles. Mechanical cycles. Diesel engine construction (five chapters). Standard American motorships (two chapters). Auxiliary Diesel engines on Maritime Commission ships. Indirect drive systems. Diesel tugs and their machinery. Normal Diesel engine operation (two chapters). Derangements likely to occur in operation (two chapters). Setting cylinder head valves. Ignition failures. Engine knocks. Bearing adjustment. Diesel engine lubrication. Air compressors and their operation. The indicator card. Fuels used in Diesel engines. The development of double-acting engines. Supercharging. Electrical machinery. Deck machinery. Shipyard repairs. Obtaining a license as a motor engineer. Questions and answers. Index.

Note: The fourth edition is limited to American Diesels and to makes of engines most widely used in the types of vessels now being built. Diesels used in United States Maritime Commission's standard motorships are featured and the indirect drive system adopted by the Commission is explained. Construction, operation, and maintenance of marine Diesels is presented from the standpoint of the operating engineer. The book is used as a text in United States merchant marine schools and maritime academies, and by men going up for license examinations.

JACOBS, ROBERT H., AND E. L. CADY

Marine engine and fire room guide. New York: Cornell Maritime Press, 1943. 740 p. illus. 19 cm. \$3.50. 4276

Contents (abridged): Team-work below. Useful suggestions and hints. How to stay alive. Simplicities of mechanics. Properties of engineering materials. Iron and steel. Non-ferrous metals. Pipes and fittings. How to sketch a pipe line. Fittings. Expansion joints. Valves. Traps and drains. Packing. Bearing. Couplings. Alignment. Lubrication. Pumps. Ejectors and eductors. Steam separators. Meters. Pressure and temperature control equipment. Temperature control regulators. Blowers. Heat. Combustion. Draft. Air heaters. Smoke and smoke indicators. Flue cases. Fuel oil. Soot and soot blowers. Water. Steam. Boilers. Economizers. Safety valves. Glossary of boiler terms. Care and repair of boilers. Insulating materials. Bolts for furnace linings. Reciprocating engines. Description of the Liberty ship engine. Steam valves and crosshead. Operation of reciprocating steam engines. Expansion control. Adjustments. Piston rings. Emergencies, casualties, and remedies. Feedwater systems. Turbines. Condensers. Evaporators and distilling plants. Safety. Index.

Note: A practical text for merchant marine crew members. An enumeration of the duties of each man and what he is expected to know is followed by discussions on piping, valves, packing, bearings, lubrication, temperature and pressure control equipment. There are full discussions of auxiliaries, boilers, feedwater systems, condenser engines, overhaul and general repair work. The latest equipment is also dealt with, such as electrical starting pumps, high-pressure boilers, and other installations found on the newer type vessels. There is a special section on Liberty ship engines, boilers, and auxiliaries.

LABBERTON, JOHN MADISON

Marine engineering. New York: McGraw-Hill Book Company, Inc., 1943. 439 p. illus. 23 cm. \$4.00. 4277

Contents: Hull design and resistance. Propellers. Propulsion shafting. Reduction gears. Marine fuels and combustion. Boilers, or steam generators. Turbines. Marine pumps. Heat exchangers. Forced draft and duct work. Marine electrical engineering. Refrigeration. Feed systems. Heat balance. The Diesel ship. Layout. Astern operation. Electric drive. Naval vessels. Ship's trials.

Note: Covers the various items of ship propulsion equipment to enable the designer and builder of propulsion machinery to understand, specify, and investigate the performance of these units. Feed systems, heat balance, and the determination of correct sizes of auxiliaries are covered in detail and actual cases are worked out for various types of steam and Diesel ships, electric drive, and naval vessels.

OSBOURNE, ALAN, EDITOR

Modern marine engineer's manual. New York: Cornell Maritime Press, 1941-43. 2 v. illus. 19 cm. Vol. I, \$6.00; Vol. II, \$4.00. 4278

Contents: Volume I: Mathematics and mechanics. Safety. Engineering materials, pipe fittings and packing. Thermodynamics. Combustion. Boilers. Boiler operation and maintenance. Reciprocating engines. Marine steam turbines. Bearings and shafting. Lubrication. Condensers. Pumps. Volume II: Marine Diesel engines. Modern marine refrigeration. Heating. Ventilation. Insulation. Steering gear and deck machinery. Modern marine electricity. Instruments. Propellers and propulsion. Tests and trials. Tables. Index.

Note: A technical manual of marine machinery and Diesel engines for engineers and others concerned with the design or operation of merchant ships. A special section, 263 pages long, in the second volume, deals with Diesel engines.

SEWARD, HERBERT LEE, EDITOR

Marine engineering. Written by a group of authorities. New York: The Society of Naval Architects and Marine Engineers, 1942-44. 2 v. illus. 28 cm. Set, \$11.00, single volume, \$6.00; shipping charges outside U.S., \$0.85 single volume, \$1.25 for set. 4279

Contents: Volume I, Design and main propulsion units: Propelling machinery, by J. E. Burkhardt. Power and revolutions, by J. E. Burkhardt. Procedure in general design, by Benjamin Fox. Boilers, by E. G. Bailey and T. B. Stillman. Reciprocating steam engines, by J. C. Workman and J. Lyell Wilson. Steam turbines, by A. R. Smith and W. E. Blowney. Diesel engines, by Louis R. Ford. Reduction gears, by C. R. Waller and A. Peterson. Propellers and shafting, by Richard H. Tingey. Materials and metallurgical engineering, by Paul Ffield. Index. Volume II, Principles and auxiliaries: Heat engineering and thermodynamics, by J. Kenneth Salisbury. Dynamic effects, by Frank M. Lewis. Heat exchangers: Part 1. Steam condensers, by Asa B. Steeves. Part 2. Shell and tube heat exchangers, by Joseph Price and Eugene P. Worthen. Pumps, blowers, compressors and ejectors, by Mark L. Ireland, Jr. Distilling plants, by Joseph Price. Refrigeration, air conditioning, ventilation and heating, by H. E. Parker. Piping, by Jakob L. Bergvall. Hull machinery, by John Flodin. Electric propulsion, by Harry C. Coleman. Electric plant, by H. Franklin Harvey, Jr. Lubrication, by A. Dudley Haff. Trials, by Walter E. Thau. Index.

Note: A comprehensive treatment of marine engineering, intended for the reader and student who is reasonably familiar with the underlying scientific principles and who has some acquaintance with merchant ships. The basic subjects of thermodynamics, theoretical and applied mechanics, and machine design are omitted although reference is occasionally made to these theories in developing certain analyses. The material is arranged for use as a textbook for both organized classes and self-instruction. There are many detailed design drawings, performance charts, and tables of specifications in each chapter. Theory is presented in considerable detail and examples of calculations are worked out. Extensive bibliographies are included at the end of each chapter.

SHULTERS, EARL S.

Modern marine refrigeration. Second edition. New York: Cornell Maritime Press, 1942. 169 p. illus. 19 cm. \$1.50. 4280

Contents: Marine refrigeration. Freon-12 refrigerating plants. Carrier centrifugal refrigeration system. Brunswick-Kroeschell ammonia refrigeration system. Carbon anhydride marine refrigerating plants.

Note: The author's discussion of the four methods of temperature control and the latest mechanical developments is designed for marine engineers. The general introduction covers the mechanical refrigeration cycle, air conditioning, ship's stores, and cargo. The four following sections discuss operation and maintenance, giving illustrations, trouble-shooting chart, and operating guide. Useful not only for new men but for refrigeration engineers who lack experience with the newest installations.

SMITH, PERCY DE WILLARD

Modern marine electricity. Third revised edi-

tion. New York: Cornell Maritime Press, 1943. 384 p. illus. 19 cm. \$2.50. 4281

Contents: Introduction. Light and power. Generators. Motors. Motor starting and control equipment. Operation of motors and generators. Electric propulsion. Electro-magnetic slip couplings. Interior communication. Maintenance. Tables and other useful information. Index.

Note: Prepared principally for experienced operating marine electricians, but useful also to marine engineers and shore electricians in the marine field. The various types of electrical equipment and their maintenance are covered. This revised third edition contains data on turbo-electric alternating-current systems used on large Maritime Commission tankers and on the gyro-compass and the gyro-pilot.

UNITED STATES. WAR DEPARTMENT

Outboard motors. War Department Technical manual TM 5-278. War Department, 30 June 1944. Washington: Government Printing Office, 1944. 155 p. illus. 23 cm. \$0.30. 4282

Contents (abridged): Description of outboard motors. Technical application. Storm-boat motor. Trouble chart. P.O.L.R. 15. Appendixes: Storm-boat motor illustrations. P.O.L.R. motor illustrations.

Note: This manual provides basic information on the operation, maintenance and repair of outboard motors. Instructions relate primarily to the 55 hp. Evinrude model 8008, and the 22 hp. Johnson model P.O.L.R.-15 outboard motors.

Seamanship

COCHRANE, EDWARD LULL, AND JOHN C. NIEDERMAIR

Subdivision, stability, and construction of merchant ships, with particular reference to floodable length and stability in damaged condition. Washington, D.C.: Government Printing Office, 1935. 109 p. illus. 23 cm. (United States. Navy Department. Bureau of Construction and Repair. C. and R. bulletin no. 8) Paper, \$0.30. 4282a

Contents: Preface. Historical. Subdivision. Floodable length. Standards of subdivision. Special rules as to subdivision. Longitudinal subdivision and decks. Doors, airports, side scuttles, scuppers, pumping, drainage. Loadline for freeboard. Stability. Classification societies' rules for scantlings. Fire protection. Loading and handling of ships. Stowage factors and permeabilities. Bibliography. Plates.

Note: The primary purpose of this bulletin is to set forth the basic principles governing watertight subdivision and stability of merchant vessels in order that naval personnel, and particularly members of the Construction Corps, may have immediately available acceptable standards for use when merchant vessels are taken over by the Navy.

CORNELL, FELIX M., AND ALLAN C. HOFFMAN, EDITORS

American merchant seaman's manual, for seamen by seamen. Revised edition. New York: Cornell Maritime Press, 1942. 670 p. illus. (part col.) 19 cm. \$3.50. 4282b

Contents: Preface. Marlinspike seamanship. Wire and wire splicing. Blocks and tackle. Deck seamanship. Cargo stowage and handling. Canvas work. Paints and painting. Ground tackle. Steering gear. Examination guide for lifeboatmen and able seamen. Handling small boats under oars. Handling small boats under sail. Signals. Tankerman's guide. Construction and stability. Navigation. Weather. Ship sanitation and first aid. Medical relief for seamen. The rules of the road. Instructions to mariners in case of shipwreck. Consular regulations affecting relief for seamen. Laws pertaining to merchant seamen. General information. Index.

Note: A comprehensive handbook intended both for practical use on shipboard and as a textbook in preparation for examinations for certificates. Typical examination questions are included. International code flags are reproduced in color. The chapter on general information contains weights and measures, facts on distances and fast ocean passages and size of steamships and motor ships, naval education system, coast guard, maritime commission, etc.

KNIGHT, AUSTIN MELVIN

Modern seamanship. Tenth edition, rewritten and revised by the officers of the Department of Seamanship and Navigation, United States Naval Academy, Annapolis, Maryland. New York: D. Van Nostrand Company, Inc., 1941. 845 p. illus. (part col.) 22 cm. (Van Nostrand's nautical manuals) \$5.00. 4283

Contents: The ship. The hull and fittings of a ship. Rope. Knotting and splicing. Mechanical appliances on board ship. The compass, log and lead—radio direction finder—submarine signals. Boats. Handling boats in a surf. Ground tackle. Mooring. Carrying out anchors. The rules of the road. Maneuvering to avoid collision. Ship handling. Station keeping and maneuvering in formation. Towing. Man overboard. Rescuing the crew of a wreck. Stranding. Weather. Assistance by public vessels in distress. Placing a ship in drydock. Sailing ships. Tables. Buoyage. Artificial respiration. Saving drowning persons. Indications of hurricane. Weather and storm signals. Naval terms and definitions. Index. The inland rules of the road. Pilot rules.

Note: For several decades this book has been an official text in seamanship at the U.S. Naval Academy. Its contents consist substantially of the knowledge of seamanship that is needed by the merchant ship officer as well as the naval officer, although certain general information has been included that applies primarily to warships. New material in this edition includes data on weather and weather signals, first aid methods, the glossary of naval terms, and the new rules of the road.

MANNING, GEORGE CHARLES

Manual of ship construction; the fundamental principles of naval architecture for the operating personnel of the merchant service, particularly those who are, or desire to become, officers. New York: D. Van Nostrand Company, Inc., 1942. 319 p. illus. 22 cm. \$2.75. 4283a

Contents: Ship language. Ship structure. Hull equipment and systems. Calculation of buoyancy and tonnage. Principles of stability. Buoyancy and stability in damaged condition. Steering and rudders. Ocean waves and rolling. Propulsion. Appendix. Nomenclature of ships.

Note: Prepared for the instruction of cadets in various maritime academies in the United States. It explains the characteristics of a ship and the methods of ship construction from the standpoint of operating officers—both deck officers and engineering officers. The fundamental principles are concisely explained, with numerous illustrations.

NORBY, HAAKON

Questions and answers for deck officers. New York: McGraw-Hill Book Company, Inc., 1944. 422 p. illus. (part col.) 18 cm. (A McGraw-Hill practical manual) \$3.50. 4284

Contents: Cordage, canvas, and wire rope. Blocks, tackles, masts, and booms. Signals. Small-boat handling. Rules of the road. Fire and lifesaving apparatus. Safety precautions. Rules and regulations. Navigation laws. Nomenclature of structural members. Ground tackle, anchor maneuvers. Steering gear, maneuvering, and docking. Instruments and accessories used in navigation. Duties. Cargo. Charts. Definitions used in navigation. Area and volume. Navigation. Miscellaneous questions. Weather elements. Duties of chief mate. Ship's business. Rules, regulations, and navigation laws. Ship's construction. Miscellaneous problems.

Note: A compilation of 900 questions, with answers, intended to assist young seamen starting on their career in the U.S. Merchant Marine, to prepare themselves for license examinations. The questions are typical of those given by examining boards on

the Atlantic, Pacific, and Gulf coasts, and the answers suggest by their brevity or completeness the type most frequently required by the examiner.

REDIFER, ALBERT E.

Lifeboat manual, containing the very latest information on the construction, operation and equipment of lifeboats, rafts, floats and buoyant apparatus. With illustrations by the author. New York: Cornell Maritime Press, 1944. 163 p. illus. 19 cm. \$2.00. 4285

Contents: Foreword. Acknowledgment. Introduction. Lifeboats. Drills. Boats, rafts, equipment. Launching. Seamanship. Landing. Fishing. First aid. Miscellaneous questions. Terms used in sailing. Useful hints. Index.

Note: This book is intended for seamen preparing for examinations for certificates of efficiency, and for others interested in lifeboats. Drawings show the different parts of a lifeboat with their names, and the various articles of equipment required on different classes of lifeboats, liferafts, and life floats.

RICHARDS, PHILIP MACLEOD, AND JOHN J. BANIGAN

How to abandon ship. New York: Cornell Maritime Press, 1943. 196 p. illus. 18 cm. \$1.00. 4286

Contents: Prepare yourself. Abandon ship. Buoyancy. Swinging out. Lowering. Waterborne. Setting sail. Open boat seamanship. Navigating. Transports. Liferafts. Tankers. Medical. Morale. Water and thirst. Food and hunger. Wind and rain. Freezing weather. Shipboard precautions. Engine room. Tanker safety. Tropics. Devices and equipment. Abstract of Banigan's voyage. Index.

Note: This pocket manual is intended mainly for the personnel of merchant vessels in time of war as a guide to launching a lifeboat from a sinking ship and surviving the subsequent perils of storm, thirst, heavy seas, sunburn, and other conditions of shipwreck.

RIESENBERG, FELIX

Standard seamanship for the merchant service. 627 illustrations. Second edition. New York: D. Van Nostrand Company, Inc., 1936. 942 p. illus. (part col.) 22 cm. \$7.50. 4287

Contents: Types of vessels. The hull. Ropes, knots, splices. Blocks and tackles. Steamer rigging, cargo gear. Sailing ship rigging, sails, canvas work. Deck machinery. Holds, peaks, tanks. Stowage. Carriage of live stock. The tanker. Passenger vessels. Boats. Compass, lead, log, piloting. The bridge. Rules of the road at sea. Ground tackle. Handling a steamer. Handling a sailer. Weather at sea. Safety on board ship. Ship maintenance.

Note: This textbook is used for the instruction of cadets in various maritime academies in the United States. It explains the navigation and general handling of ships at sea, with particular attention to the needs of merchant marine officers. Safety devices and safety appliances are discussed in considerable detail.

TURPIN, EDWARD A., AND WILLIAM A. MAC- EWEN

Merchant marine officers' handbook. New York: Cornell Maritime Press, 1942. 740 p. illus. (part col.) 18 cm. \$5.00. 4288

Contents: The everyday labors of a ship's officer. Instruments of navigation. Piloting. Tides and currents. Sailings. Celestial navigation. Meteorology. Cargo. Shiphandling. Rope, tackles and ground tackle. Safety. Ship construction and stability. Signals. Rules of the road. United States navigation laws. Fuel conservation and engineering knowledge for deck officers. First aid and ship sanitation. Appendices: Examinations required for licensed officers. Mathematics. Tables and useful information. Shipbuilding terms and abbreviations. Paints and painting; wire splicing. Spanish nautical and commercial terms. War conditions at sea. Enlistments in the naval reserve. Index.

Note: A manual for candidates for licenses as ship's officers and also for older experienced officers. The treatment presup-

poses a familiarity with the fundamentals of seamanship as far as requirements for an original license. The general day-to-day duties of the ship's officer are discussed, and special problems are treated. A special section describes war conditions at sea, with data on mines, submarine attacks, and lifeboats.

Cargo Handling

FORD, ALFRED GEORGE

Handling and stowage of cargo. Prepared for the United States Maritime Service. Second edition. Scranton, Pa.: International Textbook Company, 1942. 457 p. illus. 21 cm. \$3.75. 4288a

Contents: Masters' and officers' duty and responsibility to cargo. Inspection of holds before loading and log-book entries. Dunnage and its uses. Principles of stowage. Prevention of damage to cargo. Load line marks. Arithmetic of stowage. Stowage plans. Ventilation. Refrigeration. Commodities. Dangerous cargo. Mechanical appliances on shipboard. Law governing carriage of goods by sea. Ships papers and entry and clearance of vessels. Appendix: Table of stowage factors. Grain loading regulations. Live stock regulations.

Note: This book on cargo handling and stowage is written in understandable and direct style and covers modern American practice. This edition has been enlarged by three additional chapters and the appendix. It is intended for recruits as well as experienced seamen. The subject is regarded from the viewpoint of a ship's officer.

GAROCHE, PIERRE

Stowage, handling and transport of ship cargoes. New York: Cornell Maritime Press, 1941. 437 p. illus. 19 cm. \$3.50. 4289

Contents: Preface. Introduction. Problems of ship operation. Preparation of the ship for loading. Loading of cargoes. Stowage. Transportation. Damage. Carriage of special cargoes. Loading plan. Stowage factors and data on various commodities. Miscellaneous notes. Appendix. Index.

Note: Translated from the French, in which it was published under the title *Arrimage, manutention et transport des marchandises à bord des navires de commerce*, Paris, 1937, this work has been adapted for American use. Assuming that the reader will have a general knowledge of the subject, the author describes with text and illustrations how to prepare a loading plan for a complicated general cargo, covering handling, stowage, preven-

tion of damage, etc. A list of more than a thousand world ports describes briefly the facilities of each port.

LEEMING, JOSEPH

Modern ship stowage, including methods of handling cargo at ocean terminals. Washington, D.C.: Government Printing Office, 1942. 719 p. illus. 23 cm. (United States. Bureau of Foreign and Domestic Commerce. Industrial series no. 1) \$1.50. 4290

Contents: Foreword. Receipt and handling of cargo at ocean terminal. Loading and unloading equipment and methods. Types of ocean-going vessels. Principles of stowage. Stowage for maximum use of ship's capacity. Stowing to prevent damage or danger to the ship or crew. Stowing to avoid damage to cargo. Damage from temperature changes during the voyage. Stowage of special cargoes: Alcoholic liquors. Coal and coke. Cotton. Dangerous goods. Fresh fruits. Grain. Jute. Livestock. Lumber. Ores. Petroleum products. Rice. Sugar. Refrigerated cargoes. Commodities and their stowage. Stowage of ship's stores. Appendix: Stowage factors listed. Shipping, packing, and stowage terms and definitions. Weights and measures used in shipping. American Carriage of Goods by Sea Act, 1936. British Carriage of Goods by Sea Act, 1924. Canadian Water Carriage of Goods Act, 1936. Australian Sea Carriage of Goods Act, 1924. The Harter Act.

Note: This volume is a comprehensive manual describing the basic principles of stowing sea-borne cargoes. It is intended for the use of steamship operators and their staffs, of ships' officers and deck personnel, and of exporters and importers.

UNITED STATES. WAR DEPARTMENT

Water transportation, stevedoring, and stowing. Technical manual 10-381. Washington, July 18, 1942. Washington: United States Government Printing Office, 1942. 156 p. illus. \$0.25. 4291

Contents (abridged): Organization and equipment for handling cargo: Hatches. Bovins and sideports. Handling ships cargo. Equipment. Special information. Legal points, covering a stevedore's proposal, eastern shores, U.S.A. Operations. Gear. Specifications. Loading the cargo: Signals for the signalman. Loading. Stowing the cargo: Stowing in the hold. Stowage guide. Appendixes (including bibliography). Index.

Note: Directions for loading ships, stowing, and storage with illustrations of all types of equipment and instructions for each type of cargo—from fruit to locomotives.

NAVIGATION

AGETON, ARTHUR AINSLEY

Dead reckoning altitude and azimuth table. Third edition. Washington, D.C.: Government Printing Office, 1938. 49 p. illus. 24 cm. (United States. Hydrographic Office. Publication no. 211) \$0.90. 4292

Note: The Ageton dead reckoning tables, known familiarly as "H.O. 211," have several distinctive features as follows: the dead reckoning position of the ship is used for working sights and plotting lines of position; there is no interpolation for practical navigation; the azimuth is most positively determinate; and the solution is short, simple, and uniform under all conditions. This third edition contains two additional problems to illustrate the use of the table, and one additional use has been included. Miscellaneous conversion and correction tables are printed on the end papers.

AGETON, ARTHUR AINSLEY

Manual of celestial navigation. New York: D. Van Nostrand Company, Inc., 1942. 103 p. illus. 24 cm. \$1.85. 4293

Note: This book gives tables for two methods of navigation, with examples of their use. There is an entirely new arrangement of tables for solution of problems in celestial navigation from an assumed position, and there is also a new application of this author's older methods published in H.O. 211. This second method solves sights from the dead reckoning position of a ship. The material in this book offers all the advantages, with improvements, of H.O. 211, and includes a method as fully universal as H.O. 214.

BLACKBURN, ELBERT F.

Basic air navigation. New York: McGraw-Hill Book Company, Inc., 1944. 300 p. illus. 23 cm. \$4.00. 4294

Contents: The basic problem of the navigator. Preflight duty of the domestic airline navigator. Preflight duty of the ocean navigator. Flight instruments and their use. Radio aids to navigation. Lines of position and their use. Radius of action and interception. Principles of celestial navigation. Practice of celestial navigation. Use, care and calibration of navigation instruments. Practical suggestions to the navigator.

Note: Based on the author's actual flight experience, this book presents a simple analysis of the problems confronting the air navigator from the time the flight is first planned until the destination is reached. The preflight, flight, and approach problems are presented and analyzed in the order encountered in practice. Problems involving data from the navigator's instrument panel are accompanied by a reproduction of this panel as the navigator actually sees it in flight.

BOK, BART JAN, AND FRANCES WOODWORTH WRIGHT

Basic marine navigation. Boston: Houghton Mifflin Company, 1944. 422 p. illus. 25 cm. \$4.50. 4295

Contents: Introduction to marine navigation. Aids to navigation. Charts and publications. The lead and the log. The compass and its errors. Compass compensation. Tides and currents. Piloting. Dead reckoning and the sailings. The maneuvering board. Marine meteorology. The sextant. The basis of celestial navigation. Time-keeping and the Nautical Almanac. Navigation by the sun. Navigation by the stars. Solving the astronomical triangle. Navigation in emergencies. Problems. Recommended books for further study. Answers to problems. Complete Ageton tables.

Note: A simple, yet complete, treatment of coastwise and offshore navigation. The section on coastwise navigation emphasizes

piloting, dead reckoning, the use of the compass, compass-corrections and compass-compensations, tides and currents. In the chapter on celestial navigation tabular methods are used. Much attention is given to the taking of sights. Chapters on weather and on navigation in emergencies are included. A kit of practice material including many charts and blank forms is offered by the publisher for \$1.70.

BOND, DONALD S.

Radio direction finders. New York: McGraw-Hill Book Company, Inc., 1944. 287 p. illus. 21 cm. (Radio communication series; Beverly Dudley, consulting editor) \$3.00. 4296

Contents: General considerations. Wave propagation. Directive antenna systems. Aural null direction finders. Performance characteristics of loop input circuits. Visual direction finders. Radio navigation aids. Appendixes: Radiation due to an infinitesimal dipole. Calculation of field strength for propagation over plane earth. Extended dipole antenna. Phase relations in coupled circuits.

Note: A text and reference work for electrical engineers specializing in the design or theory of direction finders for aircraft, shipboard, or fixed station use. It combines qualitative description of the practical systems in use with an analytical study of the underlying phenomena. Particular attention is paid to ultra-high frequencies, Adcock systems, visual direction finders, etc. Much of the analytical material is original. A large part of the book originated as lectures for engineers of the Radio Corporation of America at the Moore School of Electrical Engineering at the University of Pennsylvania. There are chapter bibliographies.

BRADLEY, AMOS DAY

Mathematics of air and marine navigation. New York: American Book Company, 1942. 103 p. illus. 22 cm. \$1.00. 4297

Contents: Geometry of the earth. The sailings and dead reckoning. Piloting. Special problems of air navigation. Spherical trigonometry of the earth. Nautical astronomy. Celestial navigation; the Summer line. Index. Five-place logarithms of numbers. Logarithms of trigonometric functions.

Note: An introductory textbook which is designed to provide the student with a substantial background in navigation. Some knowledge of mathematics is required, but those who have completed the usual high school course in trigonometry should be able to use the book. Laymen interested in learning about the problems encountered in navigating aircraft and surface vessels will also find the book interesting.

BROUWER, DIRK, AND OTHERS

Spherographical navigation, by Dirk Brouwer, Frederic W. Keator, and D. A. McMillen, foreword by Captain P. V. H. Weems. New York: The Macmillan Company, 1944. 200 p. illus. 19 cm. \$5.00. 4298

Contents: The earth. The celestial sphere. Time and the use of the air almanac. The instruments used. Elementary plotting on the sphere. The fix. Daytime navigation. Polar flights. Day's work problem. Special use of the sphere. Plotting problems. Appendix.

Note: A manual of instruction on a new system of celestial navigation. Practically no calculations are required; and no tables are necessary except the *American air almanac* or the *United States nautical almanac*. No solution of the spherical triangle is made for the computed altitude based upon either the dead reckoning position or an assumed position. Aside from the simplification of the solution provided by the method, and the speed with which a solution can be obtained, the advantage lies in the ease with which it can be learned. This is largely due to the fact that the learner has a visual picture of his problem before him at all times. Twenty-one figures illustrate the text.

CUGLE, CHARLES HURST

Cugle's Practical navigation. New edition, thoroughly revised and brought up to date by Lieut.-Commander I. J. Stephens. New York: E. P. Dutton & Company, Inc., 1943. 736 p. illus. 24 cm. \$7.00. 4299

Contents (abridged): The international and inland rules of the road. Deck officer's information. Extracts from general rules and regulations (ocean and coastwise) and navigation laws of the United States. Definitions used in ship stability and questions and answers in steel hull construction. Explanation of tables in the *American practical navigator* (Bowditch). Day's work or ship's position by dead reckoning. Distance off fixed point by bearings. Speed of ship by wheel and percentage of slip. Fuel conservation. Construction of a mercator chart. Middle latitude sailing. Great circle sailing (including composite sailing). Time. Latitude by meridian altitude of sun. Meridian passage of fixed star. Latitude by meridian altitude of fixed star. Latitude by meridian altitude of planet. Latitude by polaris (sidereal time method). Latitude by polaris (hour angle method). Noon interval (H.O. No. 202) Deviation by time azimuth of sun. Longitude by sun. Combination of longitude by sun, altitude, azimuth, meridian altitude of sun and mercator sailing. Correcting longitude. Longitude at sunrise and sunset. Longitude by fixed star. Longitude by moon. Line of position by Sumner's "chord" method (using two assumed latitudes). Line of position by Sumner's "tangent" method. Line of position by Marcq St. Hilaire method (cosine-haversine formula). Line of position by H.O. No. 208 method (Dreisonstok). Line of position by H.O. No. 211 method (Ageton). Greenwich hour angle (G.H.A.) method. Identification of stars. Tide and current tables.

Note: In this book of rules and problems, the author's *Simple rules and problems in navigation*, third edition, New York: E. P. Dutton and Company, 1919, and his *Practical advanced navigation*, New York: E. P. Dutton and Company, 1922, have been consolidated. The work has appeared under the present title in various editions since 1924. In the present edition, all problems have been reworked for 1943 and recent changes in solution procedure have been incorporated.

CUGLE, CHARLES HURST

Cugle's two-minute azimuths. New edition, revised by Lieut.-Commander I. J. Stephens. New York: E. P. Dutton & Company, Inc., 1943. 2 v. 28 cm. \$12.00; each volume, separately, \$6.00. 4300

Contents: Volume 1. Latitude 0° to 35°, declination 0° to 23°, same and contrary names. Volume 2. Latitude 35° to 65°, declination 0° to 23°, same and contrary names.

Note: These tables give the azimuths or true bearings of the sun for intervals of two minutes between sunrise and sunset. The true bearings of other celestial bodies can be determined for those situations in which the declination and hour angle values are within the limits of the tables. The tables are printed in large, clear type.

DEGON, ELMER F., AND ALLAN C. ZWENG

Practical manual of E-6B computer. North Hollywood, Calif.: Pan American Navigation Service, 1944. 124 p. illus. 26 cm. \$2.00. 4301

Contents: Explanation of the circular slide rule. Distance conversions. Air density corrections. Altimeter corrections. Rate, time, distance problems. Fuel consumption. Multiplication and division. Radius of action formula. Miscellaneous calculations. Vector problems. Triangles of velocities. Drift problems. Drift on two headings. Radius of action to the same base. Off-course problems. Interception. Alternate airport. Radius of action to a moving base. Relative search. Problematical flight. Additional problems for practice. Answers, examples for practice. Nomenclature. Appendix. Abbreviations. Index.

Note: As of 1944 the Dalton E-6B type computer was standard with the U.S. Army Air Forces and is one of the most widely used of the various types of air navigational computers. The table of contents above indicates the types of problems which may be solved with the use of the Dalton computer as demonstrated in this book. Numerous illustrations show the various settings of the instrument for different variables. A large number of problems and their solutions are included. Intended primarily for civilian pilot instruction but applicable to military navigation courses as well.

DIMICK, CHESTER EDWARD, AND CUTHBERT C. HURD

Mathematics for mariners. New York: D. Van Nostrand Company, Inc., 1943. 253 p. illus. 22 cm. \$2.75. 4302

Contents: Numerical calculations. Logarithms. Use of tables. Equations. Geometry. Trigonometry. Trigonometric functions of large angles. The general oblique triangle. Vectors. Relative displacement and velocity. Tables. Index. Practice maneuvering board sheets.

Note: The authors of this text are officers in the United States Coast Guard and teachers in the United States Coast Guard Academy. They have prepared this text to teach or review the basic essentials of mathematics required for courses in navigation, gunnery, seamanship, and elementary engineering. Elementary problems from these fields are used throughout the text to illustrate the application of the mathematical methods. A number of special developments, including the maneuvering board sheets that are used for convoy and fleet problems, are presented and explained.

DREISONSTOK, JOSEPH YOUNG

Navigation tables for mariners and aviators. Sixth edition. Washington, D.C.: Government Printing Office, 1942. 109 p. illus. 23 cm. (United States Hydrographic Office. Publication no. 208) \$1.20. 4303

Note: These tables are intended to be used in conjunction with the *American Nautical Almanac* and *American Air Almanac*. The method of solving navigational observations as here given is applied to all sights regardless of the position of the celestial body, or whether that body is the sun, moon, planet, or star. It requires few figures and gives a quick solution for determining the line of position, the compass error, the meridian altitude, the Great Circle course and distance, the identification of unknown stars. Space is devoted at the end of the volume to a full explanation of the construction of these tables, together with numerous examples of their use in actual problems. Miscellaneous conversion and correction tables are printed on the end papers. There are minor revisions in the sixth edition.

DUTTON, BENJAMIN

Navigation and nautical astronomy; a textbook on navigation and nautical astronomy, prepared for the instruction of midshipmen at the United States Naval Academy. Eighth edition. Revisions by the Department of Seamanship and Navigation, United States Naval Academy. Annapolis, Md.: United States Naval Institute, 1943. 568 p. illus. (part col.) 26 cm. \$2.00. 4303a

Contents: Definitions, position, direction, and distance on the earth's surface. Instruments for determining direction and measuring distance. The magnetic compass. The gyro-compass. The sailings (except great circle sailing). Great circle charts, great circle sailing, composite sailing, radio bearings. Piloting. Preliminary definitions of nautical astronomy. Lines of position from celestial observations. The sextant, its use and adjustment, correction to sextant altitudes. Derivation of computed altitude and azimuth. Time. The *Nautical Almanac* and the *Air Almanac*. Observations for latitude. Watch time of L.A.N. Reduction to the meridian. Solutions of observations for lines of position. Curve of magnetic azimuths of the sun. Other methods of solving the astronomical triangle. H.O. 208, H.O. 211, H.O. 214, and Weems' *Star altitude curves*. A navigator's work at sea. The moon's phases and tidal effect. Moonrise and moonset. Tide and current tables. Identification of stars and planets. Use of the maneuvering board. Aerial navigation. Summary. Index.

Note: The standard text and reference book for the midshipman and naval officer. Features of the eighth edition are the new illustrations, some in color, which enable the student to visualize the subject of navigation, new material on the gyro-compass and other instruments, and other revisions to bring the subject into accord with the latest nomenclature and practice.

FAVILL, JOHN

Primer of celestial navigation. Second edition, revised and enlarged. New York: Cornell Maritime Press, 1943. 262 p. illus. 19 cm. \$2.00. 4304

Contents: Part I, Fundamentals: Astronomical. Time. The Nautical almanac. Altitudes. The sextant. The compass. The astronomical triangle. Trigonometry. Logarithms. Part II, Procedures: Introduction to position finding. Latitude. Longitude and chronometer error. Azimuth and compass error. Sumner lines of position. The Saint-Hilaire method. Short-cut systems. Special fixes. Polar position finding. Identification. Tabular summary. Part III, Supplementary: The sailings, dead reckonings, and current. The day's work. Essential equipment. Practical points. Navigator's stars and planets. Reference rules for book problems. Finding G.C.T. and date. Abbreviations. Forms. Problems. Selected bibliography. Index.

Note: A textbook for both beginners and practical navigating officers. An attempt is made to set forth the principles and procedures, both simple and complex. In this second edition the author has added his own method for determining more exact time of transit of any navigational body, reducing Dutton's method from sixteen lines to ten.

FERRY, ERVIN SIDNEY

Applied gyro dynamics, for students, engineers and users of gyroscopic apparatus. New York: John Wiley & Sons, Inc., 1932. 277 p. illus. 23 cm. \$4.00. 4305

Contents: Definitions and principles of elementary dynamics: Translation and rotation. Simple harmonic motion. The motion of a spinning body under the action of a torque. The gyroscopic pendulum or pendulous gyroscope: General properties. Gyro-horizontals and gyro-verticals. Gyroscopic antiroll devices for ships: The oscillation of a ship in a seaway. The inactive type of gyro ship stabilizer. The active type of gyro ship stabilizer. Navigational compasses: The various types. The natural errors to which the gyro-compass is subject. The Sperry gyro-compass. The Brown gyro-compass. The Anschütz gyro-compass. The Arma gyro-compass. The Florentia gyro-compass. Gyroscopic stabilization: General principles. Gyroscopically stabilized mono-rail cars. Index.

Note: The purpose of this textbook is to bring gyro dynamics out of the realm of mathematical physics and to present it to engineers and students having the mathematical equipment of the ordinary graduate of engineering or physics. The work presents the fundamentals of gyroscopic theory without involving differential equations or advanced calculus, gives a review of dynamics and the theory of motion in a spinning body, and describes the actual operation of all gyroscopic devices of industrial importance in use as of 1932.

FIELD, RICHARD MONTGOMERY, AND HARLAN T. STETSON

Map reading and avigation, an introduction. New York: D. Van Nostrand Company, Inc., 1942. 129 p. illus. 29 cm. \$2.50. 4306

Contents (abridged): Introduction. Part I, Map reading: History and methods of cartography. The moon. Earth in space. Type topographic areas. Part II, Avigation: Celestial navigation. The technique of determining latitude. Remarks on observing the meridian altitude. Hour angle and the determination of longitude. Lines of position. H.O. 214 tables. Corrections to observations. The "Air almanac." Observation of the moon and planets. Lines of position. Star observations. Instruments of avigation. The compass. Compass corrections. Charts. Time zones. Charting the course. Wind drift. Appendix: Supplementary problems. Suggested form for computation. Excerpts from the "Air almanac." Excerpts from H.O. 214 tables. Reference books and materials. Vocabulary of special terms. Index.

Note: A manual for class instruction, designed for beginners with elementary knowledge of algebra and plane geometry. It aims to impart such essentials as will enable the student to interpret aerophotographs and contour maps; recognize the significant topographic features of North America; acquire familiarity with the *Air Almanac* and H.O. 214 tables; determine position in the air and lay out courses for flight. There are numerous maps, model views, and airplane photographs.

FORBES, ALEXANDER

Offshore navigation in its simplest form, for all who sail the oceans out of sight of land. Easy methods for locating one's self at sea with the sextant from sun, moon, and star sights, together with the necessary tables for determining positions during the yachting season from latitudes 32° to 45°. Boston: Eastern Science Supply Company, 1935. 123 p. illus. 26 cm. \$2.25. 4307

Note: This short manual for the practical navigator is largely a condensation of the United States Hydrographic Office, Bulletin No. 203, entitled *The Sumner line of position of celestial bodies*, Washington, 1933 (see Index), and is designed as a simplified, less-bulky version of the larger work for the use of those navigators who confine their cruising to spring and summer in latitudes 32° to 45° north.

HYATT, DELWYN, AND BENNETT M. DODSON

Mathematics for navigators. New York: McGraw-Hill Book Company, Inc., 1944. 106 p. illus. 20 cm. \$1.25. 4308

Note: Devoted exclusively to mathematical preparation for the study of navigation, this book reviews addition, subtraction, algebra, logarithms, plane geometry, plane trigonometry, and spherical trigonometry for those having previously studied these subjects. For students taking up navigation without previous training in these branches of mathematics, the book is sufficiently comprehensive to enable them to approach navigation with a thorough understanding of the mathematics involved. The explanation of Agerton's method (H.O. 211) is especially clear.

JORDANOFF, ASSEN

Through the overcast; the art of instrument flying. New revised edition. New York: Funk & Wagnalls, 1943. 356 p. illus. 25 cm. \$3.00. 4309

Contents (abridged): How to become a weather detective. Stability and instability. Biography of the air masses and their identification. Weather map and teletype symbols. Atmospheric front and cyclones. Flight scares: fog, thunderstorms, icing. Making the weather map. Practical forecasting for the airman. Weather and airline flying. Weather instruments. Airplane instruments. Sperry gyro instruments. A chat on the aircraft power plant. Fuel and lubrication. Airplane behavior. Dead reckoning. Power vs. time and distance. Airway radio flying and orientation. Instrument technique: how not to be confused. Celestial navigation.

Note: The various phases of weather phenomena and the art of instrument flying are presented in a readable manner for the professional airman, the amateur flier, the ground crew, and the general public. The explanations of technical matters are further simplified through the effective use of illustrative drawings and diagrams. There is an index.

KELLS, LYMAN MORSE, AND OTHERS

Navigation, by Lyman M. Kells, Willis F. Kern, and James R. Bland. New York: McGraw-Hill Book Company, Inc., 1943. 479 p. illus. 23 cm. \$5.00. 4310

Contents: Fundamental mathematics for pilots. Instruments. Charts. Piloting. Navigation aids, rules of the road, tides and currents. Ship and plane maneuvers. Review of spherical trigonometry. Sailings and nautical astronomy. Time. Air almanac. Meridian altitude. Fix. Nautical astronomy and star identification. Appendix: logarithms; range finder; the Hagner Planetarium; regulation forms used at the United States Naval Academy.

Note: An elementary, practical course dealing with currently used methods in navigation. The mathematical requirements for each method are outlined, and the book contains illustrative examples and exercises for students. A two-volume edition in which volume I treats coastal and inland waterways piloting and volume II treats celestial navigation and nautical astronomy is available from the same publisher. Also the first four chapters are published separately under the title *Piloting and maneuvering of ships*, New York, McGraw-Hill, 1943, 181 p., \$2.00.

KIELHORN, LOYD VINEYARD

A treatise on compass compensation, a textbook for academies and colleges, and a reference manual for navigating officers. New York: D. Van Nostrand Company, Inc., 1942. 195 p. illus. 23 cm. \$2.25. 4311

Contents: The physical representation of the theory: The ship as a magnet. The soft iron of a ship. Analysis. Application of theory to practice: General information. Deviation. Variation and the compass error. Mechanical correction. Appendix.

Note: This book gives a systematic account of the problems of compass accuracy, including a number of new developments. It describes a new method of compensating a ship on a single heading. It includes an essential modification in the mechanical correction of semi-circular deviation, wherein a method is described for eliminating errors of computation, variation, and the azimuth circle. Other important features include the dygogram, a discussion of the quantitative effects of subpermanent magnetism, and graphic representation by force and angle diagrams of the forces affecting the compass.

LOTT, DAVIS NEWTON

Handbook of the nautical road, illustrated by Lieutenant Davis Newton Lott; special plate illustrations by Lieutenant R. A. McCoy. Chicago: F. J. Drake and Company, 1944. 310 p. illus. (part col.) 23 cm. \$3.00. 4312

Contents: Text of the international and inland rules of the road. Special illustrations. Night-time illustrations of crossing and passing cases. Daytime crossing and passing cases. Night-time crossing and passing cases involving three vessels. Fog signals involving two or more vessels. General questions and answers on rules of the road. Miscellaneous tables with questions and answers. Fill-in questions on rules of the road.

Note: This handbook was written primarily to help Naval officers, midshipmen, and men under instruction on shore to visualize lights carried by ships at sea when operating under the International or Inland Rules of the Nautical Road. It also has been designed to prove of value when used at sea. Brief daily references to the many passing, crossing, and overtaking cases illustrated help prepare the user to recognize and avoid impending collisions with greater ease and assurance. These cases are illustrated mainly by colored representation of ships' lights as seen at night by approaching vessels, with problems on the code indicated. Daylight problems are also illustrated.

LYON, THOBURN CASSADY

Practical air navigation. Washington, D. C.: Government Printing Office, 1940. 245 p. illus. 26 cm. (United States. Civil Aeronautics Administration. Civil aeronautics bulletin no. 24) Paper, \$1.00. 4312a

Contents: Preface. The problems of air navigation. The earth: its form, coordinates, and representation. Instruments. Chart reading. Cross-country flying—piloting. Air navigation by dead reckoning. Radio navigation. Air navigation computer, graphs, and tables. The practice of navigation. Celestial navigation. Appendix. Index.

Note: This book was designed for use as a textbook of air navigation in the controlled private ground course of the Civilian Pilot Training Program. It supersedes U.S. Coast and Geodetic Survey Special publication no. 197, *Practical air navigation and the use of the aeronautical charts of the U.S. Coast and Geodetic Survey*, by the same author, being in effect the fourth edition of that publication. The form and arrangement of former Special publication no. 197 have been changed somewhat to provide greater ease of reading and improved methods of instruction. Several chapters have been added which were not in the old publication, and the material has been brought abreast of later developments. Technical and semitechnical terms are defined in a glossary, which appears in the Appendix along with bibliographies and other data. The book is intended as an important auxiliary for pilots to the aeronautical charts issued by the Coast and Geodetic Survey.

McINTOSH, COLIN HUGH

Radio navigation for pilots. New York:

McGraw-Hill Book Company, Inc., 1943. 171 p. illus. 21 cm. \$2.00. 4313

Contents: Radio-navigation systems. The radio range system. Beam techniques. Orientation methods. The instrument approach. The radio direction-finding loop. D/F loop navigational techniques. Position fixes by D/F bearings. The running fix. The radio compass.

Note: Radio navigation is here presented from an aircraft viewpoint and is strictly limited to the practical treatment demanded by pilots.

MIXTER, GEORGE WEBBER

Primer of navigation. Second edition. New York: D. Van Nostrand Company, Inc., 1944. 508 p. illus. (part col.) 23 cm. \$4.50. 4314

Contents: Introduction. Tools of the trade. The magnetic compass. Errors of the compass. Compass adjustment. Gyro systems. Lights, buoys, and beacons. To prevent collision. Piloting. Radio on board ship. Mariners' maps. Dead reckoning. Maneuvering methods. Outward bound. Lighthouses in the sky. Sumner lines. Nautical astronomy. The sextant and its use. Altitudes and their correction. The bubble sextant. Time. The chronometer and timekeeping. The almanac and its use. The air almanac. Methods. The noon sight. Polaris. Azimuths. Solutions for LOP. Days with the sun. The stars. Planets and the moon. All in a day. Zero hour. Appendix. Index.

Note: A comprehensive text for students of navigation and experienced seamen, dealing with the principles of coastwise and sea navigation, celestial navigation, and elementary piloting, and requiring no knowledge of mathematics beyond simple arithmetic. This edition has been enlarged by approximately 140 pages, with the inclusion of many plotting problems and new material on compass adjustment, gyro systems, maneuvering board work, and Sumner lines. There is also a new chapter explaining the use of the *American air almanac*. Complete tables and Almanac excerpts are provided for the working of all problems, so that no additional books of tables are needed. A *Primer of navigation key*, New York: D. Van Nostrand Company, Inc., 1943, 203 p., \$3.00, which includes the solution and plotting of these problems, has been prepared for use in conjunction with this text.

NICHOLS, REEDER GLENN

Pilots' radio manual. Washington, D.C.: Government Printing Office, 1940. 98 p. illus. 26 cm. (United States. Civil Aeronautics Administration. Civil aeronautics bulletin no. 29) Paper, \$0.25. 4314a

Contents: Preface. Modern radio equipment. Present-day application of radio in aeronautics. Procedures and phraseologies for airport traffic control. Current developments. Appendix (technical definitions).

Note: This manual was issued primarily for use as a text in the Civilian Pilot Training Program. Beginning with a brief theoretical discussion of radio, the volume covers present-day application of radio in communication between aircraft in flight and ground stations, radio aids to navigation, bonding and shielding of aircraft, antenna installations, and airport control tower procedures and phraseologies, and concludes with a six-page glossary of radio terms. Treatment of the various subjects is as nontechnical as possible. The book is also intended to be of value to pilots in aiding them to make a full and efficient use of the airway radio facilities and aircraft radio equipment.

POLOWE, DAVID

Navigation for mariners and aviators. New York: Cornell Maritime Press, 1942. 516 p. illus. 24 cm. \$5.00. 4315

Contents (partial): Part I, Piloting and dead reckoning: A brief history of navigation. The compass. Chart navigation for mariners. Piloting. Dead reckoning. Fog. Storms, winds, tides, currents, ice. Part II, Celestial navigation: Informal definitions and discussions. The sextant. The chronometer. Time. Analysis of the *American Nautical Almanac*. How to find the ship's latitude. Ship's longitude and compass error. The day's work at sea. Practical astronomy. Part III, Appendices: Rules to prevent collisions of vessels. International rules. Inland rules. Boundary lines of the high seas. Pilot rules. Pilot rules for the Great Lakes. New motor-boat law and amendments. Questions on the rules of the road.

Examinations for licensed deck officers. Excerpts from the *Nautical Almanac*. Polowe's compact useful tables. Dreisonstok's navigation tables for mariners and aviators. Index.

Note: Composed for use by amateur and professional mariners, aviators, and students. A section of questions and answers is given to aid those preparing for mate's and master's examinations. All the celestial navigation is worked by the short method of H.O. no. 208 (Dreisonstok), because one formula is made to serve all purposes. Designed to be complete in itself the book contains the necessary tables and all pages from the *Nautical Almanac* used in working the sample problems.

RAMSEY, LOGAN CARLISLE

Navigation of aircraft. Revised edition. New York: The Ronald Press Company, 1941. 230 p. illus. 22 cm. \$4.50. 4316

Contents: Abbreviations and symbols. The necessity for navigation. Definitions. Maps, instruments, and accessories. The compass. Dead reckoning and plotting. The effect of wind in dead reckoning. Determining the wind. Plotting and dead reckoning problems. Piloting. Aerial astronomy. Instruments used. Celestial observations. The practice of navigating aircraft. Application of aerology to navigation. Appendix: Extracts from the *American air almanac* 1941. Index.

Note: A concise text for air pilots and aviation students which emphasizes the methods and practice of dead reckoning and celestial observations, rather than the use of radio aids. In this edition the general principles of operation of each type of instrument are given, rather than the more detailed description of each make of instrument which appeared in the previous edition. Excerpts from the *American Air Almanac* for 1941 are now included. The author's *Air pilots' dead reckoning tables*, New York: Ronald Press, 1941, 48 p., has been prepared for use in conjunction with this text, and is included in the price quoted above.

RAWLINGS, ARTHUR LIONEL

The theory of the gyroscopic compass and its deviations. Second edition, completely revised and reset. New York: The Macmillan Company, 1944. 182 p. illus. 22 cm. \$3.00. 4317

Contents: The characteristics of the gyroscope. General theory of the simple pendulous gyroscopic compass. Complete equations of motion. Damping by means of a viscous fluid. The mode of oscillation of the gyro compass. Gyro compasses in use today. Compensating weights. Inter-cardinal rolling error. Prevention of inter-cardinal rolling error. Damping-acceleration error. Gimbaling errors. Accuracy of the gyro-compass at sea. Appendix: Differential equations. List of mathematical symbols. Index.

Note: A new edition of a work which first appeared in 1929. The wartime revision includes a lessening of theory and advanced mathematics in the body of the text. The section on differential equations appears in the appendix in simplified form. Descriptions of developments in recent years are amplified, while the Philipotts Committee report on gyro-compass development included in the first edition has been omitted. The book provides a theoretical background for those who intend to become gyro-compass specialists.

REDFIELD, HOLLAND L.

Instrument flying and radio navigation. New York: The Ronald Press Company, 1944. 195 p. illus. 21 cm. \$3.00. 4318

Contents: The four fundamentals and a brief review of the theory of flight. Flying the four fundamentals with the primary flight group of instruments. Combining the four fundamentals. The artificial horizon and the directional gyro. Radio. Bracketing and following the radio range on course. Locating the range station. Radio range orientation systems. Radio range let-down procedures. The radio direction finder. Homing and position plotting. The link trainer and the 1-2-3 system of instrument flying. Index.

Note: This book gives simple yet thorough analysis of instrument flying and radio navigation as required for the handling of modern aircraft. By stressing the fundamentals of flying, the author attempts to build on skills that have already been acquired. The material on radio range and direction finding navigation has been made as clear and concise as possible.

REDPATH, PETER H., AND JAMES M. COBURN

Air transport navigation for pilots and navi-

gators; illustrated by Edward J. Schuett. New York: Pitman Publishing Corporation, 1943. 612 p. illus. 24 cm. \$5.00. 4319

Contents: Introduction. Airways. Aeronautical charts. Com-passes. Air navigation instruments. Course plotting, course conversion and simple bearings. Determination of groundspeed and fuel consumption. Wind and its influence on the navigation of aircraft. Aircraft radius of action and simple interception. Navigational dead-reckoning computations. Flight planning, flight logs, scheduling. Radio aids to air transport operation. Radio-range flying. Instrument approach procedures. Radio-range orientation. Airplane direction-finding equipment. Simple homing and D/F calibration. Direction finding (D/F). Link trainer. Instrument landing. Ultra-high-frequency radio ranges. Routing navigation practice. Airline flight dispatching. Heavens above. Appendix. Bibliography. Index.

Note: A textbook and reference book for student pilots and navigators and for transport and private pilots. The emphasis is on the practical side, with theoretical discussion reduced to a minimum. An informal and even humorous style of writing is employed, along with many cartoon-type illustrations, in an effort to render the subject easier to understand. The basic principles of air navigation are given, together with a description of present-day instruments and the elements of celestial navigation. Meteorology has been purposely omitted but there is much reference material on the subject in the bibliography.

RIDER, PAUL REECE, AND CHARLES A. HUTCHINSON

Navigational trigonometry. New York: The Macmillan Company, 1943. 232 p. illus. 22 cm. \$2.50. 4319a

Contents: Introduction to spherical trigonometry. Solution of right spherical triangles. Solution of oblique spherical triangles. Other methods for oblique triangles. The terrestrial sphere. Charts. The sailings. Astronomical triangle. Lines of position. Standards of accuracy in calculation. The mil and its uses. Important formulas. Common logarithms of the trigonometric functions. Tables of natural and logarithmic haversines, 5-place. Answers to odd-numbered exercises. Index.

Note: A revision and expansion of Rider's *Plane and spherical trigonometry*. New York, 1942 (see Index), prepared for students of surface and aerial navigation and the mathematics basic thereto. The book is not intended as a course in celestial navigation, but aims to acquaint navigational students with the principles fundamental to the solution of a spherical triangle. The five-place table of natural and logarithmic haversines is included to serve the needs of the beginner who may not have access to Bowditch's *Tables*.

SHUTE, WILLIAM GEORGE, AND OTHERS

An introduction to navigation and nautical astronomy, by William George Shute, William Wright Shirk, George Forbes Porter and Courtenay Hemenway. Illustrations by Arthur Paul Koch. New York: The Macmillan Company, 1944. 457 p. illus. 22 cm. \$4.50. 4320

Contents: Part I, Geo-navigation: The terrestrial sphere. Maps, charts, and plotting sheets. Charts and navigational accessories. The compasses. The compass error. Terrestrial aids to navigation. Dead reckoning and piloting. The sailings. Part II, Celo-navigation: Elements of astronomy. The celestial sphere. The measure of time. Longitude and time. Time, geographical position, and the almanac. The sextant. Altitude corrections and the almanac. Line of position. Determining position by H.O. 211. Determining position by H.O. 214. Latitude by meridian altitude of the sun and polaris. Elements of aerial navigation. Appendix: Useful navigational publications. Logarithms and the trigonometry of the right triangle. Tables of logarithms and trigonometric functions. Excerpts from *American practical navigator* (Bowditch). Table from H.O. 211. Excerpts from H.O. 214. Excerpts from *The American Nautical Almanac*. Excerpts from *The American Air Almanac*. Index.

Note: An introduction to the subject for serious high school students, college students, and students of cadet training schools. Technical terms and phrases, when used, are carefully defined. Before new phrases are introduced, preceding material is summarized. The text is complete in itself; that is, the necessary tables and almanac excerpts are given in the appendix.

SKILLING, WILLIAM THOMPSON, AND ROBERT S. RICHARDSON

The practical essentials of pre-training navigation; celestial navigation—meteorology—map projection. New York: Henry Holt and Company, 1942. 113 p. illus. 21 cm. \$0.75. 4321

Contents: General statement of the problem. Describing position upon the earth. Kinds of maps (map projections). Position upon the celestial sphere. Time. The astronomical triangle. Essential aids to navigation. Corrections to observations. Determination of the line of position. Practical hints for identifying the bright stars and their constellations. Line of position determined from eye-estimates. Fundamentals of meteorology. Problems. Glossary. Index.

Note: This book was prepared for college students in pre-training navigation courses. While designed to accompany the authors' *Astronomy*, New York: Holt, 1939 (see Index), it may be used independently or in conjunction with any other text in astronomy. The main emphasis is on the presentation of a clear picture of the relations between the earth and the celestial sphere. A minimum of mathematics is presupposed, and the language throughout is as non-technical as possible.

STEWART, JOHN QUINCY, AND NEWTON L. PIERCE

Marine and air navigation. Boston: Ginn and Company, 1944. 471 p. illus. (part col.) 29 cm. \$4.50. 4322

Contents: The scope of navigation. Position and motion on the earth. A summary of map projections. Mercator, Lambert, and gnomonic charts. The compass. Channel piloting. Nautical charts, sailing directions, or coast pilots, and light lists. Map reading; aeronautical charts. Air piloting. Coast piloting. Tides and tidal currents. Dead reckoning. Correction for current and wind. Relative movement; relative motion at sea. Relative motion in the air. The sailings; plane trigonometry for navigators. Radio navigation. Introductory outline of celestial navigation. The navigators' stars. The marine sextant and the bubble octant. Time and the almanacs. Meridian sights. Sumner lines; use of HO 214. Ageton's method and other methods of obtaining Sumner lines. Steering by the stars; azimuths. The day's work at sea; procedures in flight. Astronomy for navigators. United States government agencies which aid navigators. The history of navigation. Tolerances. Drill problems. List of books. Excerpts from tables. Charts in color. Star charts. Long-term almanac. Index.

Note: This unified presentation of marine and air navigation is especially helpful to students who do not know which branch they will enter. Piloting, charts for sea and air, map projections, tides, and the day's work are set forth in detail with a minimum of mathematics. Applications are fully described, and sample pages of all the principal types of charts familiarize the student with the appearance and use of this essential navigational material.

UNITED STATES. CIVIL AERONAUTICS ADMINISTRATION

Practical air navigation, by Thoburn C. Lyon. First edition, September, 1940. Supersedes Special publication no. 197, U.S. Coast and Geodetic Survey. Washington, D. C.: Government Printing Office, 1940. 245 p. illus. (part col.) 26 cm. (United States. Civil Aeronautics Administration. Civil aeronautics bulletin. No. 24) Paper, \$1.00. 4323

Contents (abridged): Introduction. Chart reading. Cross-country flying. Air navigation by dead reckoning. Radio navigation. Celestial navigation. Practical examples. Appendix. Bibliography. Index.

Note: This manual of air navigation is, in effect, the fourth edition of Special publication no. 197 of the U.S. Coast and Geodetic Survey. In 1940 it was adopted as the official text of the civilian pilot training program of the Civil Aeronautics Administration, and became known as Civil aeronautics bulletin no. 24. The material on air navigation was broadened and brought up to date for this purpose, and the chapter on meteorology was discontinued in favor of a more complete manual in

that field prepared for the same program. A number of tables, maps, and charts are included. There are 31 references in the bibliography.

UNITED STATES. COAST AND GEODETIC SURVEY

Instructions for the compensation of the magnetic compass, by N. H. Heck, Chief, Division of Terrestrial Magnetism. 1938 edition. Washington, D.C.: Government Printing Office, 1938. 49 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Special publication no. 96) Paper, \$0.15. 4324

Contents: Introduction. Part I, Compensation and care of the compass: Steering a magnetic course and obtaining deviation. Compensation. Test of mechanical conditions of compass and azimuth circle. Part II, Explanation of compass deviation and compensation: Introduction. Magnetic fields and lines of force. Induction. Earth's magnetic field. The ship's magnetic field. Principles of compensation. Reduction of directive force. Uncompensated deviation. Analysis of compass deviations. Tables.

Note: Prepared especially for the guidance of officers of the Coast and Geodetic Survey in keeping ships' compasses adjusted with an accuracy sufficient for hydrographic surveys; it is valuable to other navigators as well. It includes information on the principles underlying compensation.

UNITED STATES. COAST AND GEODETIC SURVEY

Tide tables, Atlantic Ocean, for the year 1945. Washington, D.C.: Government Printing Office, 1944. 344 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Serial no. 660) Paper, \$0.25. 4325

Contents: Daily tide predictions. Tidal differences and constants. Height of tide at any time. Local civil time of sunrise and sunset. Reduction of local civil time to standard time. Moonrise and moonset. Astronomical data. List of publications by the Coast and Geodetic Survey relating to tides and currents. Index.

— Tide tables, Pacific Ocean and Indian Ocean, for the year 1945. Washington, D.C.: Government Printing Office, 1944. 385 p. illus. 23 cm. (United States. Coast and Geodetic Survey. Serial no. 661) Paper, \$0.25. 4325a

Contents: Same as above.

Note: These tide tables for the use of mariners have been published annually by the United States Coast and Geodetic Survey since 1853, and are now issued in the two volumes listed above, which together contain full daily predictions for 140 reference ports and differences and constants for about 4,200 stations. Each volume contains a table for obtaining the height of the tide at any time, a table of local civil time of sunrise and sunset for every fifth day of the year for different latitudes, a table of the reduction of local civil time to standard time, a table of moonrise and moonset for 8 to 8 places, and a table of the Greenwich civil time of the moon's phases, apogee, perigee, greatest north and south and zero declination, and the time of the solar equinoxes and solstices. Predictions are in standard time rather than war time.

UNITED STATES. COAST GUARD

Nautical rules of the road. Washington, D.C.: Government Printing Office, 1943. 136 p. illus. (part col.) 22 cm. Gratis. 4326

Contents: Foreword. Areas in which the various rules apply. Rules of the road. Lights on vessels. Sound signals in thick weather. Daymarks. Motorboats. Bibliography. Index.

Note: The purpose of this publication is to present to the mariner in comparative form the more important of the laws, rules, and regulations known as "The Pilot rules" or "The Rules of the nautical road." These are arranged by subjects such as "Distress signals," "Towing submerged objects," "Speed in fog," and under each subject is given the salient features from each of the following sets of rules: International rules, Inland rules, Pilot rules for the Great Lakes, and Pilot rules for the western rivers.

UNITED STATES. COAST GUARD

The significance of aids to marine navigation. Washington, D.C.: Government Printing Office, 1943. 33 p. illus. 23 cm. Gratis. 4327

Contents: Foreword. Purpose of navigation aids. Lighthouses. Range lights. Lightships. Fog signals. Radiobeacons. Radio direction-finder stations. Buoys. Beacons. Intracoastal waterway. Distance-finding signals. Symbols used on charts. Light lists. Notices to mariners. Early history. Jurisdiction. Bibliography.

Note: The purpose of this publication is to acquaint those who are beginners in study of the science of navigation with the basic principles underlying the marking of coasts and waterways with lighthouses, lightships, fog signals, radiobeacons, radio direction-finders, and buoys. It explains briefly the significance of the varying colors of lighthouses and lightships, of the wide variety of light and fog signal characteristics, and of the system of radio aids to navigation, and states in simple terms the manner in which the information provided by these aids is applied in actual navigation.

UNITED STATES. HYDROGRAPHIC OFFICE

Aircraft navigation manual. First edition, revised. Prepared at Pensacola Ground School and published by the Hydrographic Office under the authority of the Secretary of the Navy. Washington, D.C.: Government Printing Office, 1941. 258 p. illus. 23 cm. (United States. Hydrographic Office. Publication no. 216) \$1.00. 4328

Contents: Navigation, definitions, charts, and publications. Aircraft navigation instruments. Dead reckoning navigation. Radio navigation. Celestial navigation. Airways system of the United States. Meteorology. Nomenclature of air navigation. Index.

Note: This work is adaptable for use as a home-study manual as well as a textbook for courses in air navigation for student pilots and navigators. The revised edition contains new material based on the course given at the Naval Air Station at Pensacola, Florida. A number of problems and answers are included and there are tabular extracts from the *American Air Almanac* for 1941.

UNITED STATES. HYDROGRAPHIC OFFICE

American practical navigator. An epitome of navigation and nautical astronomy. Originally by Nathaniel Bowditch. (Revised edition of 1938.) Published by the United States Hydrographic Office under the authority of the Secretary of the Navy. Washington, D.C.: Government Printing Office, 1939. 777 p. illus. 26 cm. (United States. Hydrographic Office. Publication no. 9) \$2.70. 4329

Contents: Part I, Text and appendixes: Abbreviations. Index to Part I. Navigation definitions. Navigation instruments and accessories. The compass error. Piloting. The sailings. Dead reckoning. Nautical astronomy, definitions. Nautical astronomy, instruments. Time and the *Nautical Almanac*. Observed altitude corrections. Latitude. Longitude. Azimuth. The Sumner line of position. Short tabular methods of navigation. The practice of navigation at sea. Marine surveying. Tides. Ocean currents. Ocean waves. Winds. Cyclonic storms. Ice movements in the North Atlantic. Appendixes. Part II, Tables.

Note: This standard reference work by the American mathematician and navigator Nathaniel Bowditch (1773-1838) first appeared in 1802 and has been a publication of the United States Hydrographic Office since 1866. Part I contains worked-out examples of short tabular methods for solving observations of celestial bodies in navigation. Part II consists of 42 tables covering essential navigational data. The present edition incorporates the latest available information as of 1938 and has a number of new photographs as well as minor textual changes.

UNITED STATES. HYDROGRAPHIC OFFICE

Handbook of magnetic compass, adjustment and compensation, by Nye S. Spencer and

George F. Kucera. April, 1944. Approved by the United States Navy Department, Bureau of Ships. Washington, D.C.: Government Printing Office, 1944. 147 p. illus. 23 cm. (United States. Hydrographic Office. Publication no. 226) 4330

Contents: Part I, Magnetic adjustment: Procedures for magnetic compass adjustment. Magnetism. Theory of magnetic compass adjustment. Typical deviation curve and the estimation of approximate coefficients. Ship's heading. Azimuths. Practical procedures for magnetic compass adjustment. Corrector effects—interactions between correctors. Transient deviations of the magnetic compass. Part II, Degaussing compensation: Procedures for degaussing compass compensation. Degaussing compass compensation. Compass compensating coil and control box data. Compass compensating coil effects. Part III, Miscellaneous: Compass records and reports. Degaussing. Use of the dip needle for heeling adjustments. Use of the horizontal force instrument. Slewing of spheres. Slewing of the Flinders bar. Remote reading compasses. Suggested course of study: Appendixes. Index.

Note: This handbook for both normal and degaussed condition has been prepared in order to present all pertinent information regarding the practical procedures of adjustment and compensation in one text. It deals with the basic principles of compass deviations and their correction, and not with the details of particular compass equipment. The principles of degaussing compensations and the details of compass compensating coil equipments and their electrical characteristics are also included.

UNITED STATES. HYDROGRAPHIC OFFICE

List of lights and fog signals. Corrected to January 1, 1944. Issued under the authority of the Secretary of the Navy. Washington, D.C.: Government Printing Office, 1944. 6 v. 23 cm. (United States. Hydrographic Office. Publication nos. 30 through 35) Paper, \$0.90 each volume. 4331

Contents (abridged): Volume I, H.O. no. 30: The coasts of North and South America, the West Indies, and the Hawaiian Islands. Volume II, H.O. no. 31: Islands of the Pacific and Indian Oceans, Australia, Asia, and the east coast of Africa. Volume III, H.O. no. 32: The west coasts of Europe and Africa, the Mediterranean Sea, Black Sea and the Sea of Azov. Volume IV, H.O. no. 33: British Islands, English Channel, and North Sea. Volume V, H.O. no. 34: Norway, Iceland, and the Arctic Ocean. Volume VI, H.O. no. 35: The Baltic Sea.

Note: This list contains descriptions of all lighted navigational aids (except harbor light buoys) and of all fog signals and radio beacons on the coasts of continents and islands within the areas indicated, the entire six volumes covering the lights and fog signals of the world. Storm signals, signal stations, radio direction finders, etc., located at or near lights are included in this list. Geographical coordinates are included to facilitate reference to the charts, and the characteristics, candlepower, height above water, visibility, structure, and other remarks are given for each light listed. Each of the six volumes is normally revised and reissued every year, corrected to about January 1.

UNITED STATES. HYDROGRAPHIC OFFICE

Naval air pilot: Central America. Corrected to July 1, 1937. Notice to aviators, no. 13, 1937. Issued by the Hydrographic Office under the authority of the Secretary of the Navy. Washington, D.C.: Government Printing Office, 1937. 262 p. illus. 23 cm. (United States. Hydrographic Office. Publication no. 195) \$1.80. 4332

Contents: Part I, General meteorological conditions, air routes, distances, and air traffic rules: Winds and weather of the Central American region. Air routes: landplanes. Air traffic rules. Part II, General features, meteorological conditions, and detailed information on seaplane anchorages and landing fields: British Honduras. Costa Rica. El Salvador. Guatemala. Honduras. Nicaragua. Panama. Part III: Photographs of seaplane anchorages, landing fields, landmarks, and aids to air navigation. Index.

Note: Designed to furnish information of assistance in the navigation of aircraft in the area indicated, particularly for civilian aircraft. Tables and charts supply essential rainfall, visibility, and wind frequency data, air temperature, humidity,

and other meteorological information. Separate maps showing the locality of each airport are included. Descriptive notes cover landmarks, facilities, seaplane anchorages, obstructions, and special regulations in force for each country.

UNITED STATES. HYDROGRAPHIC OFFICE

Naval air pilot: West Indies, including Bermuda, Bahama Islands, the north coast of Colombia and Venezuela. Corrected to July 1, 1940. Notice to aviators, no. 7, 1940. Published by the Hydrographic Office under the authority of the Secretary of the Navy. Washington, D.C.: Government Printing Office, 1940. 662 p. illus. 23 cm. (United States. Hydrographic Office. Publication no. 194) \$1.80. 4333

Contents: Part I, General information and meteorological conditions: General information. Meteorological conditions of the West Indian region. Part II: Seaplane anchorages and landing fields arranged in geographical order by island groups and countries. Part III: Photographs of seaplane anchorages, landing fields, landmarks, and aids to air navigation, arranged in geographical order by island groups and countries. Index.

Note: This work is designed to furnish information of assistance in the navigation of aircraft, particularly for civilian aircraft. There are a large number of tables and charts giving rainfall, visibility, cloud movements, wind rose diagrams, wind frequency and velocity, air temperature, humidity, and other meteorological data. Separate maps showing the locality of each airport are included. Descriptive notes cover landmarks, facilities, seaplane anchorages, obstructions, and special regulations in force for each country. Although considerable changes have been made in the number and condition of airfields in this region since 1941, most of the material is still useful, especially the meteorological data.

UNITED STATES. HYDROGRAPHIC OFFICE

Position tables for aerial and surface navigation. Washington, D.C.: Government Printing Office, 1931. 223 p. 24 cm. (United States. Hydrographic Office. Publication no. 209) \$0.75. 4334

Note: These tables are designed to furnish a simple method of entry and solution of lines of position. They consist essentially of a rearrangement, adaptation, and expansion of Towson's *Great Circle sailing tables*, and are to be applied to the celestial as well as the terrestrial sphere. They are for use in surface and aerial navigation and are applicable to all latitudes from the equator to the pole. The method for solving for line of position is uniform throughout.

UNITED STATES. HYDROGRAPHIC OFFICE

Star identification tables, giving simultaneous values of declination and hour angle for values of latitude, altitude, and azimuth, ranging from 0° to 88° in latitude and altitude and 0° to 180° in azimuth. Published and sold by the U.S. Hydrographic Office under authority of the Secretary of the Navy. Washington, D.C.: Government Printing Office, 1939. 364 p. 22 cm. (United States. Hydrographic Office. Publication no. 127) \$1.50. 4335

Note: These tables of simultaneous values of the declination and hour angle, corresponding to stated values of the altitude and azimuth at regular intervals throughout the whole circuit of the celestial sphere, have been prepared to serve as a convenience for navigators in identifying the stars upon which observations are made for the purpose of deducing geographical position and bearing at sea. To find the right ascension of the observed star it is only necessary to subtract the hour angle from the local sidereal time if the star is west of the meridian, or to add if the body is east of the meridian. A navigational star chart is included.

UNITED STATES. HYDROGRAPHIC OFFICE

The Sumner line of position, furnished ready to lay down upon the chart by means of tables of simultaneous hour angle and azimuth of celestial bodies. Between 27° and 63° of declination, latitude 60° N. to 60° S. Published by the Hydrographic Office under authority of the Secretary of the Navy. Washington, D.C.: Government Printing Office, 1933. 892 p. illus. 30 cm. (United States. Hydrographic Office. Publication no. 204) \$2.25. 4336

Note: For values of the true altitude stated in these tables, the materials are supplied for directly drawing the Sumner line through a point defined by its longitude on the parallel of latitude represented by the integral number of degrees of latitude next to the latitude by dead reckoning. Besides their obvious usefulness in finding both the course and distance in Great Circle sailing, as well as finding position lines from radio bearings, the present tables may be used for the identification of navigational stars and also for the computation of the duration of twilight.

UNITED STATES. HYDROGRAPHIC OFFICE

Tables of computed altitude and azimuth. Washington, D.C.: Government Printing Office, 1939-41. 8 v. 30 cm. (United States. Hydrographic Office. Publication no. 214) Vol. I-V, \$3.00 each; Vol. VI-VIII, \$2.25 each. 4337

Contents: Volume I: Latitudes 0° to 9°, inclusive. Volume II: Latitudes 10° to 19°, inclusive. Volume III: Latitudes 20° to 29°, inclusive. Volume IV: Latitudes 30° to 39°, inclusive. Volume V: Latitudes 40° to 49°, inclusive. Volume VI: Latitudes 50° to 59°, inclusive. Volume VII: Latitudes 60° to 69°, inclusive. Volume VIII: Latitudes 70° to 79°, inclusive.

Note: These tables consist essentially of tabulated solutions of the astronomical triangle, so arranged as to yield the mariner his computed altitude and azimuth by inspection. The tables are applicable equally to sights of the sun, moon, planets, and navigational stars, and inasmuch as they are designed for use in connection with celestial bodies of declinations both of the same name as and contrary name to the latitude, they apply both to the northern and southern hemispheres. For greater convenience in use, the values for only 10 degrees of latitude are included in each volume of the publication. The arrangement is on a basis of whole degrees of latitude, the data for each degree comprising a section of twenty-four pages, with two additional pages for star identification. Declination arguments in whole and half degrees head the main columns of each page, while hour angle arguments in whole degrees appear at the sides. Within the limits of each declination column are four groups of figures representing the altitude, the multiplier for declination difference, the multiplier for hour-angle difference, and the azimuth. The primary method for which the tables were originally designed is the solution for line of position, using the multiplier for declination difference correction.

UNITED STATES. NAUTICAL ALMANAC OFFICE

The American air almanac, 1945, September-December. Washington, D.C.: Government Printing Office, 1944. 487-730 p. illus. 25 cm. \$1.00. 4337a

Note: This publication appears three times a year. Each issue contains daily sheets on which are given the Greenwich hour angle (GHA) and declination (Dec.) of the sun, vernal equinox (γ), three planets, and moon, at ten-minute intervals of Greenwich civil time (GCT). A navigational star chart designed to assist the navigator in identifying stars is also included. The purpose of the work is to supply in convenient form all the astronomical data needed for aerial navigation. Considerable thought has gone into the planning of the volume in order to make it convenient for use.

UNITED STATES. NAUTICAL ALMANAC OFFICE

The American nautical almanac for the year 1945. Issued by the Nautical Almanac Office,

United States Naval Observatory, under the authority of the Secretary of the Navy. Washington, D.C.: Government Printing Office, 1944. 318 p. illus. 25 cm. Paper, \$0.65. 4338

Contents: Symbols and abbreviations. Siderial time of 0^h civil time. Ephemeris of the sun. Ephemeris of the moon. Phases of the moon. Correction to moon's Greenwich hour angle. Correction to moon's right ascension and declination. Meridian transit of the moon. Ephemeris of Venus. Ephemeris of Mars. Ephemeris of Jupiter. Ephemeris of Saturn. Correction to right ascension and declination of planets. Correction to Greenwich hour angle of planets. Apparent places of 55 stars. Meridian transit of 55 stars. Correction to meridian transit of stars. Ephemerides of 54 stars. Correction to Greenwich hour angle of stars. Mean places of 110 additional stars. Eclipses. Phenomena, planetary configurations. Sunrise and sunset. Moonrise and moonset. Apparent place, upper culmination, and elongations of Polaris. Greenwich hour angle of Polaris. Miscellaneous tables. General index.

Note: This standard work is published annually and presents up-to-date navigational data in tabular form for the use of the mariner. The tables cover all the ephemeris material essential to the solution of problems of navigational position. A navigational star chart is included.

UNITED STATES. WAR DEPARTMENT

Air navigation. Technical manual no. 1-205. Washington, D.C.: Government Printing Office, 1940. 296 p. illus. 23 cm. \$0.40. 4338a

Contents: Pilotage and elementary dead reckoning: Maps and charts. Time, direction and bearing. Compasses and compass errors. Time, speed, and distance. Effect of wind. Elementary dead reckoning. Federal aids to navigation. Air traffic rules. Navigation flights. Radius of action problem. Interception problem. Precision dead reckoning and radio navigation: Maps and charts. Instruments and equipment. Alinement, compensation, and calibration of instruments. Wind and ground speed. Bearings and fixes. Dead reckoning procedure. Precision dead reckoning applied to radius of action, intercept, search, and patrol. Flyings. Radio navigation as applied by precision navigator. Appendices: Nomenclature of air navigation. Bibliography. Index.

Note: Describes and illustrates the various methods of air navigation used by pilots of the Army Air Corps. The manual may be used as a text by students undergoing flying instruction.

UNITED STATES. WAR DEPARTMENT

Air navigation tables. War Department Technical manual TM 1-208. War Department, 1 August 1944. Washington: United States Government Printing Office, 1944. 119 p. illus. 26 cm. Paper, \$0.25. 4339

Contents (abridged): Tables: Natural trigonometric functions. Common logarithms of numbers. Meridional parts or increased latitudes. Reduction of local civil time to standard meridian time and the reverse. Altitude-pressure table—feet—miles. Conversion of millibars and inches of mercury. Tables of constants and equivalents. Length of a degree in latitude and longitude. Conversion tables for thermometer scales. Logarithms of trigonometric functions. Radio bearing conversion. Off-course correction tables. Forms for solution of Mercator and midlatitude flying. Table of correction for error in indicated free-air temperature due to compression heat. Conversion tables for metric and English linear measure. Appendix: Forms. Figures: Ageton solution, line of position. Great circle computation, Ageton solution, course and distance. Great circle computation, Ageton solution (Lat Lo of intermediate point—x-1, x-2, etc.). Factors for ground speed by timing.

Note: Supersedes TM 1-208, 5 June 1942, including C 1, 17 October 1942.

UNITED STATES. WAR DEPARTMENT

Celestial air navigation. Technical manual no. 1-206. Washington, D.C.: Government Printing Office, 1941. 227 p. illus. 23 cm. \$0.35. 4339a

Contents: Motion of the celestial bodies. Definitions and systems of coordinates. Time. Basic principles of celestial navigation. Reduction of astronomical triangle. Position lines. Sextant and errors of observation. Latitude by Polaris. Star

altitude curves. Precomputation. Star identification. Compass swinging by celestial azimuths. Preflight preparation and flight procedure. Great circle computations by celestial methods. Appendices: Time and hour angle formulas. Extracts from *American Air Almanac*, 1941. Bibliography. Index.

Note: An elementary text. Includes description and operation of celestial navigation instruments and methods currently (1941) used by personnel of the Air Corps, and an explanation of the principles and fundamentals upon which the art of celestial navigation is based.

UNITED STATES. WAR DEPARTMENT

Instrument flying training. Technical manual no. 1-445. War Department, Washington, June 18, 1942. Washington: United States Government Printing Office, 1942. 144 p. illus. 22 cm. \$0.20. 4340

Contents (abridged): Part I, Instructors' guide: Basic instrument flying. Advanced instrument flying. Part II, Instrument flying trainer, operation and training: Basic course in trainer. Radio aids to navigation. Weather data. Index.

Note: This manual supersedes TM 1-445, September 7, 1940. Part one of this instructor's guide has been carefully designed around the instruments themselves, in such a manner that the student will have no opportunity to acquire bad habits. Each instrument is taken up in its proper order of importance. The aim of part two is to present a comprehensive text covering all phases of instrument flying instruction and practice, including approach and let-down procedures and instrument landings. It is arranged to serve as a reference for pilots as well as a guide for instrument flying.

UNITED STATES. WEATHER BUREAU

Atlas of climatic charts of the oceans. Prepared under the supervision of Willard F. McDonald. Derived directly and exclusively from original weather observations recorded on ships at sea and collected in the files of the United States Weather Bureau. Compiled and summarized in projects of the United States Civil Works Administration, 1934, and the United States Works Progress Administration, 1936-1938. Washington, D.C.: Government Printing Office, 1938. 72 p. illus. (part col.) 45 cm. (United States. Weather Bureau. W.B. no. 1247) Paper, Gratis. 4340a

Contents: Titles of charts: Number and distribution of observations. Predominant wind directions, constancy, and forces, by months. Resultant wind direction and force, by months. Average wind velocities in knots, by seasons. Frequency of dead calms, by seasons. Frequency of winds reaching or exceeding Beaufort force 7, by months, and Beaufort force 8, with gale roses, by seasons. Fog, by seasons. Mist, by seasons. Haze, by seasons. Exceptional horizontal visibility, by seasons. Average cloudiness, by seasons. Studies of cloud forms, by seasons. Rain, by seasons. Thunderstorms, by seasons. Depression of the wet bulb, by seasons. Average air and sea-surface temperatures over the North Atlantic and North Pacific Oceans, by months. Difference between air and sea-surface temperatures, North Atlantic and North Pacific Oceans, by seasons.

Note: These charts were derived from approximately 5½ million observations taken on ships at sea during a period of more than 50 years, and are presented as an aid to navigation and aviation at sea.

WEEMS, PHILIP VAN HORN

Air navigation. Third edition. New York: McGraw-Hill Book Company, Inc., 1943. 406 p. illus. 23 cm. \$4.50. 4341

Contents: Charts. Compasses. Air pilotage. Radio. Dead reckoning: theory—equipment—practice. Instrument flying. Outline of meteorology. Celestial navigation: theory—equipment—practice. Aviator's dead reckoning tables. Navigation auxiliary tables. Sources of information. Index.

Note: An authoritative treatment of information on fundamentals, equipment, computations, methods of procedure neces-

sary for a complete training in air navigation. Dead reckoning is covered fully. The present edition contains new material on methods and equipment, but material on civil airways and other topics of more interest in peacetime has been reduced or omitted.

WEEMS, PHILIP VAN HORN

Marine navigation. New York: D. Van Nostrand Company, Inc., 1940. 443 p. illus. (part col.) 23 cm. \$5.00. 4342

Contents: Preface. Introductory remarks. Position, direction and distance on the earth's surface. Charts. The magnetic compass. The gyro-compass. Instruments and aids to navigation. Chart navigation or "sailings." Piloting. Dead reckoning. Radio navigation. Meteorology for mariners. Celestial navigation—definitions and equipment. Time and hour angle. The theory of celestial navigation. Nautical almanacs. The sextant. The time-piece. Converting observations to positions. Selected methods of celestial navigation. Handling lines of position. Practical navigation—a day's work. Appendixes: Sources of information and equipment. Useful navigational formulas. Extracts from the Nautical and Air almanacs. Index.

Note: This basic textbook was developed for courses given at the Weems Institute of Navigation. It teaches the tabular methods of computation that are official in the United States Navy and other United States services. It emphasizes those topics that are most important in practical navigation, such as piloting,

chart navigation, and the various aids to navigation that are so widely used. For each important method, this book explains the definitions and principles, the equipment and instruments used, and the working procedure.

ZIM, HERBERT SPENCER

Air navigation. Illustrated with drawings by James MacDonald and with photographs. New York: Harcourt, Brace and Company, 1943. 324 p. illus. 22 cm. \$3.00. 4343

Contents: Everyone navigates. Instruments and methods. We navigate the earth. The story maps tell. Using maps. The compass. Plotting the course. The atmosphere. Why the weather. The pilot and the weather. Instruments of aviation. Gyroscopic instruments. Radio navigation. The radio compass. Your place under the stars. Celestial navigation. On the airways. The Civil Aeronautics Administration (CAA). Aviation and you. Getting your wings. Glossary. Bibliography. Index.

Note: An outline treatment of the subject of airplane navigation, or "aviation," in simplified form for the layman and for the youth interested in becoming a navigator. A chapter is included for boys of high-school age interested in beginning the study of air navigation as a career. A glossary of terms and numerous illustrations make the subject clear to the non-technical reader.

AERONAUTICS

General

ANDERSON, NORMAN O.

Pilots' airplane manual. Washington, D.C.: Government Printing Office, 1940. 150 p. illus. 26 cm. (United States. Civil Aeronautics Administration. Civil aeronautics bulletin no. 27) Paper, \$0.30. 4343a

Contents: Preface. Stresses on aircraft structures. Airplane materials. Standardization. Joining, fastening, and safetying. Airplane construction. Assembly and alinement. Maintenance and care of airplanes. Miscellaneous information.

Note: This manual was prepared to familiarize the student pilot with the structure, maintenance, and rigging of aircraft. Space is also devoted to seaplane floats and hulls. Designed originally to serve as a textbook in the controlled restricted commercial ground school course of the Civilian Pilot Training Program, the manual was used as such in conjunction with *Aerodynamics for pilots*, by Bradley Jones (Civil aeronautics bulletin no. 26) (see Index). The treatment of the subject matter is of a non-technical nature, providing factual information from a generalized point of view. At the end of each chapter are questions for review.

ANGLE, GLENN DALE, EDITOR

Aerosphere, 1943; including modern aircraft, modern aircraft engines, aircraft statistics, buyer's guide. New York: Aerosphere, Inc., 1944. 879 p. illus. 30 cm. \$15.00. 4343b

Contents (abridged): Modern aircraft: Introduction. Airplanes of the U.S. Army Air Forces. Model identification. Various types of airplanes used by the U.S. Army Air Forces. Model designation of naval airplanes. Alphabetical list of plane types by countries. Modern aircraft engines: List of aircraft engines by countries. Aircraft statistics: World air records. International and national class records. List of inspectors, C.A.A. Diplomatic service to the United States. Sportsman Pilots Association. U.S. Forest Service. Institute of the Aeronautical Sciences. National Bureau of Standards. Domestic air carrier operations statistics. Buyer's guide: Introduction. Standard abbreviations. U.S.A. alphabetical listing. U.S.A. product listing. U.S.A. geographical listing. Master index.

Note: An illustrated annual encyclopedia on aviation covering descriptions, specifications, performance records, and other related data on American and foreign aircraft as of the end of 1943. Due to the large number of advertisements present in the volume, the work has the appearance of a manufacturer's catalogue, but its scope is rather comprehensive and covers details not generally available elsewhere. Technology, design, theory of flight, and similar subjects are purposely omitted. In this edition, the section on statistics is confined for the most part to the United States since foreign data were generally unavailable in wartime.

THE AVIATION ANNUAL OF 1945; edited by Reginald M. Cleveland and Frederick P. Graham. With a foreword by William R. Enyart. New York: Doubleday, Doran and Company, Inc., 1944. 205 p. illus. 26 cm. \$3.75. 4344

Contents: The United States Army Air Forces, by General Henry H. Arnold and Major General Harold L. George. United States naval aviation, by Admiral Ernest J. King. Aviation training in the United States. Aviation manufacturing today in America, by Glenn L. Martin and others. Postwar employment and reconversion. Aviation research, by George W. Lewis. Aircraft of tomorrow. Commercial airlines. Private flying and airports. Epilogue. The aviation annual directory. Aviation books. What is A.R.A.? Index.

Note: An illustrated annual of American civilian and military aviation, presenting in text and pictures a summary of aeronautical progress in design and manufacture during 1944. Written primarily for the layman, it emphasizes the expected growth in private and commercial aviation in the postwar period, and reviews many phases of military and civil aviation, including military training in Army and Naval Air Forces schools and as general picture of mass-production methods in airplane construction. There is a bibliography of aviation books published between July, 1943 and June, 1944 as well as a listing of American aviation associations and organizations, with addresses, telephone numbers, names of officials, and official publications.

BAUGHMAN, HAROLD EUGENE

Baughman's Aviation dictionary and reference guide; aero-thesaurus. Second edition. Los Angeles, Calif.: Aero Publishers, 1942. 906 p. illus. 23 cm. \$6.50. 4345

Note: A useful reference tool for those engaged in some branch of aeronautical work, either as students or practical workers. In addition to the aviation dictionary and an illustrated nomenclature section, the volume provides information, in condensed form, covering a wide variety of topics such as: flight rules, airway traffic control, meteorology, radio navigation, airplane design, structural specifications and materials, shop mechanics. This edition contains a guide to studies for airmen based on publications issued by the Civil Aeronautics Administration of the United States, and the directory section listing airlines, airplane manufacturers, flying schools, and aeronautical organizations has been enlarged.

BLACK, ARCHIBALD

The story of flying. Revised edition. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1943. 272 p. illus. 23 cm. \$2.50. 4346

Contents: Man looks to the sky. The balloon is born. Zeppelin and the modern airship. The incredulous century. Three nearly succeed. Mechanical flight at last. Aviation tries to find itself. Curtiss and the flying boat. The patent suits. The first World war. Postwar aviation high lights. Air mail and air transport begin. Lindbergh, Byrd and Chamberlin. A period of varied activity. The story of engines and propellers. Rotary wings at last! Airports, airways and radio. Photography and other uses. Some interesting devices. Modern air transport. Some recent events. The second World war. Aircraft of tomorrow.

Note: This popular account of the progress of human flight makes no attempt at being all-inclusive, but limits itself to recording the high lights in each period of development. This edition is largely a reprint of the first (1940), although the chapter entitled "Some recent events" has been brought up to date, and a brief discussion of the part being played by aviation in the present war has been added. There is an index.

CLEVINGER, CLOYD PEART

Modern flight. Illustrations by Clayton Knight. New York: Noble and Noble, Inc., 1941. 294 p. illus. 26 cm. \$2.95. 4346a

Contents: Foreword. Introduction. Elementary stage: Straight flying. Turning. Slow speed flight. Taking off. Slips and skids. Taxiing. Landing. When do you solo? Intermediate and accuracy stage: Accuracy landings. Spins from all positions. Half rolls and dives. Precision steep turns. Advanced eights. Advanced and cross-wind take-offs. Cross-wind landings. Forced landings. Advanced acrobatic stage: Introduction. Precision spins. Advanced maneuvers. Acrobatic maneuvers. Advanced flying: Cross-country flying. Modern improvements. Conclusion. Appendix: Motors. Aviation occupations. U.S. Air Corps cadets. Naval aviation cadets. C.A.A. civilian pilot training. Index.

Note: A comprehensive guide for students on how to fly, written in simple non-technical language. The course covers the elementary and advanced training recommended by Civil Aeronautics Authority.

DANIEL GUGGENHEIM AIRSHIP INSTITUTE

Publications. Akron, O.: University of Akron, 1933-35. 3 v. illus. 27 cm. Paper, Vol. I, \$1.00; Vol. II, \$1.50; Vol. III, \$1.50. 4346b

Contents (abridged): Publication no. 1: Introduction. The vertical wind tunnel of the Daniel Guggenheim Airship Institute, by Th. Troller. Research & development problems arising in airship design, by Karl Arnstein. Current airship problems, by Garland Fulton. Airship problems arising in commercial aviation, by J. C. Hunsaker. Some aerodynamic problems of airships, by Theodore von Kármán. Discussion of airship problems. Publication no. 2: Introduction, by Th. von Kármán. The motion of ellipsoidal bodies through curved streams, by W. Tollmien. The boundary layer and skin friction for a figure of revolution at large Reynolds numbers, by Norton B. Moore. An attack on the origin of lift of an elongated body, by R. P. Harrington. Tests on the effect of sidewind on the ground-handling of airships, by F. D. Knoblock and Th. Troller. A hot-wire anemometer developed for full-scale airship measurements, by F. D. Knoblock. A two component continuous wind direction transmitter and recorder, by R. P. Harrington. Preliminary investigations of atmospheric turbulence, by F. L. Wattendorf. Some features of atmospheric turbulence and the passage of fronts, by A. M. Kuethe. On the recovery of a strong aluminum alloy, by R. H. Hobrock. Publication no. 3: Introduction, by Th. Troller. Lectures and discussion: On monocoque cylinders and the structure of rigid airships, by E. E. Lundquist. Theoretical aspects of stress calculation for rigid airships, by R. V. Southwell. The general problem of the stressed-skin airship hull, by R. H. Upson. Some airship problems, by C. P. Burgess. Some problems of the materials and methods of joining used in strong light structures, by R. H. Hobrock. On the problems of progressive airship research, by M. M. Munk. Meteorological aspects of airship operation, by F. W. Reichelderfer. Airships in gusts, by W. B. Klemperer. Meteorological research at the Daniel Guggenheim Airship Institute, by A. M. Kuethe and R. C. Robinson. Aerodynamic research at the Daniel Guggenheim Airship Institute, by Th. H. Troller.

Note: These publications reprint papers presented at the Daniel Guggenheim Airship Institute conferences on problems of lighter-than-air research between 1932 and 1935. Some of the papers contain bibliographical references. Transcriptions of discussion are also included.

GAMBLE, WILLIAM BURT, COMPILER

History of aeronautics; a selected list of references to material in The New York Public Library. New York: The New York Public Library, 1938. 325 p. 25 cm. Paper, \$2.00. 4346c

Contents: Bibliography. Traditional and literary accounts. General works. Lighter-than-air craft: Balloons. Airships. Heavier-than-air craft: Airplanes and ornithopters. Seaplanes. Gliders and gliding. Parachutes. Helicopters and autogiros. Kites. Engines. Propellers. Airplane flights. Military aeronautics. World War. Civil aeronautics. Air mail. Polar expeditions. Associations and conferences. Jurisprudence. Aeronautics and science. Photography and surveying. Animal flight. Women in aeronautics. Miscellaneous. Index of authors. Index of subjects.

Note: This is a list of over 5000 references to books and periodical articles in many languages dealing with the history of aeronautics. In cases where a title is not self-explanatory one- or two-line annotations are included.

HOYT, JOHN ROBERT

Safety after solo; how to fly 10,000 hours. New York: McGraw-Hill Book Company, Inc., 1944. 356 p. illus. 21 cm. \$3.00. 4347

Contents: Part I, Flying for fun: The right mental attitude. Recognizing weather: thunderstorms. Recognizing weather: fog. Recognizing weather: icing. Compass courses. What to do in a forced landing. Planning and making a cross-country flight. Part II, Avoiding the danger period: Sharpening the senses. What every pilot should know about turns. How to check your planes. Part III, Getting that CAA certificate: How to fly sixty minutes an hour. Five difficult maneuvers made easy. Good morning, Inspector! Part IV, For every pilot: How to use the eyes at night. Night flying. Avoiding dizziness in turns. If you're a new in-

structor. How high can you fly? The best pilots become scared. How to get 10,000 hours.

Note: Designed to assist pilots who have acquired enough flight time to become over-confident and careless, by showing them how to combat this danger by acquiring the right mental attitude, correct technique, and the knowledge of what to expect.

JORDANOFF, ASSEN

Jordanoff's Illustrated aviation dictionary. New York: Harper & Brothers, 1942. 415 p. illus. 25 cm. \$3.50. 4348

Contents: Technical and general aeronautical terms: Aerobatics, aerodynamics, aerostation, meteorology, navigation, radio, stress analysis, etc. Appendix: Glossary of aviation "slanguage"—slang used by American and British flying forces.

Note: A pictorial dictionary containing more than 2,000 aviation terms precisely defined in parallel words and pictures. It has been compiled from official sources.

JORDANOFF, ASSEN

Safety in flight. Illustrations by Frank L. Carlson and Fred L. Meagher. New York: Funk & Wagnalls Company, 1941. 371 p. illus. 25 cm. \$3.00. 4349

Contents: Practical application of our weather knowledge. The third dimension analyzed. Observing the weather. Shelters in flight—alternate airports. Short hop. Long hop. Typical cloud forms. Braznell instrument method. Radio as a navigational aid. The todays and tomorrows of aircraft. Airplane and engine accessories. Power, props, and plugs. Landing with "No See." Physical fitness. Aero talk.

Note: This volume serves as a sequel and supplement to the author's *Your wings* and *Through the overcast* for the material presented is an expansion of the chapters on meteorology, which appear in these earlier works. In technically correct, yet easily understood words and pictures, the book imparts a clear understanding of meteorology and knowledge of airplane instruments and their use in all conditions of flying. There is also a discussion of the performance of various types of airplanes under adverse weather conditions, and an outline of the basic principles of engine operation. The book is of particular value to aviation students, but it will also hold the attention of the layman with an interest in aeronautics.

JORDANOFF, ASSEN

Your wings. Illustrations drawn by Fred L. Meagher, Frank Carlson and Eric Sloane. New revised, enlarged edition. New York: Funk & Wagnalls Company, 1942. 294 p. illus. 25 cm. \$3.00. 4350

Contents (abridged): Simple aerodynamics. The parachute and its use. The take-off and landing. Turns, climbs and glides. Stalls and spins. The motor. The propeller. Your first solo flight. Visual aviation. The gyro and Sperry instruments. The engine and its food. Altitude—mixture—power. The spark plug and magneto ignition. Variable-pitch propellers. The airplane and its structural strength. Ice. Radio and aircraft. Instrument flying. Military flying. Air gusts, emergency maneuvers, and down-wind turn. Noiseless flight. Scheduled air transportation.

Note: A practical outline of the fundamentals of aerodynamics, and step by step instruction in the art of flying. The volume is designed to meet the needs of the aviation student, but because of its readability and simplicity of explanation, it will also prove of interest to the general reader. Numerous illustrative diagrams are used effectively to supplement and further clarify the textual material.

KNAPP, EDWIN JOHN

Basic physics for pilots and flight crews. New York: Prentice-Hall, Inc., 1943. 118 p. illus. 19 cm. \$1.65. 4351

Contents: Introduction. Units of measure. Vectors and balanced forces. Accelerated motion and laws of motion. Fluids at rest. Work, energy, power, and friction. Fluids in motion. Heat. Heating of the atmosphere. Properties of gases. Change of state. Atmospheric humidity.

Note: Developed in the classroom as a primary course for Army and Navy cadets, this text follows the Civilian Aeronautics

Administration syllabus for pilot training. Preparation is given for study of meteorology, flight theory and engine operation. Answers to questions and problems are given, and there is an index.

LANGEWIESCHE-BRANDT, WOLFGANG ERNST

Stick and rudder, an explanation of the art of flying. Special appendix on The dangers of the air, by Leighton Collins. Illustrated by Jo Kotula. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1944. 389 p. illus. 23 cm. \$3.75. 4352

Contents: How a wing is flown. The airplane's gaits. Life and buoyancy. The flying instinct. The law of the roller coaster. Wind drift. What the airplane wants to do. That thing called torque. The flippers and the throttle. The ailerons. The rudder. The turn. Straight and level cruising. The glide. The approach. The landing. The landing run. The dangers of the air. The working speeds of an airplane. Thin air.

Note: A thorough analysis of the behavior of airplanes in flight from the viewpoint of pilots learning to fly them. The author's thesis is that many flying accidents occur because pilots have the wrong mental images of what occurs in flying and controlling a plane. His principal object in this work is to present correct analyses of every flying act and situation in such a way as to correct the student pilot's faulty or incomplete concepts.

LANZ, JOHN E.

Lanz aviation dictionary in nine languages: English, Spanish, Portuguese, French, Italian, German, Russian, Chinese, and Japanese. Contributing editor, H. N. von Koerber. South Pasadena, Calif.: P. D. and Ione Perkins, 1944. 430 p. illus. 23 cm. \$6.50. 4353

Note: This dictionary, of value to aviation students, foreign language students, and libraries, covers such phases of aeronautical activity as aerodynamics, airplane design and construction, engines, balloons, seaplanes, meteorology, navigation, parachutes, and radio. The material is arranged in vertical columns, the English term first with its definition, then its equivalent in each of the eight foreign languages. In most cases the English definition is given in simple, non-technical language. Russian, Chinese, and Japanese terms are transliterated into the Latin alphabet. An appendix includes a list of symbols used on weather charts and maps, and tables of weights and measures with methods for converting them to other units.

LEY, WILLY

Rockets; the future of travel beyond the stratosphere. New York: The Viking Press, 1944. 287 p. illus. 22 cm. \$3.50. 4353a

Contents: Introduction. The beginnings of an idea. The decades of the great dreams. "The rocket's red glare . . ." Prophets with some honor. The battle of the formulae. Success, failure, and politics. The meteorological rocket. The rocket into cosmic space. The space ship. Terminal in space. Conclusion. Notes and addenda. Bibliography. Index.

Note: A discussion of the history of rockets, fictional and real, their present state of development, and their probable future. The author considers mainly the possibilities of the rocket as a space ship. Also included are information about the numerous space ships and interplanetary voyage in imaginative literature, an intimate account of modern rocket development, particularly in Germany in the 1930's, and a discussion of the meteorological rocket. Jet-propelled planes and the military rockets used in World War II are mentioned briefly. The bibliography covers eight pages.

LUSK, HILTON FRANK

General aeronautics. Revised edition. New York: The Ronald Press Company, 1940. 524 p. illus. 21 cm. \$3.75. 4354

Contents: Occupations in the aeronautical industry. Principles of aircraft flight. Construction and operation of airplanes. Aircraft propellers. Principles of aircraft engines. Construction and opera-

tion of aircraft engines. Aircraft engine and flight instruments. Aeronautical safety appliances and communication. Aviation—maps, piloting, radio, and instruments. Dead reckoning. Aeronautical meteorology.

Note: A textbook for technical institutes, colleges, and ground schools, and an aid for pilots' and aircraft engine mechanics' examinations, including the basic fundamentals emphasized in official requirements. Test questions are included.

MCINTOSH, COLIN HUGH

Long-range flight. New York: McGraw-Hill Book Company, Inc., 1944. 177 p. illus. 21 cm. \$2.50. 4355

Contents: Toward a better technique. Engine performance. Aircraft performance. Operating techniques for cruise control. The planned flight. Appendix: Temperature as a factor in fuel measurement.

Note: A recognized expert in his field provides a text for training pilots and navigators in the essential techniques of aircraft operation for long distance flight. The book explains the principles of efficient engine operation, the principles and use of airplane cruising charts, methods of cruising control, pre-flight planning, and controlled flight through the use of the "howgozit" chart.

MILBANK, JEREMIAH, JR.

The first century of flight in America. An introductory survey. Princeton, N.J.: Princeton University Press, 1943. 248 p. illus. 22 cm. \$2.75. 4356

Contents: Background of a great history. Three claims to distinction in early American aeronautics. A new pastime from the Old World. Flying "professors" before the Civil War. The vision of aerial navigation. John Wise, America's great aeronaut of the nineteenth century. The balloon in literature before 1860. T. S. C. Lowe and the Civil War. Trans-Atlantic schemers and balloon professionals. Aerostation versus aviation. Beginnings of the new era. Chronology. Sources and obligations. Bibliography. Notes. Index.

Note: This volume is a brief history of aeronautics in the United States before 1900. Problems of technology are treated only generally as they apply to the basic features of aircraft.

SERRALLES, JUAN K.

English-Spanish and Spanish-English dictionary of aviation terms. New York: McGraw-Hill Book Company, Inc., 1944. 131 p. 19 cm. \$2.50. 4357

Note: The words listed in this brief dictionary are primarily those used in the United States and Latin America. Most of the terms are followed by a letter indicating the branch of aeronautics to which they apply. Aerodynamics, electricity, hydraulics, propellers, engines, meteorology, navigation, radio, and military terminology are covered.

SHIELDS, BERT A.

Air pilot training. New revised edition. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1939. 657 p. illus. 23 cm. (A McGraw-Hill practical manual) \$4.00. 4358

Contents: Part I, Aircraft and theory of flight: The development of the airplane. Nomenclature. Elementary physics. Airfoils. Forces in flight. Action in controls. Care and maintenance of airplanes. Flight instruments. Parachutes. Part II, Aircraft engines: Engine classification and nomenclature. Engine performance. Fuel systems. Carburetion systems. Ignition and electric systems. Lubrication. Engine instruments. Propellers. Power-plant operation. Appendix. Load-factor problems. Part III, Meteorology: The atmosphere. Effects of temperature variations. Air currents. Air masses. Fronts and related air movements. Collection and dissemination of weather data. Applied meteorology. Part IV, Air navigation: Maps and charts. The compass. Laying out a course. Drift problems. Radio navigation. Air-navigation computers and graphs. Navigation problems. Celestial navigation. Index.

Note: A comprehensive introductory text on aerodynamics, meteorology, and air navigation. The author has endeavored to present all the information necessary to pass the written examina-

tion for private and commercial pilot licenses in the United States. This revised edition includes an appendix on load factors and a new chapter on navigation problems. Parts I and II of this title are also available as follows: *Theory of flight and aircraft engines*, New York: McGraw-Hill Book Company, Inc., 1942, 377 p., \$2.75. Parts III and IV are available also as *Meteorology and air navigation*, New York: McGraw-Hill Book Company, Inc., 1942, 285 p., \$2.25.

SIMMONS, VIRGIL

Air piloting; manual of flight instruction. Revised edition. New York: The Ronald Press Company, 1941. 758 p. illus. 21 cm. \$4.00. 4359

Contents: General considerations. Airplane and controls. Preliminary instruction and elementary maneuvers. Intermediate maneuvers. Advanced maneuvers. The private pilot. The commercial pilot. Cross-country flying. Airways radio. Instrument flying and rating. The flight instructor. Civil air regulations. Meteorology. Aerial navigation. Seaplane flying. Miscellaneous. Additional questions for commercial pilot examination.

Note: A manual of flight instruction illustrating and describing the best known means of developing pilot skill. Technical material is supplied in text, question and answer form to aid in passing the various examinations. Approved methods of training are analyzed. From analyses of official requirements the book sets forth prescribed goals for each rating certificate.

SMITH, FREDERICK H.

Flying by instruments. New York: National Aeronautics Council, Inc., 1942. 153 p. illus. 22 cm. \$1.50. 4359a

Contents: Foreword. Instrument flying practice. The use of blind flying panels. Instrument flying. Course keeping by radio and gyro. Flying by gyro. Flying by compass. The use of the radio compass or loop direction finders. The turn indicator in instrument flight. Radio airport approach and blind landing. The relative merits of ground and aircraft directional radio systems.

Note: This book contains the information on flying by instruments needed to qualify for an airplane pilot's license. Most of the material first appeared in the publication *Aeronautics*; it was extensively revised for presentation in book form.

SMITH, HENRY LADD

Airways; the history of commercial aviation in the United States. New York: Alfred A. Knopf, 1942. 430 p. illus. 22 cm. \$3.50. 4360

Contents (abridged): Kitty Hawk. The day of the birdman. The mail flies through. Law and order in the airways. The wings grow stronger. The Black Committee. The age of the skyliner. Safety pays dividends. Peace and war. Appendix: The first air-mail law (Kelly Act) and amendments. The McNary-Watres Act. Determination of passenger subsidy element in air-mail payments for fiscal years 1931-33. Air-mail route mileage and extensions. Air lines in the United States. Chronology. Bibliographical notes. Notes. Index.

Note: This work is an authentic and well-written history of the development of air transportation in America. Much reference data are included.

SPEAS, R. DIXON

Airplane performance and operation, a manual for aircraft flight crews. Illustrated by Dorman H. Smith. New York: McGraw-Hill Book Company, Inc., 1943. 121 p. illus. 21 cm. \$1.50. 4361

Contents: Standard atmosphere. Engine-control procedures. Power ratings and engine operation procedures. Power control. Operating weights and speeds. Take-off and landing distances. Rates of climb. Long-range flight technique. Flight planning. Altimeter settings. Navigational computers. Airplane loading. Conversion charts.

Note: Designed to instruct flight crews in the various technical factors affecting airplane performance and operation. Basically, the manual deals with the science of getting the most out of an airplane, of determining the conditions of engine operation that will produce a given desired result, and of determining what can be done, both with the engine and with the airframe, without infringing upon the desired margins of safety.

TURNER, ROSCOE, AND JEAN H. DUBUQUE

Win your wings; a practical and comprehensive primary aviation training manual for the student, pilot and instructor. Chicago: F. J. Drake & Co., 1940. 2 v. illus. 23 cm. \$3.00 per volume. 4362

Contents: Volume I, Highlights in the history of aeronautics. Fundamental principles of flight. Elementary flight instructions, stage A. Aerology and meteorology. Practical aviation. Digest of the civil air regulations for student and private pilots. Aeronautical dictionary. Index. Volume II, Advanced and aerobatic maneuvers. Modern aircraft instruments. Principles of aircraft engines. Airplane structure. Radio and instrument aviation. Winged commerce. Your career in aviation. Index.

Note: A textbook for beginners in aviation, designed to supplement actual flight instruction and to assist the student to pass the written examination given by the Civil Aeronautics Authority for a private pilot certificate. Some of the material is out of date due to the extraordinary expansion of aviation during World War II and the shift in emphasis from civil to military aviation.

UNITED STATES. BUREAU OF AERONAUTICS (NAVY DEPARTMENT)

Instrument flight. Part one. Washington, D.C.: Bureau of Aeronautics, U.S. Navy, 1943. 155 p. illus. 18 cm. Paper, \$0.35. 4362a

Contents: The attitude and "1-2-3" systems. Aerodynamics of level straight flight—straight climbs and descents. Aerodynamics of turns. Gyroscopes. Gyro horizon. Directional gyro. Turn indicator. Ball bank indicator. Air-speed meter. Vertical speed-rate-of-climb indicator. Altimeter and altitude. Compass. Sensations in instrument flight. Analysis of maneuvers. Patterns.

Note: The first of a projected set of two pamphlets intended to show to the student pilot that instrument flying is as logical and easy as contact flying. The present work discusses the "attitude" system of instrument flying, which is the use of instruments with reference to the plane's attitude even though the real horizon cannot be seen. Emphasis is upon simplicity of exposition and many cartoon-type illustrations are employed to further clarify the explanations. Part II, as yet unpublished, will cover more advanced work.

UNITED STATES. CIVIL AERONAUTICS ADMINISTRATION

Digest of civil air regulations for pilots. Seventh edition. Washington, D.C.: Government Printing Office, 1943. 70 p. illus. 24 cm. (United States. Civil Aeronautics Administration. Civil aeronautics bulletin no. 22) Paper, \$0.20. 4362b

Contents: Preface. Introduction. Flight rules. Instrument flight rules. Designated areas. Pilot regulations. Certification of pilots. Aircraft certification. Emergency and miscellaneous regulations. Enforcement. Glossary.

Note: The purpose of this publication is to explain to the student pilot in as nonlegal phraseology as practicable those provisions of the Civil Air Regulations which most directly affect the pilot. Although designed primarily as a textbook, it is intended to be of value also to anyone preparing for the examination on the Civil Air Regulations required for issuance of a pilot's certificate. This edition is based upon the regulations in effect on June 1, 1943. Amendments to Civil Air Regulations are carried in the monthly *Civil aeronautics journal*, Washington, D.C.: Government Printing Office, per year, \$0.50.

UNITED STATES. CIVIL AERONAUTICS ADMINISTRATION

Fundamentals of elementary flight maneuvers. Washington, D.C.: Government Printing Office, 1943. 82 p. illus. 27 cm. (United States. Civil Aeronautics Administration. Civil aeronautics bulletin No. 32) Paper, \$0.20. 4362c

Contents (abridged): Familiarization with the airplane. Starting the engine. Taxiing. Effect of the controls. Straight and level flight. Turns. Normal climbs and glides. Series of stalls. Take-offs. 90-degree approach. Landings. Forced landings. Normal and accidental spins. Cross-wind take-offs. Pylon eights. Series of turns. Spirals. Power-wheel landings. Side slips. Check flights. Questions.

Note: An illustrated bulletin for the civilian student pilot, designed to supplement and explain the lessons received from the flight instructor. Consists of loose-leaf sheets presenting brief, concise, and simple explanations for each maneuver studied and executed.

UNITED STATES. NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

Twenty-fifth annual report of the National Advisory Committee for Aeronautics, 1939; including Technical reports nos. 645 to 680. Washington, D.C.: Government Printing Office, 1940. 745 p. illus. 29 cm. \$2.50. 4362d

Contents: Twenty-fifth annual report of the National Advisory Committee for Aeronautics. Technical reports no. 645-680.

Note: This volume contains the last full report of the National Advisory Committee for Aeronautics, a 47-page document containing reports and recommendations of the Committee, covering the fiscal year ending June 30, 1939. This is followed in the present volume by 36 *Technical reports*, each complete with summary, text, illustrations, and bibliography, on such subjects of aeronautical interest as "A study of air flow in an engine cylinder," "Design of N.A.C.A. cowlings for radial air-cooled engines," and "Tensile elastic properties of 18:8 chromium-nickel steel as affected by plastic deformation." Reports issued during the war years did not cover the full work of the N.A.C.A. The *Technical reports* published subsequent to no. 680 were issued separately and usually in mimeographed format.

UNITED STATES. WAR DEPARTMENT

Theory of flight, prepared under the direction of the Chief of the Air Corps. War Department Technical manual 1-400. Washington, February 24, 1941. Washington, D.C.: United States Government Printing Office, 1941. 182 p. illus. 22 cm. Paper, \$0.30. 4363

Contents (abridged): Fundamentals of aerodynamics. Airfoils. Parasite drag. Propellers. Performance, Equilibrium, stability, and control. Dynamic loads. Appendix: Nomenclature. Index.

Note: Supersedes Technical regulations 1170-205, March 1, 1937. Designed to provide (a) the technical training to understand and obey the technical orders and instructions covering the use and operation of military aircraft; (b) a working knowledge of the mechanical and physical laws which govern airplane performance, create a proper respect for the limitations of the airplane, and a corresponding increase in the efficiency of operations; (c) a working knowledge of the progress of aeronautical research sufficient that in conversation an Air Corps officer's remarks may reflect credit upon himself and the military service. Calculus is excluded from the discussion, and trigonometry is mentioned only at the rare intervals when avoiding it would appear to lead to complications.

WEBSTER, DAVID LOCKE, EDITOR

Civil pilot training manual. Second edition. Washington, D.C.: Government Printing Office, 1941. 334 p. illus. 26 cm. (United States. Civil Aeronautics Administration. Civil aeronautics bulletin no. 23) Paper, \$0.65. 4363a

Contents: Preface. Part one, Aircraft operation: Theory of flight. Inspection and care of aircraft and engines. Instruments. Parachutes. Part two, Elementary flight course: Stage A, dual instruction. Stage B, primary solo. Stage C, precision maneuvers. Stage D, cross-country flying and flight test. Part three, Secondary flight course: Stage A, familiarization and review. Stage B, advanced precision maneuvers. Stage C, advanced confidence maneuvers. Stage D, review cross country, and flight test. Part four, Seaplane flying: General. Taxiing. Sailing. Approach and departure. Take-offs. Landings. Cross-country seaplane flying. Part five, General information: Load factor information for pilots. Engine

idling and carburetor heat. Axioms for the pilot. Fire in the air. Appendix: Glossary of aeronautical terms.

Note: This manual is designed primarily for the use of students taking the elementary ground and flight courses and the secondary flight course of the Civilian Pilot Training Program. It is also intended as a standardized handbook of safe flying for all civilian student pilots. The first edition of this manual (1940) was the work of D. J. Brimm, Jr., J. S. Parker, Jr., and Jack R. Cram. The changes in the second edition, which was edited by David L. Webster, consist primarily in the addition of further explanations of some of the maneuvers without changing the maneuvers themselves. The companion volume for instructors is *Flight instructor's manual*, third edition, edited by David L. Webster (see below).

WEBSTER, DAVID LOCKE, EDITOR

Flight instructor's manual. Third edition. Washington, D.C.: Government Printing Office, 1941. 146 p. illus. 26 cm. (United States. Civil Aeronautics Administration. Civil aeronautics bulletin no. 5) Paper, \$0.35. 4363b

Contents: Preface. Classroom instruction. Basic force considerations for theory of flight study. Civil air regulations. The flight instructor and the student. Preliminary instruction. Instruction requirements and the sequence of maneuvers. Stage A, elementary course. Stage B, elementary course. Stage C, elementary course. Stage D, elementary course. Secondary course. Stage A, secondary course. Stage B, secondary course. Stage C, secondary course. Stage D, secondary course. Conclusion. Index.

Note: The purpose of this book is to standardize flight instruction and at the same time to provide the flight instructor with information that will enable him to train his students as safe pilots, equipped with a maximum of knowledge and technique in a minimum of time. The book is also intended to aid the instructor in the further development of his instructing ability. The first edition of this work (1939) was largely the work of Fred Lanter, Chief of the General Inspection Division of the Civil Aeronautics Administration. The second edition (1940), considerably changed and enlarged, was prepared by Daniel J. Brimm, Jr., J. S. Parker, Jr., and Jack R. Cram. The present edition, the work of Daniel L. Webster, has been revised and expanded from the second edition, chiefly in the explanations of some of the maneuvers. The third edition is designed to supplement the student flight textbook, *Civil pilot training manual*, second edition, also edited by Daniel L. Webster (see above). The parallel volume for ground instructors is *Ground instructor's manual*, Washington, D.C., 1940 (Civil aeronautics bulletin no. 30), paper, \$0.15.

WEEMS, PHILIP VAN HORN, AND CHARLES A. ZWENG

Instrument flying. Annapolis: Weems System of Navigation, 1940. 321 p. illus. 24 cm. \$4.00. 4363c

Contents: Instruments and classifications. Relation between the instruments. Instrument training. Federal aids to navigation. Use of the radio range. Airway meteorological service. Meteorological elements. Air masses. Winds, fogs, and ice. Observing and reporting elements of observation. Civil air regulations. Navigation. Appendixes: Quiz section. Navigation equipment. Sources of information. Index.

Note: The authors based this work upon *Instrument flying*, by Howard Stark, "one of the first, and one of the most important books on the use of instruments in aviation," which had become outdated after its author's death. The result was a completely new book, prepared with a view to meeting the requirements for the U.S. Government instrument rating. To assist the student preparing for written examinations, the appendix includes a section containing numerous typical questions with answers.

WRIGHT, BAILEY AYERS, AND OTHERS

Flight: a general survey of fundamentals of aviation. Chicago: American Technical Society, 1941. 4 v. illus. 24 cm. \$11.50. 4363d

Contents: Aircraft engines, by Bailey Wright, Ray F. Kuns, Rex Martin, and others. Construction and maintenance, by Bailey Wright, W. E. Dyer, Rex Martin, and others. First principles, by Bailey Wright, James J. Smiley, Jr., Rex Martin, and others. Meteorology and aircraft instruments, by Bailey Wright, W. E. Dyer, and Rex Martin.

Note: This set of books, that may be purchased and studied separately, together comprises an introductory course in aeronau-

tics for the general reader as well as for the beginning student. The treatment throughout is elementary and practical. Each volume contains a set of quiz questions with answers. The work is a revision of material published in 1929-1930 by Junior Air Service of America, Inc., under the title: *Commercial aeronautics*.

ZWENG, CHARLES A.

Zweng aviation dictionary, compiled and edited by Charles A. Zweng. Los Angeles, Calif.: Printed by Wolfer Printing Company, 1944. 366 p. illus. 23 cm. \$6.00. 4364

Note: The author of this dictionary has attempted to cover the entire field of general aviation, including aerodynamics, aircraft, theory of flight, powerplants and accessories, air navigation, radio and instrument flying, and aeronautical meteorology. Besides the standard words and phrases of aviation, a number of new expressions current since World War II are included. Under each manufacturer's name listed there is given a description of the various types of bomber and fighter planes produced by that company, including speed, horsepower, and range data. Short biographical facts on certain important contributors to civil and military aviation are also presented.

Mathematics in Aviation

AYRES, FRANK, JR.

Basic mathematics for aviation. With an introduction by Lieutenant-Colonel Henry E. Smith. Boston: Houghton Mifflin Company, 1943. 225 p. illus. 21 cm. \$2.35. 4365

Contents: Basic computation. Algebra. Geometry. Trigonometry. Appendix. Index.

Note: A summarized presentation of those mathematical concepts considered essential knowledge for every pilot. The text coincides with the course given by the Army Air Force College Training Program and covers the basic elements of arithmetic, algebra, geometry, and trigonometry. An appendix includes the use of the protractor, tables of weights and measures, and tables of squares, roots, and logarithms.

DOWNER, ALVIN EMERY

Practical mathematics of aviation. Third edition. New York: Pitman Publishing Corporation, 1942. 120 p. illus. 21 cm. \$1.00. 4366

Contents: Arithmetic review. Equations. Formulas. Graphs. Ratio, proportion and percentage. The right triangle. Geometric constructions. Simple mechanics. Miscellaneous problems. Answers. Tables. Index.

Note: A brief textbook. The material has been selected from the viewpoint of its usefulness to the person entering some branch of aviation other than engineering.

FELKER, CHARLES AURAND, AND OTHERS

Aviation mathematics, by C. A. Felker, E. A. Schweinhagen, and H. W. Paine. Milwaukee: The Bruce Publishing Company, 1944. 356 p. illus. 22 cm. \$2.72. 4367

Contents: Common fractions. Decimal fractions. Measuring instruments. English and metric measurements. Applied algebra and formulas. Percentage and its applications. Square root. Ratio and proportion. The slide rule. Graphs in aviation. Applied geometry and mensuration. Logarithms. Applied trigonometry. Airplane horsepower. Simple mechanics and aerodynamics. Essentials of air navigation. Tables. Index.

Note: A text for use in senior high school preflight classes and in vocational high school aviation-mathematics courses. The work is intended to lay a sound foundation of the mathematics needed later by student pilots.

GRIFFITHS, HAROLD

Mathematics for aircraft engine mechanics. New York: McGraw-Hill Book Company, Inc., 1944. 367 p. illus. 21 cm. \$2.50. 4368

Contents: Part I, Sharpening the tools for thinking: A review of the fundamentals of arithmetic. To the student. Part II, Functioning of the engine: Where power is produced. How power is produced. How power is transmitted. Some factors in the production of power. Part III, Engine repair: Disassembly. Repair. Assembly. Run-in. Part IV, Valve and ignition timing: Fundamental principles. Part V, Engine accessories: Propellers. Spark plugs. Carburetors. Superchargers. Appendix. Index.

Note: Fundamental principles of arithmetic are taught by means of discussions, examples, and problems directly related to the work of aircraft mechanics. Incidental information about airplane structure and function accompanies the treatment of mathematics. Answers to the problems are given and there is a short glossary and bibliography.

MCGOWAN, WAYNE A., AND OTHERS

Solution of equations, by Wayne A. McGowan and technical staff of Aero Publishers. Prepared under special supervision of Carlo Re. Second edition. Los Angeles, Calif.: Aero Publishers, 1943. 302 p. illus. 23 cm. \$3.50. 4368a

Contents (abridged): Algebra. Geometry. Trigonometry. Logarithms. Analytical geometry of straight lines. Slide rule. Problems. Trigonometry tables. Logarithm tables. Answers to problems. Index.

Note: The fundamentals of algebra, geometry, trigonometry, logarithms, and analytic geometry for use as a text in industrial mathematics courses or home study. The problems, which are grouped together in one section at the back of the book, instead of appearing in the text proper, emphasize practical applications with special attention to those occurring in the aircraft industry. The logarithmic tables are to six places and the trigonometric functions to five.

NAIDICH, JAMES

Mathematics for the aviation trades. New York: McGraw-Hill Book Company, Inc., 1942. 267 p. illus. 23 cm. \$1.80. 4369

Contents: Part I, A review of fundamentals for the airplane mechanic: The steel rule. Decimals in aviation. Measuring length. The area of simple figures. Volume and weight. Angles and construction. Graphic representation of airplane data. Part II, The airplane and its wing: The weight of the airplane. Airfoils and wing ribs. Part III, Mathematics of materials: Strength of material. Fittings, tubing, and rivets. Bend allowance. Part IV, Aircraft engine mathematics: Horsepower. Fuel and oil consumption. Compression ratio and valve timing. Part V, Review: One hundred selected review examples. Appendix: Tables and formulas. Index.

Note: Written for students in trade and technical schools. It is intended to give mechanics engaged in precision work the thorough knowledge of arithmetic applied to their trade that instructors and employers demand. Each new topic is presented as a job, stressing the practical aspect of the text, and most jobs can be covered in one lesson.

NAIDICH, JAMES

Mathematics of flight. New York: McGraw-Hill Book Company, Inc., 1943. 409 p. illus. 23 cm. (A McGraw-Hill practical manual) \$2.75. 4370

Contents: Part One, A review of mathematics of aviation: Mathematical shorthand. The equation. Ratio, scales and proportion. Angles and construction. Similar figures and scale drawing. Trigonometry. Part Two, Mathematics into flight: Center of gravity, stability and control. Part Three, Aerodynamics: Basic principles. The life of an airplane. Wind drag and parasite drag. Level flight. Climbing, gliding, and turning. Review test. Part Four, Aircraft research and specifications: Introduction to aircraft research. Aircraft directory. Important facts about modern airplanes. Part Five, Appendix: Tables, formulas and special topics.

Note: Includes the topics in algebra, geometry, and trigonometry needed in pre-flight training. The problem material throughout is enriched by practical aviation material drawn from aviation mechanics, air pilot training, aerodynamics, and air navigation.

NEWSOM, CARROLL VINCENT, AND HAROLD D. LARSEN

Basic mathematics for pilots and flight crews. New York: Prentice-Hall, Inc., 1943. 153 p. illus. 19 cm. \$2.00. 4371

Contents: Review of arithmetic. Elementary operations in algebra. Equations and formulas. Proportion and variation. Graphs. Units of measure and dimensional relations. Angular measure. Scales. Vectors and vector diagrams. The circular slide rule in navigation. Trigonometry of the right triangle. Tables of trigonometric ratios. Appendix: Miscellaneous facts for reference. Answers. Index.

Note: A basic course in mathematics specifically designed for prospective air cadets. Reviews arithmetic, algebra, and geometry as applied to the mathematics of flight. Follows the syllabus of the United States Civilian Pilot Training Program and contains every mathematics topic in the United States manual. Teaches the use of the circular slide rule and mechanical computers as used in air navigation. Illustrates the use of the vector in force and velocity diagrams, and shows how to construct wind triangles.

Meteorology in Aviation

EATON, ELBERT LEE

Weather guide for air pilots. New York: The Ronald Press Company, 1939. 74 p. illus. 21 cm. \$2.00. 4372

Contents: Introduction. Relative functions of the atmosphere, water vapor, and temperature. Winds, cyclones, anticyclones, and an introduction to air mass and frontal analysis. Particular hazards to aviation. Clouds. Weather services offered by the Civil Aeronautics Authority and the United States Weather Bureau. Climate characteristics of various sections of the United States. Aerology. Flight forecasts. Index.

Note: This book provides a brief guide for interpretation of reports and forecasts issued by professional meteorologists, for aviators and executives directing flights who lack time for exhaustive study of meteorology. It applies essentials to everyday problems, without mathematics or lengthy explanations.

FINCH, VERNOR CLIFFORD, AND OTHERS

Elementary meteorology, by Vernor C. Finch, Glenn T. Trewartha, M. H. Shearer, and Frederick L. Caudle. New York: McGraw-Hill Book Company, Inc., 1942. 301 p. illus. 23 cm. \$1.76. 4373

Contents: Earth and its planetary relations. Temperature of the atmosphere. Atmospheric pressure and winds. Atmospheric moisture and precipitation. Storms and their weather types. Climates of the tropics and dry middle latitudes. Climates of middle and high latitudes. Weather information for pilots. Weather applications to aviation. The seasons. Climatic data for selected stations. Meteorological instruments and the weather map. Interpretation of maps. Useful data and tables. Index.

Note: An introductory text in meteorology and its applications to aviation, written particularly for use in pre-flight training courses for aviators. Much of the material is based on the authors' *The earth and its resources*, New York, 1941 (see Index). Review questions, topics for reports and discussion, and lists of references are included with each chapter.

HALPINE, CHARLES GREHAM

A pilot's meteorology. New York: D. Van Nostrand Company, Inc., 1941. 220 p. illus. 23 cm. \$2.00. 4374

Contents: Introduction. The atmosphere. Its characteristics, composition, and structure. The elements of meteorology and their measurements. Clouds, their types and classifications. Variations of temperature and their effects. Ice formation on aircraft. Circulation of air. Currents and winds. Air masses, fronts and disturbances—their development and effect. Weather reports. Weather maps. Weather forecasts. Index.

Note: This elementary book was designed for the non-technical reader and the high school student. It explains the principles of meteorology without the use of mathematics, and without requiring a previous knowledge of physics. Numerous photographic illustrations show the appearance of the various cloud formations.

HAYNES, BENARTHUR CASTLE

Meteorology for pilots. Second edition. Washington, D.C.: Government Printing Office, 1943. 246 p. illus. (part col.) 24 cm. (United States. Civil Aeronautics Administration. Bulletin no. 25) Paper; \$0.75. 4375

Contents: Aviation weather. Meteorological elements. Weather maps. Structure of the atmosphere. Moisture of the atmosphere. Heat energy in the atmosphere. Stability of the atmosphere. Wind and pressure. Air masses of North America. Fronts. Circulation of the atmosphere. Fog and stratus clouds. Thunderstorms. Ice formation on aircraft. Weather for flight plans. Weather forecasting for flight planning. Analysis of the surface weather map. Upper air maps. Appendixes. Index.

Note: Especially prepared for use as a text in the ground instruction courses of the Civil Aeronautics Administration's War Training Service, this volume is applicable to pilots and is intended to give the student flier a sound background in meteorological theories and practices. The treatment assumes that the reader has had no previous training in meteorology. The second edition incorporates the developments in the field between 1941 and 1943, and new chapters have been added on aviation weather, weather for flight plans, and analysis of the surface weather map, together with a discussion of carburetor icing. Surface weather maps and pertinent text matter have been changed to incorporate use of the 1942 International Station Model, and new maps show isobaric and frontal analysis of weather in the South Atlantic and South Pacific.

KRACHT, PETER ERVIN

Meteorology for ship and aircraft operation. New York: Cornell Maritime Press, 1942. 373 p. illus. 19 cm. \$3.00. 4376

Contents (abridged): Facts about the weather. Vertical winds and accompanying weather. Horizontal winds and accompanying weather. Fog and other low clouds. Appendixes: Transport of moisture by horizontal winds. Air mass weather. History of a cyclonic wind system and origin of an anti-cyclone. Glossary of winds. Abbreviated glossary of technical terms. Cloud forms. Index.

Note: A simplified meteorology textbook intended to aid working navigators and aviators in obtaining a practical knowledge of the subject as it applies to their particular weather problems. The appendix contains a useful glossary of technical terms.

TAYLOR, GEORGE FREDERIC

Aeronautical meteorology. Revised and enlarged edition. New York: Pitman Publishing Corporation, 1941. 472 p. illus. (part col.) 23 cm. \$4.50. 4377

Contents: The atmosphere. Observational material. Thermodynamics. Circulation. Air masses—general. Air masses—North America. Air masses—Asia. Air masses—Europe. Fronts. Frontogenesis. Structure of extratropical cyclones. Thunderstorms—tornadoes—hurricanes. Condensation and precipitation. Clouds. Fog and stratus clouds. Special problems of aviation. The weather chart. Weather chart analysis. Forecasting. Forecasting from local indications. Airline meteorological departments. Flight dispatching. Climatology. Appendix. Index.

Note: A practical text and reference book for the airline pilot and dispatcher, as well as for the general student in meteorology. Mathematical treatment has been simplified throughout, so that a knowledge of college algebra is sufficient for the understanding of most of the theory except in a few instances where calculus is used to derive formulas. In the chapters on map technique the author attempts to give rather detailed instructions for preparing a weather chart, beginning with the reception of the signals and ending with the finished chart. The present edition contains additional data tables, new material on the practical use of the kinematic formulas, and additions to the bibliographic references at the end of each chapter.

UNITED STATES. WAR DEPARTMENT

Basic weather for pilot trainees. War Department Technical manual no. 1-232. War Department, Washington, April 22, 1942. Washington: United States Government Printing Office, 1942. 204 p. illus. 22 cm. Paper, \$0.35. 4378

Contents: Temperature. Pressure. Winds. Moisture in atmosphere. Clouds. Hazards. Introduction to air masses and fronts. Air mass weather. Frontal weather. Fog. Thunderstorms. Icing. World weather. Appendixes. Index.

Note: A text prepared especially for the pilot, designed for use in the weather courses given in flying schools. It does not constitute a complete weather course as a great deal of information important to the ground weather man but not to the pilot has been omitted and some materials included are not primarily concerned with the weather but are important to the pilot. Parts have interest for the general reader.

UNITED STATES. WAR DEPARTMENT

Weather manual for pilots. Prepared under the direction of the Chief of the Air Corps. Washington, D.C.: Government Printing Office, 1940. 293 p. illus. 21 cm. (Technical manual no. 1-230) Paper, \$0.40. 4379

Contents: General introduction. Air mass analysis. Atmosphere and air mass properties. Air movements. Clouds. Air masses and fronts. North American winter air masses. North American summer air masses. North American moist fronts. North American dry fronts. Forecasting. Fog and low stratus. Thunderstorms, tornadoes, and dust storms. Icing of aircraft. Terrain effects. Climatology. Appendixes: List of supplementary texts and subjects. Isobaric analysis. Forecasts. Synoptic weather map. Constants and equivalents. Glossary of terms. Bibliography of meteorology.

Note: The purpose of this manual is to provide Army airplane pilots with the fundamentals of meteorology in order to permit them when necessary to make decisions regarding the weather.

VETTER, ERNEST G.

Visibility unlimited; an introduction to the science of weather and the art of practical flying. With an introduction by George Russell Harrison. Illustrated by the author and Earle C. Wenner. New York: W. Morrow and Company, 1942. 352 p. illus. 23 cm. \$4.00. 4380

Contents: A thing in the air. Air, the blanket of life. Insolation vs. a frozen universe. Home of the winds. Air masses—weather bearers. Dust also serves—with water. Fahrenheit and Centigrade. Atmospheric pressure. Surface winds. Signposts of the skyways. Air mass significance. Cyclones and anticyclones. Hazards to aviation. The synoptic chart. Airway weather reports. Proverbs, portents and predictions. Principles of navigation. The earth. Maps and charts. Especially for aviation. Methods of navigation. The man-made lodestone. Variation and deviation. Wind again—a help or a hindrance. Dead reckoning. Practical problems. Navigation instruments. Aircraft radio. The radio-compass and direction-finder. The voice of the airways. New developments. Practical flying. Index.

Note: An introductory approach to the study of meteorology in relation to the practical aspects of flying, written as an aid for the student pilot and for the general layman, including the youth of high-school age interested in flying. Features of the book are the collection of twenty-four full-page cloud photographs, many close-up photographs of airplane navigation instruments, and numerous line drawings throughout the text. The scope is similar to that of basic training courses in the military services and the requirements for a civilian pilot's license in the United States.

Aerodynamics

CARTER, CLIFTON CARROLL

Simple aerodynamics and the airplane. Fifth edition. New York: The Ronald Press Company, 1940. 510 p. illus. 21 cm. \$4.50. 4381

Contents: Introduction. The airfoil. Criteria for the selection of airfoils. Parasite resistance. The propeller. The complete airplane. Stability. The control surfaces. Performance. Dynamic loads. Aircraft instruments. Appendixes: Description of the autogiro. Nomenclature for aeronautics. Aerodynamic equations. Problems in simple aerodynamics.

Note: An elementary, basic treatment prepared for use in the course taken by all cadets at the United States Military Academy, many of whom are assigned to the Air Corps after graduation. The presentation is not highly technical, but sound fundamental principles are developed.

DIEHL, WALTER STUART

Engineering aerodynamics. Revised edition. New York: The Ronald Press Company, 1936. 556 p. illus. 22 cm. \$7.00. 4382

Contents: Introduction. Definitions and symbols. Elements of theoretical fluid dynamics. Applied wing theory. Wind-tunnel tests. Airfoil data. Flaps and high-lift devices. Static stability and control. Dynamic stability. Parasite drag data. Engine and propeller considerations. Performance calculation—power curves. Performance estimation. Range and endurance. Special performance problems. Special flight problems. Fundamental design considerations. Seaplanes and flying boats. Flight testing and performance reduction. Appendixes: Standard atmosphere. General conversion factors. Useful formulas.

Note: Concise, practical information on the dynamics of plane design for designers and advanced students. Essential conclusions from a vast amount of test data are presented in equations or charts from which desired factors may be obtained directly, with tabular data and numerical examples where required. Numerous references are cited for consultation of original sources.

GILLMER, THOMAS CHARLES, AND H. ERICH NIETSCHE

Simplified theory of flight. New York: D. Van Nostrand Company, Inc., 1941. 162 p. illus. 23 cm. \$1.75. 4383

Contents: Introduction—Historical. Part I, The airfoil: The airfoil and the air's structure. Lift and drag. Characteristics of the airfoil. Plan form of the airfoil. Part II, The complete airplane: The forces acting on the complete airplane. Control surfaces. The airplane in flight. Stability. Performance. Appendix: Effect of flying on the pilot. Effect of flaps on the airplane in flight. Vectors and forces. Aerodynamic glossary. Index.

Note: An elementary textbook for pilots, students, and beginners in aviation. The theory of flight is discussed without the use of mathematical formulae or engineering terms. Simple diagrams are employed to explain the essential physical laws.

JONES, BRADLEY

Aerodynamics for pilots. Washington, D.C.: Government Printing Office, 1940. 158 p. illus. 26 cm. (United States. Civil Aeronautics Administration. Civil aeronautics bulletin no. 26) Paper, \$0.30. 4383a

Contents: Preface. Physical laws. Physical properties of air. Fluid motion. Forces on wings. Parasite drag. Engine power. Propellers. Straight level flight at sea level. Straight level flight at altitude. Climbing flight. Gliding flight. Performance study. Turning flight. Dynamics of taking-off. Spins. High lift devices. Longitudinal stability. Lateral stability. Directional stability. Control surfaces. Dynamic loads.

Note: This book was prepared for use as a text on aerodynamics in the controlled restricted commercial course of the Civilian Pilot Training Program. The material is presented from the standpoint of the pilot rather than the engineer. While the subject is advanced, effort was made to present it in such a manner as to bring it easily within the grasp of a student equipped with a limited background of mathematics and physics.

JONES, BRADLEY

Elements of practical aerodynamics. Third edition. New York: John Wiley & Sons, 1942. 459 p. illus. 23 cm. \$3.75. 4384

Contents: Physical properties of air. Effects of deflecting air streams. Air flow. Airfoils. Induced drag of monoplanes. Induced drag of biplanes. Parasite drag. Engines. Propellers. Airplane performance at sea level. Performance at altitude. Take-off and landing. Endurance and range. Factors affecting performance. Turns and load factors. The control surfaces. Static stability. Auxiliary lift devices. Unconventional types of aircraft. Materials and construction. Instruments. Avigation. Aerostatics. Appendixes: Nomenclature. Answers to problems. Index.

Note: An elementary study of aerodynamics, with mathematical formulae held down to fundamental and understandable processes. The third edition has been revised, with some subjects enlarged into individual chapters that had been treated briefly in previous editions.

LUDINGTON, CHARLES TOWNSEND

Smoke streams; visualized air flow. Preface by Hon. Edward Warner. New York: Coward-McCann, Inc., 1943. 144 p. illus. 21 cm. \$2.75. 4384a

Contents: Preface (by Edward Warner). Visualized aerodynamics. The Griswold smoke tunnel. Lift. Airfoil sections and lift. Drag. Improvements in the airplane. High-lift devices. Downwash effects—tail location. Wing-tip losses. What the airplane wants to do (by Wolfgang Langewiesche). What the pilot wants the airplane to do. Miscellaneous air-flow phenomena. Building a miniature two-dimensional smoke tunnel.

Note: A study in aerodynamics based on the fact that air flow, and its behavior when in contact with various bodies, can be visualized through the introduction of smoke into an air stream. Most of the book deals with aeronautics, but the author also discusses the influence of ships, automobiles, and architectural styles upon air flow. Fully illustrated with photographs of smoke streams under varying conditions.

MILLIKAN, CLARK BLANCHARD

Aerodynamics of the airplane. New York: John Wiley & Sons, Inc., 1941. 171 p. illus. 23 cm. (Galcit aeronautical series) \$2.50. 4385

Contents: Fundamental principles. The aerodynamicist's basic data. Performance. Longitudinal stability and control. Lateral stability and control. Chart A, Density and pressure altitude conversion chart. Chart B, Composite performance chart. Index.

Note: A brief but intensive summary of those portions of the subject of aerodynamics which should be included in the background of knowledge of the aeronautical engineer. Considerable emphasis has been placed on the fundamental principles of fluid mechanics. Methods of performance estimation and analysis have been treated in some detail, and two working charts are included. The material is presented in a form suitable for those whose knowledge of engineering or physics includes only a familiarity with the elements of mechanics, and whose mathematical experience extends only to the simplest fundamentals of differentiation and integration.

PARKINSON, LESLIE RENDALL

Aerodynamics. New York: The Macmillan Company, 1944. 112 p. illus. 22 cm. \$2.25. 4386

Contents: Physical properties of the atmosphere. Effects of deflecting airstreams. Reynolds number and the Bernoulli theorem. Lift and drag. Airfoils. Lift-increasing devices. Performance. Stability. Propellers. Wind tunnels.

Note: This is a brief description of the subject intended for persons concerned with the design of aircraft. It is assumed that the reader will have an elementary knowledge of algebra and trigonometry.

PAVIAN, HENRY CHRISTENSEN

Experimental aerodynamics. New York: Pitman Publishing Corporation, 1940. 168 p. illus. 23 cm. \$2.50. 4387

Contents: Review of elementary aerodynamic principles. Principles of the wind tunnel. The wind tunnel balance. Simple experiments in the wind tunnel. Visualization of air flow experiments. Experimentation in related fields. Experiments with fans, blowers, propellers, and windmills. Notes on model building. Auxiliary test equipment. Construction of small wind tunnels. Appendixes. Index.

Note: A textbook for engineering undergraduates which emphasizes the practical methods of experimental aerodynamics

technique. The book may be used in the average college where research apparatus is limited. The text shows how to make use of the materials and equipment at hand and how to construct satisfactory apparatus as cheaply as possible. A feature of the book is the numerous detailed mechanical drawings of recommended equipment which can be built by resourceful students and research workers with the cooperation of the laboratory instructor. Mathematical theory is developed for most of the experiments described.

REID, ELLIOTT GRAY

Applied wing theory. New York: McGraw-Hill Book Company, Inc., 1932. 231 p. illus. 24 cm. \$3.00. 4388

Contents: Fundamental theory. Kutta-Joukowski theorem of lift. Finite monoplane. Multiplanes. Miscellaneous applications of wing theory. Wing profile theory. Index.

Note: A brief presentation of the theory of aerodynamics fundamental to airplane design, intended for the student of aeronautical engineering and the airplane designer. Prandtl's paper *Applications of modern hydrodynamics to aeronautics*, Washington, D.C., 1921, U.S. National Advisory Committee for Aeronautics, Technical report 116, forms the basis of the work. However, the author has attempted to clarify and simplify what was obscured during the translation of the German text. A short bibliography is included.

TRUITT, ROBERT WESLEY

Intermediate aerodynamics. New York: Pitman Publishing Corporation, 1944. 227 p. illus. 23 cm. \$3.75. 4389

Contents: Preface. Aeronautical symbols. Introduction. The airfoil. Induced drag. Airfoil selection. Parasite drag. Control surfaces. Stability. Load factors. Propellers. Slots and flaps. Performance. Appendix: Aeronautical nomenclature. Index.

Note: Both theory and descriptive material are included in this textbook for students who have a serious engineering interest in the subject. A knowledge of mathematics is essential.

WOOD, KARL DAWSON

Technical aerodynamics. New York: McGraw-Hill Book Company, Inc., 1935. 330 p. illus. 23 cm. \$3.50. 4390

Contents: Properties of air. Airfoil characteristics. Parasite drag. Engine-propeller characteristics. Airplane performance. Performance estimation. Longitudinal stability. Lateral and directional stability. Special flight problems. Model testing and flight testing. Hull and float characteristics. Appendix: Units and conversion factors. Density and viscosity of liquids. Properties of air. Airfoil characteristics. Parasite-drag data. Engine and airplane data. Stability and control data, including M.A.C. calculations. Flight-test and hull data.

Note: A text on aerodynamics of the airplane planned to enable the reader to make performance, stability, and design calculations on airplanes. Presents the basic principles of airplane flight, surveys technical data on airplane performance and stability, and gives examples illustrating the use of such data.

Aircraft Construction

AERO PUBLISHERS, INC., EDITORS

Aircraft template development, compiled and edited by Aero Publishers, Inc., and associated aeronautical staff. First edition revised. Los Angeles, Calif.: Aero Publishers, 1942. 312 p. illus. 23 cm. \$4.00. 4391

Contents: Templates and their uses. Aircraft factory nomenclature and relative subjects. Mathematics for the template maker. Elementary drafting. Engineering drafting. Principles of mathematical development. Tools and equipment used by the template maker. Typical aircraft parts and their flat pattern developments. Photographic reproduction of templates. Trade ethics and safety precautions. Tables and charts. Glossary.

Note: An introduction to the fundamental principles of aircraft template manufacture. Written for both the student and the active worker, its purpose is to provide material for class-

room instruction which can be used in conjunction with technical shop experience. There are numerous blueprints of typical aircraft parts, together with related problems and exercises. An appendix includes a glossary, decimal and metric equivalents, drill sizes, and a table of trigonometric functions.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS

Aircraft plywood bibliography. New York: The American Society of Mechanical Engineers, 1944. 73 p. 28 cm. Paper, \$1.00. 4391a

Contents: Books. Historical development. Manufacture of aircraft veneer. Manufacture of aircraft plywood—sources and availability. General properties and strength of wood. Strength properties, test data and structural analysis. Other characteristics of plywood. Special molding and other fabrication processes. Adhesives and gluing. Specification of plywood. Selection and inspection of plywood. Plastics. High density plywood. Design of plywood parts for aircraft. Airplane construction and assembly in relation to plywood. Finishing. Cost data. Patents.

Note: An annotated bibliography of approximately 300 references arranged alphabetically by author under each of the seventeen headings listed above. The same article appears under more than one of these headings in many cases. Sources are mainly American journals and technical bulletins, although there are a few British and European references included. A list of American patents from 1914 to 1942 is also given, with brief remarks on their general nature.

ANDERSON, NEWTON H.

Aircraft layout and detail design. With a foreword by C. T. Reid. New York: McGraw-Hill Book Company, Inc., 1941. 306 p. illus. 23 cm. \$3.00. 4392

Contents: Requirements for a good layout. Descriptive geometry for aircraft layout. Airfoils. General design considerations. Connections. Fabrication methods. Fundamental principles of fitting analysis. Strength calculations for riveted and bolted joints. Bending and torsional stresses. Strength of struts and columns. Design of thin web beams.

Note: This practical manual for aircraft detail draftsmen and others covers the necessary descriptive geometry and shows how to design aircraft parts and fittings and make strength calculations.

APALATEGUI, J. J., AND L. J. ADAMS

Aircraft analytic geometry applied to engineering, lofting, and tooling. New York: McGraw-Hill Book Company, Inc., 1944. 285 p. illus. 21 cm. \$3.00. 4393

Contents: Trigonometry. Plane analytic geometry. Cartesian coordinates. True lengths and true angles. Equations of planes. Equations of lines. Translation and rotation of axes. Applications. Conic sections. Graphical treatment. Conics. Analytical theory.

Note: Deals with the application of the methods of plane and solid analytic geometry to the solution of a certain class of problems that arise in the design, lofting, tooling, and engineering of airplanes. There is also a treatment of conic sections as used in design and lofting.

ARNHYM, ALBERT A.

Comfortization of aircraft. New York: Pitman Publishing Corporation, 1944. 347 p. illus. 23 cm. \$7.50. 4394

Contents: Preface. Introduction. The comfort accessory group. Selection of comfort features. Planning of comfortization. Comfortization standards. The comfortization engineer. Requirements of air supply. Methods of air supply. Methods of air distribution. Calculation of ventilating systems. Selection of air supply. Requirements of heat supply. Calculation of heat requirements. Methods of heat supply. Internal-combustion heaters. Theory of exhaust-gas heat exchanger. Selection of heat supply. Fundamentals of soundproofing. Soundproofing of aircraft. Seating and resting. Lighting. Fighting comfort. Compartment comfort. Index.

Note: A discussion of the features that provide passenger comfort on civil and military airplanes. Intended for the designer, manufacturer, and engineer, it supplies technical data and calculations on heating and ventilating systems, lighting, soundproofing, seating and berthing, lavatory facilities, and galleys for the preparation and serving of full-course meals.

COLER, MYRON ABRAHAM

Aircraft engine & metal finishes. New York, Chicago: Pitman Publishing Corporation, 1942. 128 p. illus. 21 cm. \$1.50. 4395

Contents: Purposes of engine finishing. Nature of organic finishes. Preparation of the metal. Preparing organic finishes for immediate use. Application work. Finishing systems for engines. References. Index.

Note: This book discusses current American practices used in finishing exterior surfaces of aircraft engines and similar parts, with particular attention to organic finishes. It is intended for persons beginning a study of the subject.

COXEN, HARRY HERSHEY, AND OTHERS

Aircraft sheet metal blueprint reading, by Harry H. Coxen, Gerald E. Jackson, and Gilbert D. Masters. Chicago: American Technical Society, 1944. 132 p. illus. 27 cm. \$2.50. 4395a

Contents (abridged): Abbreviations used on aircraft sheet metal blueprints. How a drawing describes an object. Scale and size of drawings. Reading a simple three-view drawing. Kinds of drawings, and what they represent. Dimensions, what they indicate, and where they are found on drawings. Sectional drawings. Practical questions based on typical sheet metal drawings. Blueprints: Channel section. Bracket side. Frame angle. Seat bracket. Rudder nose section. Flare bracket. Frame, fuselage.

Note: A practical text for use in training classes for aircraft workers. The authors have designed the book for students who have not had training in mechanical drawing and who do not intend to acquire such training before entering the industry.

DEYARMOND, ALBERT, AND ALBERT ARSLAN

Fundamentals of stress analysis. Prepared and edited by Associated Aeronautical Staff of Aero Publishers. Volume I. Los Angeles, Calif.: Aero Publishers, 1942. 256 p. illus. 23 cm. \$3.00. 4395b

Contents: Introduction. Types of structures. Stress and strain. Forces and couples. Laws of stress, reactions. Structures with axial loads in members. Beams. Torsion. Section properties. Allowable stresses.

Note: A practical introduction to the basic principles of stress analysis with particular reference to aircraft design. It is intended for students who have a background of trigonometry and calculus and some knowledge of elementary drafting and blueprint reading. There are detailed discussions and design applications of axial loads in members, especially those dealing with space problems, such as are encountered in the fuselage, landing gear or in wing trusses; calculation of engine mounts; theory of beams; and allowable stresses in columns and flat plates. Practical problems relating to aircraft design are given at the end of each chapter. An appendix provides a variety of pertinent information such as structure symbols, properties of typical cross sections, mechanical properties of materials, allowable stresses, and a glossary.

DICKINSON, THOMAS A.

Aircraft construction handbook. New York: Thomas Y. Crowell Company, 1943. 237 p. illus. 19 cm. \$2.00. 4396

Contents: How an airplane factory operates. Aerodynamics. Aircraft types and nomenclature. Aircraft design principles. Materials and processes. Shop practice. Assembly. Inspection. Appendix. Glossary. Bibliography. Index.

Note: A text and reference book for beginning students and workers in the aircraft industry. Wherever possible, simplified explanations of technical terms have been made in the text and an extensive glossary of technical words and phrases is included. The appendix contains much useful reference data for all branches of the industry.

DOANE, FOSTER BAIRD, AND W. E. THOMAS

Magnaflux aircraft inspection manual. Chicago: Photopress, Inc., 1941. 193 p. illus. 23 cm. \$1.75. 4396a

Contents: Introduction. Magnetism and the Magnaflux method. Magnaflux aircraft inspection units. Demagnetization and demagnetizers. Inspection benches, tanks and accessories. Maintenance of units. Make-up and use of paste suspensions. Use of dry powders. Operating technique. Inspection methods. General notes on production problems. Interpretation of indications. Photographs of typical defects and Magnaflux indications. Subject index.

Note: This manual was written by two Magnaflux Corporation officials and is copyright by Magnaflux Corporation, Chicago. It was prepared in response to the demand by aircraft manufacturers and others using the Magnaflux magnetic inspection method for a handbook that would give detailed directions to answer such problems as at what points current should be applied, what current density should be used, whether to use the wet or dry method, whether to rely upon continuous or residual magnetization, and what interpretations to place on patterns produced. The theory of Magnaflux inspection is covered in F. B. Doane's *Principles of Magnaflux inspection* (see Index).

ELZEA, LAUREL S.

Aircraft welding. New York: McGraw-Hill Book Company, Inc., 1942. 121 p. illus. 28 cm. \$2.00. 4397

Contents: Equipment. Tools. Materials. Welds—characteristics and types. Stress. Expansion and contraction. Cracks. Jigs. Methods of construction. Aluminum and stainless steel welding. Aluminum welding. Stainless steel welding. Problems (exercises) in aircraft welding. Steel. Aluminum. Stainless steel. Drawings and prints. Drawings. Classes of prints. Meaning of lines and symbols. Tables. Air Corps specification.

Note: A practical introductory text which aims to give the student a basic knowledge of the specialized trade of welding as it is practiced in modern aircraft factories. In easy steps the author describes the materials used, the preliminary work needed to prepare pieces for welding, and details of the welding process. The text explains clearly and concretely the difficulties and problems likely to be encountered and shows how to solve them.

FAULCONER, THOMAS P.

Introduction to aircraft design. New York: McGraw-Hill Book Company, Inc., 1942. 273 p. illus. 23 cm. \$2.75. 4398

Contents: Aerodynamics and preliminary design. Power-plant installation. Control-surface design. Wing structure. Fixed equipment. Hull design. Beaching- and landing-gear design. Electrical equipment. Aircraft hydraulics. Structural design. Modern aircraft materials. Weight engineering. Engineering contract administration. Testing and research. Bibliography. Appendix. Index.

Note: This book provides a bridge to aeronautical engineering and airplane design from other fields of engineering, architecture, and general design—giving the additional information required for the specialized job of aircraft drafting and engineering. Performance, power plants, control surfaces, fixed equipment, electrical equipment, and hydraulics are discussed with a view to their design and application in aircraft. Basic airplane structural design is covered in chapters on wing structure, fuselage and hull, landing gear, stress analysis, materials, and weight analysis.

GREENWOOD, ERNEST JOSEPH ADOLPH, AND JOSEPH R. SILVERMAN

Stress analysis for airplane draftsmen. New York: McGraw-Hill Book Company, Inc., 1943. 291 p. illus. 21 cm. \$3.00. 4399

Contents: Design loads on airplanes. Statics. Properties of materials used in airplane design. Simple tension, compression, and shear. Proportioning of connections. Centers of gravity and moments of inertia. Beam theory. Design of members under tension and compression. Round tubes in torsion. Spring theory. Hoop tension. Fatigue, stress concentrations, and combined stresses. Appendix: Design data sheets.

Note: Reviews the principles of applied mechanics and shows how these principles may be used to solve many of the elementary structural problems that arise in the designing of an airplane. A feature of the text is the large number of illustrations, taken, wherever possible, from existing airplane design. The book assumes a knowledge of applied mechanics and then takes up advanced structural theory and its application to airplane design.

LEAR, EARL BEAN, AND JAMES E. DILLON

Aircraft riveting; a guide for the student. New York: Pitman Publishing Corporation, 1942. 118 p. illus. 21 cm. \$1.25. 4400

Contents: Introduction to aircraft riveting. Types of rivets. Rivet materials. The strength of riveted joints. Tools preparatory to riveting. Riveting methods. Description of pneumatic hammers and squeezers. Don'ts for riveters. Shop terms related to riveting. Personal tool requirements. Index.

Note: A brief outline of the subject for beginners and for use in courses where speedy instruction is essential. The practical aspects of the most important functions of riveting are explained so that the new worker may learn the elements in the shortest practicable time. Aircraft riveting is emphasized.

LE MASTER, CLARENCE ALLEN

Aircraft sheet metal work; how to do blueprint reading, template layout, patterns for bends, riveting, soldering, brazing, welding, drop hammer work. Chicago: American Technical Society, 1944. 387 p. illus. 24 cm. \$3.75. 4401

Contents: Hints for safety and production. Tools. Files and their uses. Blueprint reading. Measuring and measuring tools. Template layout and bench work. Pattern development for bends. Rivets and riveting. Skin fitting. General fabrication. Soldering, brazing, and welding. Use of drop hammer. Assembly, repairs, techniques, projects. Aluminum and related metals. Steel in aircraft construction. Index. Decimal equivalent table.

Note: A beginning textbook aimed at the training of aircraft sheet metal workers. The first chapter deals with safety rules, and other preliminary chapters deal with the accumulation of a kit of tools, blueprint reading, and measuring. The various operations in metal work are then treated step by step. The treatment throughout is on a practical basis.

LIMING, ROY A.

Practical analytic geometry with applications to aircraft. New York: The Macmillan Company, 1944. 277 p. illus. (part col.) 22 cm. \$4.50. 4402

Contents: Introduction: Analytic geometry applied to certain engineering, lofting, and tooling problems. Applied plane analytic geometry. Cartesian coordinates in one plane. Analytic equations of a line. Applied solid analytic geometry. Cartesian coordinates in space. Typical coordinate axis conventions. Analytic analysis of basic lines. Analytic equations of a plane. Analytic analysis of basic line-plane relationships. Special analytic applications. Analytic analysis of curves used in lofting. Conic lofting. Special conic techniques. Appendixes. Basic formulas from algebra and trigonometry. Answers to problems. Bibliography. Tables of rational trigonometric functions (by permission of the Monroe Calculating Machine, Inc.). Index.

Note: Part I analyzes the applications of analytic geometry to two-dimensional space; part II develops the application of rectangular coordinates to three-dimensional space; part III develops and applies a system of analytic analysis to curves commonly required in the lofting of streamline bodies.

MACKINNON, HECTOR DONALD

Aircraft production; planning & control. New York, Chicago: Pitman Publishing Corporation, 1943. 253 p. illus. 23 cm. \$3.75. 4403

Contents: Part I, Introduction to the production department and its allied departments: Production and the work order system. Production manager. Scheduling department. Material control department. Engineering department. Tool design department. Production planning department. Production control department. Traffic department. Shop departments. Outside production department. Part II, Production department: Scheduling department. Material control department. Production planning department. Production control department. Traffic department. Outside production department. Index.

Note: An introduction to the functions of the production department in aircraft factories, as written by the production manager of Beech Aircraft Corporation. Since the author is concerned essentially with closer cooperation between shop and

production department, he deals briefly with the duties and organization of the other departments in the factory. However, the greater part of the volume is devoted to a description of the procedures and duties of the production department. It is intended for both the person actually employed in the non-productive departments and the layman planning to enter the aircraft industry.

MEADOWCROFT, NORMAN

Aircraft detail drafting. New York: McGraw-Hill Book Company, Inc., 1942. 211 p. illus. 23 cm. \$2.25. 4404

Contents: Drawing sizes, type, and conventions. American national form screw threads. Tolerances, limits, and fits. Acme form of screw thread. Standard abbreviations to be used on drawings. Aluminum alloys. Definitions of terms used on detail drawings. Die casting. Forgings. Aircraft steels. Sand castings. Showing of sectional views. Dash numbers, assemblies, and installations. Extrusions. Rivets, bolts, pins. Army and Navy standard parts. Sheet-metal fabrication. Mechanical assemblies. Welded assemblies. Lofting and lines. Appendix.

Note: A home-study course in aircraft drafting that explains, in simple progressive lessons, every detail of accepted aircraft drafting practice. Designed for the student who already knows mechanical drawing, it stresses materials and shop processes in aircraft construction, rather than the mere technique of drawing lines. The book represents typical preparation in aircraft drafting as it is required by modern aircraft manufacturers.

MICHELON, LENO C.

Composite aircraft manufacture and inspection. Certain chapters written with the collaboration of Raymond J. Devereaux. New York: Harper & Brothers, 1944. 547 p. illus. 28 cm. \$6.00. 4405

Contents: Aluminum and its alloys. Magnesium in aircraft. Aircraft steel. Characteristics of aircraft woods. The effect of moisture content and specific gravity on the strength properties of wood. Kiln drying and air seasoning of aircraft lumber. Wood inspection methods. Aircraft plywood. The manufacture and inspection of high-density plywood. Radio frequency and compressed wood. Plastics. Fabrics and doping processes. Heat treatment of aluminum and steel. Plating and finishes. Aircraft production processes. Dimensional control. Non-precision measurement. Precision measurement. Plug, ring, and snap gages. Screw threads and thread gages. Dial indicators and comparators. Magnaflux and X-ray examination. Hardness testing and destructive inspection. Aircraft inspection procedures. Appendixes. Index.

Note: This is virtually an encyclopedia of aircraft manufacture and inspection, designed as a handbook and reference manual for those in the industry and for the training of inspectors. It covers all of the basic materials used in aircraft manufacturing today: metals, woods, plastics, fabrics, and gives Army and Navy aeronautical specifications for each. It discusses at length the processes by which each material is fabricated into finished aircraft structures, and presents the inspection instruments and methods used to insure adequate performance and maximum safety. More than 100 tables of data are included, and there are 478 illustrations, mostly photographs, as well as many charts and diagrams. Many experts in aircraft manufacture assisted in the preparation of the volume.

NELSON, WILLIAM

Airplane lofting. New York: McGraw-Hill Book Company, Inc., 1941. 147 p. illus. 23 cm. \$1.80. 4406

Contents: Outline of airplane construction. Geometry. Lines and fairing of lines. Models and shell expansion. Templets, jigs, fixtures, and forms. Special methods and photographic reproduction.

Note: This text on the lay-off of airplanes in the mold loft is designed especially for students entering either loft or sheet metal working fields of airplane construction. Appropriate brief descriptions of the design and construction of airplanes are given. Model making, plating development, templet making, and photographic reproduction are discussed.

NIKOLSKY, ALEXANDER A.

Notes on helicopter design theory; a series of

lectures delivered March-April 1944 at Princeton University. Princeton: Princeton University Press, 1944. 228 p. illus. 23 cm. \$3.00. 4407

Contents: Review of airscrew theory. The helicopter in vertical flight. Introduction to flapping and feathering. Forward motion. Performance calculations. Applied loads on the blades. Static stability.

Note: A pioneering attempt at coordinating and evaluating existing analyses of helicopter design problems. These notes for aeronautical engineers are largely mathematical in nature, and the author does not claim them to be definitive.

NILES, ALFRED SALEM, AND JOSEPH S. NEWELL

Airplane structures. Third edition. New York: John Wiley & Sons, Inc., 1943. 2 v. illus. 23 cm. \$4.50 each volume. 4408

Contents: Volume I, General design procedure. The critical loading conditions. Reactions, shears, moments, and influence lines. Beam deflections. Continuous and restrained beams. Design of simple beams. Torsion. Truss analysis. Graphical methods. Design of simple ties and columns. Connections. Deflections. Index. Volume II, Statically indeterminate structures. Beam-columns. Incomplete tension fields. Shell analysis. Curved beams and rings. Critical loads. Torsional column failure. Allowable stress data. Bibliography. Index.

Note: These two volumes together provide an analysis of welded-tube structures, wooden beams and members, and all-metal or stressed-skin structures. They combine an exposition of basic structural theory with practical design information sufficient to solve the more common problems of the aeronautical structural engineer. Their purpose is to bridge the gap between classical strength of materials and practical airplane design. The first volume constitutes a treatment of the less advanced phases of the subject. In this edition the changes are not radical because of the restrictions imposed by the war. However, certain of the articles were rewritten in order to clarify them; other articles were rewritten to make them consistent with new material in Volume II. The concept of shear flow is introduced, and an outline is given of a more convenient method of computing the effective geometrical properties of a thin-walled cylinder. In Volume II, six new chapters were added, covering advanced problems on metal and plywood construction. The authors have emphasized sound methods of direct practical value in the solution of design problems.

NISITA, ALBERT H.

Aircraft riveting. New York: McGraw-Hill Book Company, Inc., 1942. 250 p. illus. 28 cm. \$2.50. 4409

Contents: Rivet identification. Identification of equipment. Safety precautions. Drilling rivet holes. Preparation of material. Upset head standards. Testing and checking. Removing rivets. Bucking bars. Care of riveting equipment. Upsetting solid rivets. Reverse bucking. Upsetting tubular rivets. Flush riveting. Special riveting procedures. Automatic and multiple setting machines. Riveting terminology and miscellaneous tables.

Note: A thorough treatment of riveting techniques and skills for the aircraft factory supervisor, mechanic, and the student. Contains a wide range of related technical information.

NORCROSS, CARL

Aircraft blueprints and how to read them. New York: McGraw-Hill Book Company, Inc., 1942. 102 p. illus. 28 cm. \$1.75. 4410

Contents: Preface. Blueprints and their importance. Sizes, lines, and three-view drawings. Title blocks. Numbering systems. Symbols, abbreviations, and terminology. Dimensioning. Standard parts. Detail drawings. Assembly drawings. Installation drawings. Appendix: Nomenclature. Decimal equivalents. Drill sizes. Symbols for electrical installation, Boeing.

Note: Written to fill the need for a short, intensive course in blueprint reading for the aircraft construction and the aircraft maintenance mechanic. It includes a wide selection of blueprints, among them prints from eight of the largest United States aircraft plants. The wide representation is of special value in interpreting assembly and installation drawings, in which symbols differ between one factory and another. Army-Navy standard parts, including standards for rivets, nuts, bolts, screws, and other small parts, are clearly described.

NORCROSS, CARL AND JAMES D. QUINN

How to do aircraft sheetmetal work. New York: McGraw-Hill Book Company, Inc., 1942. 285 p. illus. 23 cm. \$2.20. 4411

Contents: Simple blueprint reading. Shop mathematics. Working properties and standards of aircraft materials. How to measure. Templates. Aircraft sheetmetal layout. How to cut sheet. Files and how to use them. Forming, stamping, and hydraulic presses. Drilling and how to do it. How to rivet. Jig assembly in modern aircraft factories. Skin fitting. Spot welding. Shop projects.

Note: A concise, practical course, telling how to lay out work and cut, form, and join sheet metal parts used in airplane manufacture and repair. Step-by-step methods are plainly described and illustrated, necessary fundamentals such as blueprint reading and shop mathematics are included, review questions and practice projects are given.

NYE, WILLIS L.

Practical aeronautical engineering. San Francisco, Calif.: Aviation Press, 1938. 193 p. illus. 28 cm. (The cadet series publication) Paper, \$4.00; cloth, \$5.00. 4411a

Contents: Foreword. Aircraft design procedure. Airfoil criteria. Aerodynamic factors in aircraft design. Parasitic resistance data. Stability. Controls and control surfaces. Propellers. Aircraft engines and installation problems. Landing gears. Simple performance calculations. High performance aircraft. The economics of aircraft structure. Weight control. Appendix. Index.

Note: This publication is intended to serve as an intermediate text for the student engineer actively interested in modern airplane construction. The author has striven for simplified form without sacrificing detail. The volume, reproduced from typewritten copy, contains 67 formulae, 145 tables, and 164 drawings and diagrams.

PETERSON, ROSS A., AND RAYMOND E. ERICKSON

Basic aircraft construction; plain facts for plane builders. New York: Prentice-Hall, Inc., 1943. 204 p. illus. 19 cm. \$2.50. 4412

Contents: The airplane and its components. Present methods of aircraft production. The aircraft blueprint. Tools, jigs and fixtures. Material used in aircraft production. The machine shop. Sheet metal preparation and fabrication. Riveting. Appendix. Index.

Note: This small volume describes, for beginning workers, the processes and skills required by the various operations in building an airplane. The appendix includes a glossary of common aircraft terms.

ROBSON, ALEX M.

Airplane metal work. New York: D. Van Nostrand Company, Inc., 1940. 5 v. illus. 24 cm. Vol. I, \$1.15; Vols. II-V, \$1.25 each. 4413

Contents: Volume I, Airplane blueprint reading. Volume II, Airplane sheet metal shop practice. Volume III, Airplane sheet metal pattern development and template making. Volume IV, Airplane pneumatic riveting. Volume V, Airplane sheet metal repair.

Note: This group of books is used in beginning courses in high schools and vocational schools, and in special courses to train men quickly for positions in airplane factories and repair stations. An important feature of the series is the close correlation of the blueprints, instructions, and questions on each job, which are usually arranged on facing pages to facilitate quick study.

ROTH, MARVIN G.

Manual of aircraft riveting; a practical handbook dealing with methods used in aircraft construction and repairs. New York: McGraw-Hill Book Company, Inc., 1943. 96 p. illus. 19 cm. \$1.25. 4414

Contents: Introduction. Types of rivets. Length and type of rivet. Riveted joints. Corrosion and heat-treatment of rivets. Types of riveting. Flush riveting. Blind riveting. Removal of rivets. Installation of Dzus springs. Drill grinding. Shop hints on riveting.

Note: A practical, pocket-size handbook of aviation riveting, dealing with modern tools, devices, and methods used in aircraft construction and repairs. The book gives helpful information about many of the problems that face the trainee or mechanic learner in repairing military aircraft.

SECHLER, ERNEST EDWIN, AND LOUIS G. DUNN

Airplane structural analysis and design. New York: John Wiley & Sons, Inc., 1942. 412 p. illus. 23 cm. (Galcit aeronautical series) \$4.00. 4415

Contents: Part I, Preliminary considerations in design: The airplane layout. Applied and design data. Part II, Methods of structural analysis: Stress-strain relationships for stable structures. Truss and frame analysis. The problem of instability. The ultimate strength of stiffened flat sheet. Plates under normal pressure. The analysis of cylindrical structures. Part III, Applied stress analysis: Wings and control surfaces. Fuselage analysis, engine mounts, landing gears, and fittings. Index.

Note: For the engineer who is already familiar with applied mechanics and simple stress analysis. The book presents most of the available design criteria—and supports these criteria with experimental evidence where possible. The best of current design data is included—even controversial material which the authors present as a challenge to engineers to continue research to fill the present gaps in knowledge of the subject. The book is divided into three parts, each part giving the data necessary to solve the three main problems of the designer: expected loads and how to distribute them, design methods for structural components subjected to any given combination of loads, and methods of analysis of various structural types, showing advantages and disadvantages of each method. The book does not avoid the use of mathematics although the mathematical treatment is relatively simple throughout.

SVENSEN, CARL LARS

A manual of aircraft drafting. New York: D. Van Nostrand Company, Inc., 1941. 272 p. illus. 25 cm. \$2.75. 4416

Contents: Aeronautical engineering. Drafting equipment. Basic geometrical drafting. Standard lettering. Multiple view drawing. Sketching. Auxiliary views. Sectional views. Aircraft drafting practice. Aircraft fastenings. Dimensioning. Aircraft details. Sheet metal parts. Aircraft drawings. Aircraft engines. Graphic charts. Data and reference material.

Note: This textbook for colleges and high schools covers the principles of drafting and the details of their execution, and then applies them to specific problems and designs of the aircraft industry. The student requires no previous knowledge of drafting to use this book. Many problems illustrate and teach the various methods of drafting and types of construction.

TEICHMANN, FREDERICK KURT

Airplane design manual. Second edition. New York: Pitman Publishing Corporation, 1942. 440 p. illus. 23 cm. \$4.50. 4417

Contents: Procedure in design. Types of airplanes. Preliminary weight estimate. The three-view. The balance diagram. The pilot's cockpit. Instruments. The passenger cabin. Heating and ventilating. Soundproofing. The power plant. Design of the wing. The landing gear. Tail surfaces. Operating control systems. The fuselage. Longitudinal stability. Preliminary performance calculations. Appendix. Bibliography. Index.

Note: A textbook for students of aeronautical design, as well as for airplane draftsmen and aerodynamics engineers. A knowledge of elementary aerodynamics is assumed. Methods and forms for preliminary weight estimating, estimation of wing area, location of center of gravity, design of instrument board, controls, landing gear, sleeping accommodations, and other design features are presented in detail. The emphasis is largely on the practical applications of design theory, but there is an adequate treatment of fundamental mathematical formulas and calculations. A large number of mechanical drawings of airplane parts and accessories are given in the appendix, together with useful data tables.

THARRATT, GEORGE

Aircraft production illustration. New York: McGraw-Hill Book Company, Inc., 1944. 201 p. illus. 28 cm. \$3.50. 4418

Contents: Preface. Acknowledgments. Introduction to perspective. Basic principles of perspective drawing. Freehand drawing. Drawing in perspective. Angular perspective. Inclined planes. Shades and shadows. Technical sketching. The layout of a complete airplane in perspective. Introduction to production illustration. Preliminary-design illustrations. Position breakdown illustrations. Subassembly production illustration. Handbook and sequence illustrations. Rendering for catalogues and handbooks. The fifth phase of production illustration. Teaching production illustration. Appendix: Short cuts and alternate methods. Stations-identification charts. Loft breakdown. Every minute counts. Index of production illustration schools and instructors. Index of users of production illustration in the United States and Canada. Index.

Note: This book presents data on the organization, development, presentation, and installation of production illustrations, which portray manufacturing details by means of cut-away or three-dimensional drawings so that each factory workman may have a clear picture of the part or assembly upon which he is to work. It gives an analysis of the scope and potentialities of production illustration, together with a description of existing methods plus a course in perspective layout and technical sketching for the student.

TITTERTON, GEORGE F.

Aircraft materials and processes. Revised edition. New York: Pitman Publishing Corporation, 1941. 356 p. illus. 23 cm. \$3.50. 4419

Contents: Definitions. Testing aircraft materials. Steel and its alloys. Aircraft steels—properties and uses. Heat treatment of steel. Surface hardening. Shaping of steel. Corrosion-resisting steels. Nickel alloys. Copper and its alloys. Wrought aluminum alloys. Aluminum alloy castings. Magnesium alloys. Welding—brazing—soldering. Corrosion and its prevention. Wood and glue. Fabrics and dope. Plastics. Transparent materials. Selection of materials. Appendices. Index.

Note: Specifications and handling of the many materials used in aircraft construction are given in this book in a form useful to the designer, constructor, shop man, purchasing agent, and student. Much of the information has been gathered from United States government specifications, and from data supplied by manufacturers and technical societies.

UNITED STATES. FOREST PRODUCTS LABORATORY

Manual for the inspection of aircraft wood and glue for the United States Navy. Prepared by Forest Products Laboratory, Forest Service, Department of Agriculture, Navy Department, Bureau of Aeronautics. Second edition. Washington, D.C.: Government Printing Office, 1941. 167 p. illus. 23 cm. Paper, \$1.00. 4419a

Contents: The structure and characteristic defects of wood. The strength of wood. Seasoning of lumber. Steaming and bending of wood. Gluing of wood. Common stains and decays. The identification of wood. Strength values of various woods and plywoods.

Note: This publication is a completely revised edition of a work originally issued in 1928. It is a digest of information concerning aircraft woods and glues obtained through cooperative investigation projects of the Department of Agriculture, War Department, and Navy Department, carried on at the Forest Products Laboratory, Madison, Wisconsin. Its use in the naval service is in connection with current specifications, by inspectors of naval aircraft and naval material, assembly and repair officers of operating and maintenance organizations, and for instruction purposes. The new edition contains extensive changes in the chapters on glue and common stains. All mention of animal glue has been omitted. Synthetic resin glues, now of first importance in aircraft work, are treated in detail. The names of trees have been revised to conform to the changes in the names of native species made by the Forest Service to conform to international standards.

UNITED STATES. WAR DEPARTMENT

Airplane structures. War Department Technical manual TM 1-410. Washington: United States Government Printing Office, 1943. 124 p. illus. 26 cm. Paper, \$0.30. 4420

Contents (abridged): Wing and fuselage assemblies. Cockpits and cabins. Flight control surfaces. Flight control mechanisms. Landing gear. Jacking and hoisting. Tires and tubes. Wheels. Brakes. Shielding and bonding. Loading and balance. Minor structural repairs.

Note: Supersedes TM 1-410, 29 October 1941. Numerous photographs, drawings, and diagrams and a simply written text give the reader an excellent picture of the component parts of the various types of planes. Excellent for nomenclature and terminology.

VAN WINKLE, PAUL, EDITOR

Aircraft mechanics handbook; a guide and reference for apprentices, students, repair mechanics, factory workers, and engineers; contains specifications on aircraft materials, technical data, and information on replacement and identification of parts and repair of aircraft structural surfaces and accessories. Based on latest Army-Navy and commercial specifications. Peoria, Ill.: Manual Arts Press, 1944. 388 p. illus. 19 cm. \$2.75. 4421

Contents: Aluminum and its alloys. Riveting. Bending data. AN parts. Special aircraft fasteners. Aircraft nomenclature. Simplified mathematics. Aircraft drafting terms and symbols. Aircraft welding. Basic metal work. Steels. Aircraft woodwork. Aircraft cable and splicing. Transparent plastics. Aircraft fabric work. Protective coatings for aircraft.

Note: A pocket-sized, sturdily bound compilation from authoritative sources, intended as a reference book for practical workers, including beginners. It consists mainly of useful tables and diagrams which have been carefully chosen. There is an index, and a detailed table of contents precedes each section.

VAUGHN, WALTER

Aircraft descriptive geometry applied to aircraft design, drafting and lofting by the direct method. Second edition. Glendale, Calif.: Aircraft Publishing Company, 1943. 200 p. illus. 23 cm. \$3.50, U.S.; \$3.75, other countries. 4422

Contents (abridged): Introduction. Nomenclature and abbreviations. Instruments and materials. Principal views. Auxiliary views. Oblique views. Straight lines. Planes. Single curved lines. Single curved surfaces. Double curved surfaces. Intersections. Test questions and practice problems. Index.

Note: A work which emphasizes graphic, rather than mathematical, methods for the solution of descriptive geometry problems as applied to the design of airplane structures. The method of approach used is the "direct method,"—in which each problem is visualized first before an attempt is made at solution. Designed to aid instructors, students, aircraft design engineers, layout draftsmen, lofting linesmen, and mechanics. This work was originally published in two volumes in 1941. The illustrations have been redrawn or revised and new illustrative material added in this edition.

WARNER, EDWARD PEARSON

Airplane design; performance. Second edition. New York: McGraw-Hill Book Company, Inc., 1936. 653 p. illus. 23 cm. \$6.00. 4423

Contents: Introduction and nomenclature. Some general principles. General considerations on airfoils. The qualities of an airfoil. Some applications of airfoil theory. Boundary layers and skin friction. Airfoil sections. Effect of plan form on airfoil performance. Airfoil combinations. Variable-lift airfoil arrangements. Effects of surface texture. Ground influence, and other miscellaneous airfoil phenomena. Parasite drag. Power-plant characteristics and performance. Propeller characteristics. Per-

formance curves and their construction. Interpreting the performance curves. Performance by formula and chart. Index.

Note: The first of two volumes comprising a revision and enlargement of the author's earlier book entitled *Airplane design, aerodynamics*, New York: McGraw-Hill, 1927. This volume, complete in itself, deals with performance alone and the basic aerodynamic laws, phenomena, and collected data which control performance. Stability and control are to be treated in the second volume. Emphasis is given to practical applications of aerodynamics in the design of airplanes, and a minimum of mathematics is utilized in the treatment. It is intended for aeronautical students and practicing engineers. There are numerous bibliographic footnotes.

WELLS, THEODORE ARTHUR

Wells' Manual of aircraft materials and manufacturing processes. New York: Harper & Brothers, 1942. 212 p. illus. 26 cm. \$3.50. 4424

Contents: Aluminum alloys. Magnesium alloys. Steel. Non-ferrous metals. Standard parts. Wood. Finishes, rubber and plastics. Welding. Heat treatment of metals. The cutting of metal. Forming operations. Machining operations. Riveting. Cleaning and corrosion proofing of metals. Machining of wood. Gluing. Index.

Note: A comprehensive manual of modern practice in aircraft construction, prepared by one of the leading aircraft manufacturers in the United States. Part I covers the characteristics, advantages, and disadvantages of all important materials used in the aircraft industry, and Part II is devoted to the important manufacturing processes. It is designed for engineers and other persons practically interested in airplane manufacture.

WISSMAN, ERNEST E.

Aircraft inspection. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1942. 268 p. illus. 23 cm. \$3.00. 4425

Contents (abridged): Inspection. Aircraft blueprints. Standards of workmanship on riveting, bolted assemblies, aircraft nuts and nutplates. Miscellaneous fasteners. Standards of workmanship, electrical system, radio system. Aluminum threaded parts. Aircraft tubing. Aircraft tooling. Standards of workmanship on metals. Inspection of assemblies, minor and major. Flight control systems. Fuel and oil systems. The hydraulic system. The heating and ventilating system. The de-icer system. The fire extinguisher system. The power plant. Installation of instruments. Installation of outer wings. Inspection of the Sperry aircraft gyropilot. Final inspection of fuselage furnishings: doors, hatches, enclosures; electrical installations. Preparation and inspection of engine before first run. Inspection of power plant after first engine run. Safety inspection for flight. Delivery inspection. Index.

Note: A text for use in training courses and a reference for practicing aircraft inspectors, covering all phases of aircraft inspection from blueprint to the delivery of the finished plane. The material is general in nature and does not attempt to specialize in any particular branch of inspection nor to discuss technical details of design and production. The work is fully illustrated and is useful to mechanics and other workers in the factory or in maintenance.

YEAKLEY, JAMES RALPH, AND HAROLD C. MARTIN

Aircraft tooling practices. New York: Pitman Publishing Corporation, 1944. 166 p. illus. 21 cm. \$2.00. 4425a

Contents: Tool design and the airplane. Formulating the tooling program. Tool planning and design. Lofting and tool design. Templates. Mock-up. Drop-hammers and their dies. Hydraulic press tooling. Brake and punch press dies. Forging dies and their use. Patterns, castings, and the foundry. Machine shop tooling. Small jigs and fixtures. Assembly jigs. Tooling and plastics. Design of parts and tooling. Safety and care of tooling. Additional tooling operations and considerations. Index.

Note: A practical text and study guide setting forth the fundamental principles of tooling as evolved in the aircraft industry, intended for experienced workers as well as for the newcomers in the industry. The material is written from the viewpoint of the practical operator rather than the engineer or designer. Review questions appear at the end of each chapter.

YOUNGER, JOHN ELLIOTT

Mechanics of aircraft structures. Second edition. New York: McGraw-Hill Book Company, Inc., 1942. 396 p. illus. 23 cm. \$4.00. 4426

Contents: Preface. Design requirements. Materials of fabrication. Summary of basic stress formulas. Structures, past, present, future. Properties of structural sections. Fundamentals of structural sections. Fundamentals of structural analyses. Beams, columns, and beam columns. Continuous beams and continuous beam columns. Analysis of torsion members. Elementary principles of design of sheet-metal construction. Design of flat reinforced plate structures. Design of curved reinforced plate structures. Design of thin-walled columns and stringers. Torsional rigidity of wing box beams. Introduction to cantilever-wing analysis. Design of thin-sheet wing webs. Introduction to shear lag. Problems in fuselage design. Pressure-cabin structural design. Wing flutter and other structural vibrations. Riveting in aircraft construction. Index.

Note: Formerly published under the title *Structural design of metal airplanes* (New York, 1935), this book is a college text in the mechanics of the structure of all-metal airplanes. The subject of design is only lightly touched upon, the emphasis being upon structural analysis and the mechanical properties of wing sections, beams, columns, and other elements of airplane structure. A knowledge of elementary mechanics and of integral calculus is assumed. There are numerous bibliographical references throughout the text. The revisions consist of new material covering airplane structures since 1935, including some of the progress in construction occasioned by the war.

Aircraft Engines

BRIMM, DANIEL JOHNSON, AND H. EDWARD BOGGESS

Aircraft engine maintenance. New York: Pitman Publishing Corporation, 1939. 470 p. illus. 23 cm. \$2.50. 4427

Contents: Preface. Introduction. Preliminary considerations. Principles and types. Construction and detail. Tools, equipment and methods. Servicing and operating. Carburetors and induction systems. Fuel systems. Lubrication. Elementary electricity. Ignition. Starters and generators. Instruments. Propellers. Periodic check. Power plant installation. Top overhaul. Trouble shooting. Fuels and oils. Tables. Engine specifications. Index.

Note: The fundamentals of engine construction, operation, and maintenance presented for beginners. In addition, reference material has been included which is of value to the expert engine mechanic.

CHATFIELD, CHARLES HUGH, AND OTHERS

The airplane and its engine, by C. H. Chatfield, C. Fayette Taylor, and Shatswell Ober. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1940. 414 p. illus. 21 cm. \$3.00. 4428

Contents: The essential parts of the airplane. The wing. Airfoil modifications and arrangements. Parasite drag. Stability and control. The airplane engine, general principles. The airplane engine, operating characteristics. The airplane engine, types and details of construction. The propeller. The complete power plant. Airplane performance. Airplane maneuver. The airplane structure. The seaplane and the amphibian. Military airplanes. Aircraft instruments and accessories. Bibliography. Index.

Note: Intended primarily for the reader who desires a sound knowledge of the basic principles of the airplane and its power plant. No material is introduced which requires more than an elementary knowledge of physics or mathematics for its understanding. The discussion of the fundamental principles, construction, and capabilities of the airplane and its engine are presented in simple form and adequately illustrated.

FRAAS, ARTHUR P.

Aircraft power plants. New York: McGraw-Hill Book Company, Inc., 1943. 472 p. illus. 23 cm. \$4.00. 4429

Contents: Part I, Engine operation: History and development of aircraft engines. Current engines and their construction. Basic operating principles and definition. Combustion. Supercharging. Performance. Carburetion. Ignition. Cooling. Vibration. Fuels and lubricants. Lubrication, oil flow and scavenging. Aircraft-engine overhaul and part durability. Laboratory testing. Part II, Engine installation: General installation considerations. Engine mounts. Cowling of air-cooled engines. Liquid-collant systems. Induction systems. Exhaust systems. Fuel systems. Oil systems. Accessories and special equipment. Installation testing. Part III, Propellers: Propeller theory and performance. Propeller construction and installation. Appendixes: Tables and curve sheets for installation design and testing. Laboratory instructions.

Note: A book for engineers rather than mechanics. It gives a background of information and theory useful in the design, testing, and operation of aircraft engines, accessory systems and propellers.

HYLANDER, CLARENCE JOHN

Flying power. Illustrations by the author. New York: The Macmillan Company, 1943. 164 p. illus. 21 cm. \$2.00. 4429a

Contents: Introduction. The airplane and its power plant. Variety in aircraft engine design. Warplanes and their engines. The principles of an internal combustion engine. The parts of an aircraft engine. How fuel gets to the induction system. How the induction system prepares the fuel for combustion. How the fuel is ignited. How the engine is lubricated. Aircraft propellers. Engine instruments.

Note: A self-study guide for the student pilot and airplane mechanic expressing in simple terms the essential facts about airplane engines and the basic principles which make them work.

JORDANOFF, ASSEN

Power and flight. Illustrations drawn by Elizabeth Paige and others. New York: Harper and Brothers, 1944. 314 p. illus. 24 cm. \$3.50. 4430

Contents: Power and flight. What you should know about power. Power-plants. What is horsepower? The engine. How to judge an engine. Fuels. Fuel systems. Carburetion—induction—supercharging. The piston moves. Ignition systems. Lubrication. Controls and instruments. Starting the engine. Electric power. Accessories. Propellers. Your tools and your shop. Engine overhaul—disassembly—cleaning—inspection—sub-assembly. Final assembly and test.

Note: Explains in simple terms and with clear drawings the principles of aircraft engines. Especially useful for its descriptions of carburetors, fuel systems, ignition systems, lubrication, engine controls, and accessories. Contains one chapter on propellers. The latter part of the book deals with engine servicing. A series of reproductions of photographs shows the major steps in the disassembly, cleaning, inspection, repair, and reassembly of a Wright Cyclone 9.

LISTON, JOSEPH

Aircraft engine design. New York: McGraw-Hill Book Company, Inc., 1942. 486 p. illus. 23 cm. \$4.50. 4431

Contents: Requirements, possibilities, and limitations. Outline of the project. Gas-pressure forces. Analysis of the crank chain. Analysis of bearing loads. Design of reciprocating parts. Crankshaft vibration and balance. Crankshaft details and reduction gearing. Cylinders and valves. Valve gear. The crankcase, superchargers, and accessories.

Note: The purpose of this text is to aid technical students in bridging the gap between the point (1) where they have a fairly complete knowledge of the fundamentals of mathematics, mechanics, and machine design, and (2) where they are sufficiently familiar with the application of these fundamentals to the design of aircraft engines to enable them to be of value to the aircraft engine building industry.

MANLY, GARDENER BURNELL

Aircraft powerplant manual; a practical instruction and reference work on aircraft powerplants and allied subjects. Chicago: F. J. Drake & Company, 1942. 759 p. illus. 20 cm. \$4.00. 4432

Contents: Aircraft powerplant types and construction. Elements of power output. Valves. Fuels and fuel systems. Lubricants and lubrication systems. Carburetors, fuel injectors and superchargers. Starting and electrical systems. Ignition systems. Propellers. Operating the powerplant. Servicing the powerplant and trouble shooting. Powerplant maintenance. Detail overhaul procedure. Aircraft powerplant specifications. Mathematical and conversion tables.

Note: This manual for aircraft mechanics and commercial flying students explains and illustrates the step by step procedure necessary to maintain aircraft engines, their accessories and propellers, at peak efficiency. The book has been arranged in such a manner that it may be used as a guide in proceeding with periodic inspection, adjustment, servicing, top overhaul or major overhaul, of any aircraft powerplant in common use today. A description of the construction and function of several units has been included for those unfamiliar with aircraft powerplant units.

SHEDENHELM, LAWRENCE ELLSWORTH

Pilots' powerplant manual. Washington, D.C.: Government Printing Office, 1940. 392 p. illus. 26 cm. (United States. Civil Aeronautics Administration. Civil aeronautics bulletin no. 28) Paper, \$0.75. 4432a

Contents: Preface. The powerplant and the pilot. Fundamental powerplant requirements. Powerplants available. Engine nomenclature. Cycles of operation and power output factors. Valve operating mechanisms and timing. Engine design and construction practices. Powerplant installation. Lubricants and lubrication systems. Fuel and fuel systems. Carburetion, fuel injection, and supercharging. Starting, charging, and ignition systems. Propellers. Powerplant operation. Powerplant maintenance.

Note: This manual of airplane engines, propellers, and engine accessories was prepared for use as a textbook in the Civilian Pilot Training Program. Specifically designed for use in ground school work, the text is intended to aid in training pilots to operate the powerplant properly rather than to be used in training skilled maintenance technicians. Effort was made to present the material in a general way instead of dealing with specific types and makes of powerplants. The book is illustrated with numerous diagrams and photographs, and sets of questions are included at the ends of chapters. The author was assisted in preparation of the manual by John S. Parker, Jr.

SUDDETH, JAMES H.

Aircraft engine maintenance. New York: John Wiley & Sons, Inc., 1942. 400 p. illus. 23 cm. \$2.75. 4433

Contents: Theory of operation. Factors of operation. Engine components. Fuels, fuel systems and refueling. Carburetion. Lubrication. Ignition. Instruments. Accessories. Propellers. Installation. Vibration. Operation. Inspection, service and repair. Index.

Note: This is a book full of practical, workable information, written in simple, clear style, for the aircraft mechanic, and for the man who wants to become familiar with aircraft engine maintenance. A large portion of the book is an explanation of the construction and operating principles of the aircraft engine, but the book covers each of the accessories as well as the engine itself.

THORPE, LESLIE AARON

Practical thermodynamics for aircraft engines. San Francisco, Calif.: Aviation Press, 1941. 236 p. illus. 23 cm. (Cadet series) Paper, \$3.50; cloth, \$4.50. 4433a

Contents: Preface. Elementary principles. Principles of engine operation. Two-stroke and four-stroke cycle engines. Isothermal compression and expansion of gases. Adiabatic compression and expansion of gases. Fuels and chemistry of combustion. Heating value of fuels. Specific heat. Indicator diagrams. Power calculations. Engine efficiency. Performance calculations. Obtaining performance data. Volumetric efficiency. Engine cooling. Valve theory. Carburetion and ignition. Index.

Note: Presents the essentials of thermodynamics with the mathematics restricted to arithmetic in order to make the subject intelligible to the aircraft engine mechanic who has no training in college mathematics or engineering.

UNITED STATES. WAR DEPARTMENT

Aircraft power plant operation. War Department Technical manual TM 1-408. War Department, 16 March 1944. Washington, D.C.: United States Government Printing Office, 1944. 192 p. illus. 21 cm. Paper, \$0.30. 4434

Contents (abridged): Power plant operation. Power plant inspection and maintenance. Power plant trouble analysis. Common power plant troubles and possible causes. Index.

Note: This manual supersedes TM 1-408, *Aircraft engine operation and test*, 24 December 1941. Background material and directions for general care of the power plant, without reference to size or complexity.

WILKINSON, PAUL H.

Aircraft Diesels. New York: Pitman Publishing Corporation, 1940. 275 p. illus. 23 cm. \$6.00. 4435

Contents: History of the Diesel aircraft engine. Basic principles and functioning. Cyclic phases and processes. Combustion chambers. Valves and ports. Fuel injection systems and equipment. Superchargers—gear-driven and exhaust. Engine accessories. Diesel aircraft engine specifications. Junkers Jumo 205 Diesel aircraft engine. 2-cycle Diesel aircraft engines. 4-cycle Diesel aircraft engines (radial). 4-cycle Diesel aircraft engines (in-line). Economic advantages of the Diesel. Mechanical advantages of the Diesel. Fuel oil and lubricating oil. Diesel research and development. Deutsche Lufthansa's flights with the Diesel. Transoceanic operation with the Diesel. The future of the Diesel in aviation. Appendix. Index.

Note: A reference book for the aircraft design engineer and student. The construction of different types of engines is presented in detail and standardized pages of data are provided for ready reference. The development and mass production of Junkers Jumo Diesels are described, as well as other German Diesel-powered aircraft. The advantages of Diesel for aviation, such as lower fuel consumption and lower operating cost, high efficiency, and reliability, are discussed at length, and future trends in this field are evaluated. The data are in English and in metric measurements.

WILKINSON, PAUL H.

Aircraft engines of the world 1944. New York: Paul H. Wilkinson, 1944. 320 p. illus. 23 cm. \$8.50. 4435a

Contents: Advertising section. Preface. Introduction. Standardized engine data. United States of America: Aircooled Franklin, Allison, Continental, Guiberson, Jacobs, Kinner, Lycoming, Menasco, Packard, Pratt & Whitney, Ranger, Warner, Wright; auxiliary engines: Andover, Eclipse, Lawrance, Onan. France: Gnome-Rhone, Hispano-Suiza, Renault, Salmson. Germany: Argus, B.M.W., Bramo, Daimler-Benz, Hirth, Junkers, Zündapp. Great Britain: Alvis, Armstrong Siddeley, Blackburn Circus, Bristol, De Havilland, Pobjoy, Napier, Rolls-Royce. Italy: Alfa Romeo, C.N.A., Fiat, Isotta Fraschini, Piaggio. Japan: Mitsubishi, Nakajima. U.S.S.R.: M-38, M-88, M-105. Engine tabulations. Index of engines. Engines omitted from 1944 edition.

Note: In this reference book, a full-page photograph of each engine accompanies a standardized text page giving details of construction, dimensions, weight, fuel consumption, lubrication, etc. The book has been extensively revised since the previous edition (1941). Obsolete material has been omitted; and 65 pages of engine data added. The Introduction now enumerates the various aircraft engine manufacturers in this country and abroad and the types of planes in which their engines are used. In the body of the text several pages of tabulations have been included, showing the general characteristics of the engines built in each country. The data are in English and metric measurements.

Aircraft Equipment

ADAMS, HAROLD W.

Aircraft hydraulics. New York: McGraw-Hill Book Company, Inc., 1943. 159 p. illus. 23 cm. \$1.75. 4436

Contents: Part I, Principles: Introduction. Flow of fluids. Hydraulic systems. Part II, Design: Power system. Subsystems. Design procedure. Part III, Unit design: Design of basic units. Design of special-purpose units. Hydraulic-unit design procedure. Part IV, Drafting, manufacture, installation, testing, and maintenance: Drafting of aircraft hydraulic systems. Manufacture of aircraft hydraulic units. Installation of aircraft hydraulic systems. Testing aircraft hydraulic units. Maintenance of aircraft hydraulic systems. Index.

Note: A concise text and reference book for aircraft engineers, mechanics, and students, covering the basic principles and general rules for the design of aircraft hydraulic systems. Emphasis is upon theory rather than practical details of systems in current use.

AUMENT, HUGH C.

Airplane hydraulic systems; their operation and maintenance, a manual for mechanics. New York: The Ronald Press Company, 1943. 120 p. illus. 21 cm. \$2.25. 4437

Contents: Basic hydraulic principles and fluids. Reservoirs. Check valves. Relief valves. Hand pumps and power pumps. Surge chambers, pressure tanks, and accumulators. Selector valves. Actuating units. Pressure regulator. Lines, tubing, seals and glands. Comparison of hydraulic systems. Filters for aircraft hydraulic systems. Sperry extactor control. Hydraulic systems. Inspection and maintenance. Questions and answers.

Note: A practical, introductory book for mechanics. It is designed not only to explain operations necessary to maintenance but also enough of the principles involved to enable the mechanic to understand hydraulic systems. Schematic drawings are used to show the operation of hydraulic mechanisms.

CLARK, NORMAN J., AND HOWARD E. CORBITT

Aircraft electricity for electricians and designers. Revised edition. New York: The Ronald Press Company, 1942. 350 p. illus. 24 cm. \$3.50. 4438

Contents: Electrical theory. Symbols and basic circuits. Wiring diagrams. Conduit layout. Bonding and shielding of aircraft. Compass deflection due to unbalanced electromagnetic fields. Electrical inspection. Protection of wire and electrical equipment. Aircraft lighting systems. Electric motors for aircraft. Relays and solenoids. Design notes.

Note: This volume is designed to meet training needs of drafting room and shop. It is intended to provide both new and experienced aircraft men and women with modern methods and procedure in the design and construction of the electrical system of military and naval aircraft. The photographic illustrations, engineering performance data, diagrams, and standards were furnished by manufacturers of aircraft and accessory equipment. There is an index.

DEBAUD, GENE CHARLES

Pilots' and mechanics' aircraft instrument manual. New York: The Ronald Press Company, 1942. 490 p. illus. 22 cm. \$4.50. 4439

Contents: Oil pressure gauge. Free air thermometer. Carburetor air thermometer. Engine thermometer. Resistance thermometer indicators (carburetor air, outside air and oil temperatures). Engine gauge unit. Suction gauge. Fuel pressure gauge. Accelerometer. Cylinder temperature indicator. Cambridge aero mixture indicator. Centrifugal and electric tachometers. Manifold pressure gauge. Pioneer autosyn. Electric fuel quantity gauge. Aircraft clock. Air-speed indicator. Pioneer turn and bank indicator. Rate of climb-vertical speed indicator, altimeter. Western Electric radio altimeter. Magnetic compass. Kollsman direction indicator (remote indicating). Sperry gyro horizon. Sperry directional gyro. The Sperry aircraft gyropilot, model A-3. Pioneer direct current autosyn position indicator. Pioneer octant. Aircraft bubble sextant. Gatty ground-speed and drift indicator. Oxygen regulator. Anti-vibration mounting of aircraft instruments. Link aviation trainer. Instrument flying training. Radium painting.

Note: A textbook for systematic courses in technical and aviation schools and for use without an instructor. It is progressively arranged so that users will fully understand each instrument—its purpose and necessity, errors and remedies, and its installation and maintenance.

EDDY, MYRON FISH

Aeronautic radio; a manual for operators, pilots, radio mechanics. New York: The Ronald Press Company, 1939. 502 p. illus. 21 cm. \$4.50. 4440

Contents: Aviation radio communications. Fundamentals of electricity. Radio electricity. Radio circuits. Radio tubes. Batteries. Power supplies. Radiotelegraph transmitters. Radio range beacons. Radiotelephone transmitters. Receivers. Direction finders. Instrument landing systems. Radio traffic control. Installation of equipment. Maintenance. Appendix: Standard graphical symbols used in radio engineering; definitions of terms used in radio engineering.

Note: A manual for operators, pilots, and radio mechanics. It follows the requirements of the Federal Communications Commission, the Civil Aeronautics Administration, and approved usage for both communication and special purposes such as course guidance and instrument landing.

FALK, KARL HANSSON

Aircraft propeller handbook. New York: The Ronald Press Company, 1943. 146 p. illus. 22 cm. \$4.50. 4441

Contents: Propeller design. Static and gyroscopic characteristics. Aerodynamic characteristics. Twisting moments. The strength of propellers. Vibration. Examples. Selection of a propeller. Tables; propeller diameters. Index.

Note: Prepared for engineers and others in aeronautics desiring concise, practical data without delving into propeller theory. Presents information the author has required in his own designing, working out examples, simplifying equations and using advanced mathematics only in a few necessary cases. In this revised edition advanced material appears on aerodynamic characteristics, strength of propellers, and vibration, an addition of about fifty pages.

IRVIN, GEORGE ELLIS

Aircraft instruments. Second edition. New York: McGraw-Hill Book Company, Inc., 1944. 607 p. illus. 21 cm. \$5.00. 4442

Contents: Meteorology and meteorological instruments. Engine instruments: pressure gauges. Thermometers. Manifold pressure gauges. Tachometers and synchronizers. Engine instruments (secondary): fuel quantity gauges. Remote indicating systems. Navigation instruments: compasses (card, aperiodic, remote-indicating). Octants. Directional gyro (Sperry). Flight instruments: Air-speed indicators. Rate-of-climb indicators. Altimeters. Pioneer turn and bank indicator. Artificial horizon (Sperry). Gyro pilot (Sperry). Instrument panel design. Antivibration mounting of airplane instruments. Plumbing: vacuum pumps. Fabrication and installation of aircraft tubing. Index.

Note: A textbook written primarily for courses in technical high schools and aircraft schools, but useful also to working mechanics and maintenance men. It covers design, operation, installation, maintenance and repair of all types of aircraft instruments. New material comprising over 100 pages has been added to the chapters dealing with electrical-type thermometers and temperature gauges, the Weston A.C.-D.C. tachometer, Kollsman Hp indicator, Pioneer magnesyn compass, and the fuel flowmeter. There are numerous additional charts, drawings, and photographs.

JORCH, WILLIAM F.

Aircraft electrical systems, their maintenance and servicing; a manual for mechanics. New York: The Ronald Press Company, 1943. 208 p. illus. 21 cm. \$3.00. 4443

Contents: Test equipment and instruments. Symbols. Generators: operation—construction—rating—disassembly—assembly—checking—maintenance and testing. Generator control panels: voltage regulators—current regulator—reverse current cut-out—three-unit control panel—voltmeters and ammeters—maintenance—electrical testing—adjusting control panel—flashing mounted generator field. Batteries: construction—charging methods—testing methods—maintenance. Starters. Ignition: battery ignition—magneto ignition—magneto switches—spark plugs. Wiring: lighting—wiring diagrams. Questions and answers.

Note: A manual for practical mechanics. Simple, speedy methods of testing equipment are suggested. The aim is to equip the user, from his own knowledge of basic features common to all electrical apparatus, to quickly see how to go about any problem, and to understand manufacturers' instruction books so as to use them effectively.

MANLY, GARDENER BURNELL

Aircraft electrical and ignition systems, a practical instruction and reference work on aircraft electrical and ignition systems. Chicago: F. J. Drake & Company, 1942. 280 p. illus. 20 cm. \$2.00. 4444

Contents: Electricity. The aircraft storage battery. Current generation. Generator control and regulation of output. Generator and control unit overhaul. Engine cranking or starting apparatus. Ignition systems. Ignition system timing, adjustment, and overhaul. Spark plugs. Index.

Note: A practical instruction and reference work on aircraft electrical ignition systems, for the mechanically-minded man desiring to learn the practical methods of servicing and overhauling electrical equipment as it is practiced on aircraft powerplants in actual use. Wherever it has been considered necessary, in order to simplify the intelligent performance of repair work, a description of the construction and function of the unit involved has been included.

MATSON, RANDOLPH

Aircraft electrical engineering. New York: McGraw-Hill Book Company, Inc., 1943. 372 p. illus. 23 cm. \$3.50. 4445

Contents: Introduction. Drawing practice. Wiring diagrams. Wiring. Power-supply systems. Power-supply equipment. Power-plant electrical equipment. Electric motors and power drives. Lighting. Miscellaneous electrical equipment. Conduit and open wiring. Junction boxes. Bonding and shielding. Radio. Instruments.

Note: Designed specifically for courses in aircraft electrical engineering which prepare the student as directly as possible for activities in the electrical group in engineering departments of aircraft manufacturers. Emphasis is on the solution of the practical problems confronting the electrical engineer.

MORGAN, HOWARD KEY

Aircraft radio and electrical equipment. New York: Pitman Publishing Corporation, 1939. 374 p. illus. 23 cm. \$4.50. 4446

Contents: Hydraulic analogies. Power conversion. Condensers and coils. Accessory equipment. Tubes and amplifiers. Transmitter fundamentals. Commercial aircraft transmitters. Receiver fundamentals. Commercial aircraft receivers. Radio waves and static. Direction finding. Ultra high frequency equipment. Inspection and maintenance. Use of questions. Bibliography. Index.

Note: This book is intended for airplane mechanics, transport pilots, and others who have a practical interest in the subject.

MOSS, SANFORD ALEXANDER

Superchargers for aviation. New York: National Aeronautics Council, Inc., 1942. 103 p. illus. 22 cm. \$1.00. 4446a

Contents: Introduction. Developments underlying the supercharger. Supercharger arrangement and use. Supercharger history. Details of superchargers in general. Turbosuperchargers. Supercharging theory. Cabin superchargers. The supercharger in war.

Note: A simplified, non-technical account of the theory and operation of aviation superchargers, their historical background and present-day development and uses, written for the layman, students, and persons without technical training who are interested in superchargers from a practical viewpoint.

NELSON, WILBUR CLIFTON

Airplane propeller principles. New York: John Wiley & Sons, Inc., 1944. 129 p. illus. 22 cm. \$2.50. 4447

Contents: Propeller blade action theory. Aerodynamic propeller tests. Blade design and stress analysis. Hub design and stress analysis. Effect of the propeller on airplane performance. Appendix. Index.

Note: Facts the design engineer, the production supervisor, the aeronautical engineer need to know about airplane propellers are given in this book. It is a brief and elementary treatment of the fundamental principles underlying the design and operation of the modern airplane propeller, together with a number of practical applications. The material has been expanded from a series of lectures given to a group of engineers of the Aero-products Division of the General Motors Corporation. Aerodynamical and structural analyses are developed sufficiently so that the reader will have an adequate background for specialized study. The use of calculus is limited to the extensive use of graphical integration for the evaluation of certain integrals. There is a minimum of empirical test data.

SANDRETTO, P. C.

Principles of aeronautical radio engineering. New York: McGraw-Hill Book Company, Inc., 1942. 414 p. illus. 23 cm. \$3.50. 4448

Contents: i, Introduction: Application of radio to aeronautics. ii, Navigation: The radio range. The ultra-high-frequency radio range. Aircraft direction finders. Markers. Instrument landing. Absolute altimeters. Direction finding from ground stations. iii, Communications: Medium-high-frequency communication. Ultra-high-frequency communication. iv, Accessories: Aircraft power supply systems. Considerations in aeronautical radio systems design. Appendix: Mechanical requirements for aircraft radio equipment.

Note: A treatment for engineers of radio as it is used in aeronautical navigation and communication. It introduces the special factors of the aeronautical problem briefly, then takes up in detail each of the nine radio facilities used in modern air transport practice. Covers the special performance, installation, and servicing factors influencing the design of these facilities and outlines engineering fundamentals and methods that have been developed for handling them.

THOMPSON, JAMES EDGAR, AND RODNEY B. CAMPBELL

Manual for aircraft hydraulics; theory, maintenance, design. San Francisco, Calif.: Aviation Press, 1942. 202 p. illus. 24 cm. (Cadet engineering series) Paper, \$4.00; cloth, \$5.00. 4448a

Contents: Preface. Introduction. Operating principles of hydraulic systems. Designing the basic system. Designing the system installation. Designing actuating cylinders. Typical hydraulic system units. Maintenance of hydraulic equipment. Index.

Note: This volume, reproduced from typewritten copy and abundantly illustrated, is intended as a manual of aircraft hydraulics for the engineer, operator, and mechanic. It covers the basic principles of design, operation, and maintenance.

UNITED STATES. WAR DEPARTMENT

Aircraft induction, fuel and oil systems. War Department Technical manual TM 1-407. War Department, 22 February 1944. Washington, D.C.: United States Government Printing Office, 1944. 132 p. illus. 21 cm. Paper, \$0.20. 4449

Contents (abridged): Aircraft engine fuels and lubricants. Oil systems. Fuel systems. Carburetion systems. Superchargers. Engine control systems. Index.

Note: This manual supersedes TM 1-407, November 1941. It describes various characteristics of different types of fuels and lubricants, tanks, tubing, valves, pumps, etc., without reference to formulas or specific models. Relation of supercharger to power plant and different types of superchargers are well covered.

UNITED STATES. WAR DEPARTMENT

Aircraft instruments, prepared under direction of the Chief of the Air Corps, War Department Technical manual no. 1-413. War Department, February 2, 1942. Washington, D.C.:

United States Government Printing Office, 1942. 234 p. illus. 22 cm. Paper, \$0.30. 4450

Contents (abridged): Maintenance, storage, and repair. Installation. Fuel pressure gages. Suction gages. Manifold pressure gages. De-icing pressure gages. Oil pressure gage. Landing gear pressure gage. Engine gage units. Chronometric tachometers. Generator-voltmeter tachometers. Engine synchronism indicator (Weston). Engine synchroscope (Eclipse). Vapor pressure thermometers. Electrically operated thermometers. Cylinder temperature gages. Fuel mixture indicators. Self-synchronous instruments. Selsyn instruments. Fuel level gages. Aircraft compasses (magnetic). Air speed indicators. Air speed tubes. Altimeters. Rate of climb indicators. Bank and turn indicators. Turn indicators (directional gyro). Flight indicators. Automatic pilot type, A-2. Miscellaneous instruments. Type C-1 portable instrument field test set. Instrument test equipment. Index.

Note: A general manual of characteristics common to various makes and models of each type of instrument.

UNITED STATES. WAR DEPARTMENT

Aircraft propellers. War Department Technical manual no. 1-412. War Department, 5 January 1944. Washington: United States Government Printing Office, 1944. 249 p. illus. 23 cm. Paper, \$0.35. 4451

Contents: Wood propellers. Ground-adjustable propellers. Hamilton standard two-position propellers. Hamilton standard constant-speed propellers. Hamilton standard hydromatic propeller. Aero-products propeller. Curtis electric propeller (three-blade model). Curtis electric propeller (hollow-shaft model). Curtis electric propeller (four-blade model). General maintenance and repair. Universal propeller protractor. Propeller anti-icing equipment. Index.

Note: A general treatment of the various types of propellers in common use, with specific directions for assembly and maintenance, insofar as the various models of each type may be identical.

UNITED STATES. WAR DEPARTMENT

Airplane hydraulic systems. War Department Technical manual TM 1-411. War Department, 8 May 1944. Washington, D.C.: United States Government Printing Office, 1944. 112 p. illus. 23 cm. Paper, \$0.25. 4452

Contents: Hydraulic principles and their application. Energizing and actuating units. Pump unloading valves. Flow control valves. Pressure control valves. Brake actuating systems. Hydraulic systems. Inspection and maintenance of hydraulic systems. Index.

Note: Supersedes TM 1-411, 20 October 1941. General treatment without reference to specific models or installations. Excellent diagrams in black, white, red, and blue.

UNITED STATES. WAR DEPARTMENT

Miscellaneous aircraft equipment. War Department Technical manual TM 1-416. War Department, 22 March 1944. Washington, D.C.: United States Government Printing Office, 1944. 84 p. illus. 22 cm. \$0.15. 4453

Contents (abridged): Flotation equipment. Portable fire extinguishers. Fixed fire extinguishers. Pyrotechnic pistols and signal flares. Ice-eliminating equipment (inflatable shoe type). Oxygen equipment. Heating and ventilating equipment. Electrically heated clothing. Auxiliary power units. Index.

Note: Presents in compact form general information on miscellaneous aircraft equipment.

WEICK, FRED ERNEST

Aircraft propeller design. New York: McGraw-Hill Book Company, Inc., 1930. 294 p. illus. 23 cm. \$4.00. 4454

Contents: Introduction. The momentum theory. The airfoil. The simple blade-element theory. Modifications of the blade-element theory. Aerodynamic tests on propellers. The effect of

blade shape on propeller characteristics. The effect of tip speed on propeller performance. Body and propeller interference. The effect of propeller characteristics on airplane performance. The variable-pitch propeller. The gearing of propellers. Tandem propellers. Materials and forms of construction. The strength of propellers. Summary of factors to be considered in the design of a propeller. Design procedure, with charts and examples. Index.

Note: This volume brings together the important experimental, theoretical, and practical developments which have been made in the field of airplane propeller design up to the time of publication. There are a few bibliographic footnotes.

Aircraft Maintenance

BRIMM, DANIEL JOHNSON, JR., AND H. EDWARD BOGGESS

Aircraft maintenance. New York: Pitman Publishing Corporation, 1940. 492 p. illus. 23 cm. \$2.50. 4455

Contents: Aircraft woodwork. Aircraft metal work. Aircraft fabric work. Rigging, handling, maintenance. Index.

Note: This volume is a revised edition of the same authors' *Airplane and engine maintenance*, New York: Pitman, 1936, with the exception of the parts dealing with engines, from which a new book has been made (see the same authors' *Aircraft engine maintenance*, see Index). *Aircraft maintenance* covers the daily work of an aviation mechanic aside from the engine work. It is abundantly illustrated with photographs, diagrams, tables, etc. The new edition incorporates suggestions made by users of the earlier edition and contains large new sections on metal construction and hydraulic systems.

COLVIN, FRED HERBERT

Aircraft handbook. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1942. 784 p. illus. 21 cm. \$5.00. 4456

Contents: Allison engines. Twin Wasp engines. Rolls-Royce Merlin Aero engine, Series II. Wright Cyclone engines. Lycoming opposed-cylinder engines. Menasco Pirate engines. Ranger engines. Kinner, Lambert, and Warner engines. Smaller engines. Carburetors. Magnetos. Spark plugs. Engine starters. Propellers. Instruments. Landing apparatus. Construction details. Irvin air chute. Inspection and maintenance. S.A.E. aircraft standards. Index.

Note: An illustrated manual and reference guide for aircraft mechanics, presenting a practical working knowledge of the operation and repair of aircraft engines, propellers, instruments, landing gear, and other accessory apparatus. The material is largely based on the manufacturers' descriptions and trade publications, and covers general instructions for each make and type of engine, inspection, replacement of parts, assembly and disassembly, lubrication, timing of valves and magnetos, repair of airplane instruments, and related subjects. The work does not include any of the engine types developed as an outcome of World War II, but is nevertheless useful as a guide to pre-war airplane maintenance and repair of second-hand equipment.

JORDANOFF, ASSEN

The man behind the flight; a ground course for aviation mechanics and airmen. New York: Harper & Brothers, 1942. 276 p. illus. 25 cm. \$3.50. 4457

Contents: Introducing mechanical drawing. Elementary electricity. Introductory hydraulics. Mechanics for mechanics. Introduction to physics. The man behind the man behind the flight.

Note: An introductory treatment of fundamentals intended to provide a ground course in aeronautics. The book is generously illustrated with reproductions of clear line drawings. The concluding chapter is a short history of the development of flight. Ninety photographs bearing on the history of aeroplanes are included in the back of the book. There is no index.

LESLEY, HUBERT G.

Airplane maintenance. New York: John Wiley & Sons, Inc., 1940. 511 p. illus. 23 cm. \$2.75. 4458

Contents: Foreword. Preface. Maintenance. Materials and processes. Controls. Hydraulics. Electrical circuits. Structural repairs. Aircraft welding. De-icing equipment. Instruments. Fuel and oil system. Heating systems. Vibration. Index.

Note: A comprehensive book designed not only for airplane mechanics, but also for use as a reference book on airplane materials, construction, and equipment by persons concerned with these subjects from the point of view of maintenance. The author's *Basic airplane mechanics*, New York, John Wiley & Sons, Inc., 1944, 404 p., \$2.50, treats the subject in a more elementary and less comprehensive manner.

MARKLEY, JAMES M.

Fundamentals for the aircraft mechanic. New York: McGraw-Hill Book Company, Inc., 1943. 345 p. illus. 21 cm. \$4.00. 4459

Contents: Preface. Introduction. Sketching and blueprint reading. Shop mathematics. Theory of flight and design. Airplane construction and materials. Hydraulics. Electricity. Propeller operation and maintenance. Engine principles. Appendix. Index.

Note: A basic course designed to prepare mechanics for further specialized training in general aircraft maintenance. The book covers the fundamentals of airplane construction, operation, and maintenance as well as the use and care of tools, blueprint reading, shop mathematics, and theory of flight. It is not intended to be conclusive enough to produce a specialist in any of the branches covered. The book is not designed for self study.

NATIONAL AERONAUTICS COUNCIL, INC.

Handbook of airplane maintenance and operation. A practical treatment of the assembly, service, maintenance and overhaul of aircraft, engines and accessories. Edited by specialists in the field of aeronautics. New York: National Aeronautics Council, Inc., 1944. 502 p. illus. 22 cm. \$4.50. 4460

Contents: The internal-combustion engine, by Ivor B. Yassin. The aircraft engine, by Ivor B. Yassin. The lubrication system, by Ivor B. Yassin. The carburetor, by Ivor B. Yassin. Supercharging of aircraft engines, by Sanford B. Moss. Types of aircraft engines and their construction, by Ivor B. Yassin. Aircraft magnetos, by Ivor B. Yassin. Spark plugs, by Alton DuFlon. Aircraft engine installation requirements, by Ivor B. Yassin. Overhaul of the aircraft engine, by H. C. Bender. Installation of the aircraft engine in the aircraft structure, by Holden C. Richardson. Methods of starting aircraft engines, by Holden C. Richardson. Maintenance of the engine, by Ivor B. Yassin. Propellers, by Jack H. Sheets. Aircraft instruments, by Haworth W. Hurt. Aircraft landing gears, by Ivor B. Yassin. Aircraft structure and construction, by Ivor B. Yassin. Maintenance and overhaul of the airplane structure, by Martin Barzelay. The construction and repair of flying boats, by Holden C. Richardson. Index.

Note: An elementary but comprehensive manual covering theory, construction, operation, and maintenance of airplanes. It is intended to serve the needs of both beginner and expert as a text and reference work. The manual is illustrated with numerous line drawings and diagrams.

NORCROSS, CARL, AND JAMES D. QUINN, JR.

The aviation mechanic. New York: McGraw-Hill Book Company, Inc., 1941. 563 p. illus. 23 cm. \$3.50. 4461

Contents: General introduction: The importance of mechanics' work. Modern airplanes. How an airplane flies. Construction: Introduction to construction. We build an airplane. Building a typical light plane. Large factory production. Maintenance: Aircraft maintenance and repair. We service engines. We work for an airline. The maintenance of military aircraft.

Note: A practical manual for those aiming for or holding jobs in airplane factories or as airplane mechanics. Covers the requirements of the mechanic's work, the procedures, and the details of various operations in simple text and many illustrations.

UNITED STATES. WAR DEPARTMENT

Aircraft woodwork. War Department Technical manual no. 1-414. Washington, December 22, 1942. Washington: United States Govern-

ment Printing Office, 1943. 148 p. illus. 22 cm. \$0.20. 4463

Contents (abridged): Characteristics of wood, lumber and plywood. Glue and hardware. Hand tools. Woodworking machines and operations. Construction and repair of wooden aircraft. Index.

Note: Although this manual is intended for use as a guide in the repair and maintenance of aircraft employing wood as a structural material, the first hundred pages are devoted to a discussion of the characteristics of wood and to descriptions and directions relating to hand and power tools.

UNITED STATES. WAR DEPARTMENT

Airplane inspection guide. War Department Technical manual no. TM 1-415. War Department, Washington, 17 August 1943. Washington: Government Printing Office, 1943. 120 p. illus. 22 cm. Paper, \$0.25. 4464

Contents: Inspection periods. Maintenance inspection records. Order of inspection. Preflight and afterflight inspections. Inspection of structures. Inspection of propellers. Inspection of instruments. Inspection of hydraulic systems and miscellaneous equipment. Inspection of engines. Inspection of electrical systems. Inspection of induction, fuel and oil systems. Index.

Note: Supersedes TM 1-415, 7 March 1942. These instructions furnish complete information of a general nature regarding the various inspections and checks to be made and the procedure to be followed in the performance of the inspection of all types of airplanes. Army Air Force forms are used in most examples of records but this does not detract from the general nature of the routines.

YOUNGER, JOHN ELLIOTT, AND OTHERS

Airplane maintenance; a textbook for airplane mechanics, by John E. Younger, Allan F. Bonnalie and Nairne F. Ward. Second edition. New York: McGraw-Hill Book Company, Inc., 1944. 361 p. illus. 23 cm. \$3.00. 4465

Contents: Preface. Job units. Qualification of an airplane mechanic. Repair shops and equipment. Airplane parts and equipment: structural types and nomenclature. Static and dynamic testing. Properties and uses of metals. Maintenance of metals. Aircraft-maintenance welding. Aircraft-welding methods. Basic principles of thin-sheet-metal structures. Forming thin sheet metals for repairs. Rivets and riveting. Repair of thin-sheet-metal structures. Repair of wood, wire, and fabric structures. Maintenance cleaning. Maintenance of propellers. Servicing of shock absorbers, brakes, and tires. Appendix. Index.

Note: This practical textbook is a companion volume to the authors' *Airplane construction and repair*, New York: McGraw-Hill Book Co., Inc., 1931, 432 p., \$3.00, which deals with small airplanes of wood, wire, tubular steel, and fabric types. The present volume is concerned with the repair, overhaul and maintenance of large all-metal aircraft of both transport and combat type.

Gliders

ANDREWS, JOHN PAUL

Gliding and soaring. New York: Robert M. McBride and Company, 1944. 190 p. illus. 24 cm. \$2.75. 4466

Contents: Introduction, by Melvin J. Maas. The case for the glider. Fifty years of silent flight. From Kitty Hawk to Crete. The why of gliding. What glider shall we buy? The methods of launching. Instruments of gliding. Glider-club prospects and problems. Flying the primary glider. Flying the secondary glider. Flying the sailplane. Natural elements of soaring. Currents for soaring. Balancing the glider-club budget. The future for gliders. Gliding records.

Note: A practical approach to gliding in all its phases, including gliding as a sport, as an introduction to powered flight, and as an educational project. The book presents a short course in simple aerodynamics without the use of mathematics, explaining what makes the glider fly, how it stays aloft, and elementary design and construction of gliders. The technique of flying gliders is fully explained in simple terms for the layman

and is accompanied by a chapter on instruments and instrument flying. A section is included on gliding clubs and how schools can operate them along the lines of a national youth training program. There are numerous rotogravure photographs.

BARNABY, RALPH STANTON

Gliders and gliding; design principles, structural features, and operation of gliders and soaring planes. New York: The Ronald Press Company, 1930. 170 p. illus. 22 cm. \$2.50. 4467

Contents: General considerations. History. Classification of gliders. Operation of controls, and simple aerodynamics. Instruction methods, launching methods, and terrain. Control of the glider in flight. Soaring. Towing gliders, seaplane gliders, and "motor gliders." Design and construction of primary and secondary gliders. The soaring plane. The gliding diagram and its uses. The future.

Note: Design principles, structural features, and operation of gliders and soaring planes are discussed for glider club members and students in high schools and aeronautical engineering. Flight principles are explained so that air effects will be understood and danger avoided. Structural details explained apply generally to any glider type.

BARRINGER, LEWIN BENNITT

Flight without power; the art of gliding and soaring. Revised edition. New York: Pitman Publishing Corporation, 1942. 221 p. illus. 23 cm. \$3.00. 4467a

Contents: History of motorless flight, by N. H. Randers-Pehrson. Aerodynamics, by Paul Schweizer, assisted by Milton Stoughton and Ernest Schweizer. Types of gliders, by L. B. Barringer. Design, construction and maintenance, by Paul and Ernest Schweizer. Launching methods, by L. B. Barringer. Soaring meteorology, by K. O. Lange. Instruments, by C. H. Colvin and August Raspet. Flight training, by L. B. Barringer. Soaring technique, by L. B. Barringer. Transport gliders, by L. B. Barringer. Appendix: Gliding and soaring licenses. Civil certificates. Contest statistics. Tables of records. Biographical sketches of first ten American "Silver C" pilots. Lists of "Silver C" and "Golden C" pilots. Bibliography. Glossary. Index.

Note: A semi-technical work for persons seriously interested in motorless flying. This edition is a revised version of an edition originally published in 1940 and includes a new chapter on transport gliders.

MCDONALD, EUGENE F.

Youth must fly; gliding and soaring for America. New York: Harper & Brothers, 1942. 221 p. illus. 22 cm. \$2.50. 4468

Contents: Preface. Only man and the soaring birds. Youth must fly! Sailboats in the sky. What youth can do. Gliders for defense. More about defense. The glider as a military weapon. Glider construction and design. Gliding before the Wrights. The gliders learn to soar. Where do we go from here? Appendices: Licenses and Federal regulations. Gliding and soaring organizations. School and club operation. Excerpts—Sutphin committee hearings. Certificated gliders manufactured in the U.S.A. Index.

Note: A popular discussion of how gliding and soaring can be a valuable and inexpensive method of preliminary training for young men who are to become aviators.

THE SOARING SOCIETY OF AMERICA, INC.

Gliding and soaring operation manual. Compiled by Gustave Scheurer, R. E. Franklin, Arthur L. Lawrence, Richard C. duPont, Lewin B. Barringer, Henry Wightman, Theodore Bellak, Karl O. Lange, for the Soaring Society of America. Detroit, Mich.: Stone Aircraft Company, 1938. 73 p. illus. 23 cm. \$1.00. 4468a

Contents: Introduction. Important principles of glider flight. Gliding and soaring equipment. Launching methods. Primary flight training. Primary soaring instruction. Soaring meteorology. Safety precautions.

Note: This brief illustrated manual covers the elements of soaring and gliding. It is endorsed by the National Aeronautic Association.

Airports

DE LONGE, MERRILL E.

Modern airfield planning & concealment. New York, Chicago: Pitman Publishing Corporation, 1943. 167 p. illus. 23 cm. \$4.50. 4469

Contents: Bombardment objectives. Enemy eyes take wings. World through the bombardier's telescope. Avoiding telltale landmarks. Factors affecting airfield location. Natural concealment vital. Saving the terrain features. Tackling the landing field problem. Planning of the airfield facilities. Choosing proper color and texture. Completing the concealment scheme. Signals for friendly eyes. Looking into the future. Index.

Note: A manual of the planning of airports for concealment from enemy pilots. The author has had extensive experience both as a pilot and as a designer of camouflage.

SHARP, HOWARD OAKLEY, AND OTHERS

Airport engineering, by H. Oakley Sharp, G. Reed Shaw, and John A. Dunlop. New York: John Wiley & Sons, Inc., 1944. 150 p. illus. 28 cm. \$5.00. 4469a

Contents: Introduction. Size and site of an airport. Planning the site selected. Surveys preliminary to design. Grading. Drainage of airports. Soil stabilization. Flexible-type pavements. Rigid-type pavements. Airport lighting. Airport buildings. Construction and maintenance equipment. Appendix. Index.

Note: This volume is designed for undergraduate civil engineering students, but it will also be of value to practicing engineers and civic officials concerned with the establishment of airports. Layout plans of typical airports are given, together with plans for hangars, control towers, and administration buildings. There are numerous photographs of constructional and maintenance equipment in operation. The appendix contains diagrams for determining the discharge of pipe drains.

UNITED STATES. PUBLIC ROADS ADMINISTRATION

Principles of highway construction as applied to airports, flight strips and other landing areas for aircraft. Washington, D.C.: Government Printing Office, 1943. 514 p. illus. 23 cm. Paper, \$1.00. 4469b

Contents (abridged): Selection of site. Grading. Soil surveys. Soil identification. Construction of embankments. Drainage. Flexible bases and surfaces. Thickness of pavement. Base courses and surfaces. Construction methods. Rigid pavements. Design of concrete pavements. Construction. Use of turf on airports. Factors controlling the use of turf. Ground preparation. Maintenance. Appendix.

Note: The purpose of this publication is to make available to the engineer information on highway construction which will be useful in the building of airports. General features of location affecting grading, drainage, and surfacing are discussed. Methods of design and construction of earthwork, drainage structures, and pavements are described in sufficient detail to make possible the use of the treatise as a manual or guide for those responsible for the design and construction of airports. The appendix contains the complete set of specifications prepared by the Public Roads Administration for its use in direct government contract road construction.

UNITED STATES. WAR DEPARTMENT

Aviation engineers. War Department tentative Technical manual no. 5-255. War Department, Washington, December 31, 1942. Washington: United States Government Printing Office, 1942. 442 p. illus. 21 cm. \$0.55. 4470

Contents (abridged): Organization and duties. Equipment. Scope of training. Airdrome selection and reconnaissance. Pre-construction planning, layout, and design. General construction operations. Base courses: General description and requirements. Specific requirements and construction methods for bases. Steel runways. Surface courses: General description and basic operations. Detailed construction procedures. Airdrome maintenance.

Protective construction. Defense of airdromes. Airdrome camouflage: General. Construction and plans. Discipline before and during construction. Materials. Construction aids and expedients. Concealment of aircraft on the ground. Airborne engineer aviation units—mission, troops, equipment and training. Appendixes. Bibliography. Index.

Note: This manual covers both tactical and technical phases of the training and operations of aviation engineers with special reference to their employment in theaters of operation. With the exception of works on the subject of highway and airport construction, the bibliography includes only references to War Department manuals.

WOOD, JOHN WALTER

Airports, some elements of design and future development. New York: Coward-McCann, Inc., 1940. 364 p. illus. 28 cm. \$12.50. 4471

Contents (abridged): The requirements of the airport. Forty-eight airports from North and South America and Europe compared. A traffic-control airport-expansion plan (a proposed layout for commercial airports). Appendixes: Aviation statistics. Airport size. Runways. Drainage. Lighting. Traffic circulation. Seaplane bases. Flight strips. Buildings. Airports and the Civil Aeronautics Board. Assisted take-off. Weather reports. Aerial photography. Bibliography. Index. List of plates.

Note: A rather elaborate study based on first hand observations and investigation of airports constructed throughout the world up to 1940. The study was undertaken to determine the requirements of good airport design. Detailed descriptions are given for most of the airports studied and there are many reproductions of photographs.

Parachutes

ZIM, HERBERT SPENCER

Parachutes. Illustrated with drawings by James MacDonald and with photographs. New York: Harcourt, Brace and Company, 1942. 252 p. illus. 22 cm. \$2.50. 4472

Contents: From an idea to reality. Parachuting grows up. The parachute comes of age. Close up of a parachute. Test and retest. Falling bodies. Air resistance. High altitudes. Caterpillar Club. Parachutes in Russia. The American parachute army. Paratroop training. The rest of the fighting force. World War II. Smoke jumping. Parachutes and exploration. Parachutes and the weather. Parachute progress. Index.

Note: A non-technical account of the development and use of the parachute from its beginnings in the late eighteenth century to its present military significance in World War II. Based on information obtained from United States Army and Naval air forces and from the Civil Aeronautics Board, and told in "popularized" style for the layman.

ZWENG, CHARLES ALFONSO

Parachute technician. North Hollywood, Calif.: Pan American Navigation Service, 1944. 111 p. illus. 23 cm. \$3.00. 4473

Contents: Parachute construction. The harness. The canopy. The pack. Maintenance. Method of inspection. Pack-carrier assembly inspection. Inspection of harness. Operation of the parachute. The jump. The descent. The landing. Parachute use—general rules. Packing, C.A.R. Jumping, C.A.R. Material and tests, C.A.R. Parachute technician certificates, C.A.R. Parachute loft certificates, C.A.R. Tensile strength of materials. Packing instructions (Irving air chute). Adjusting the harness. Pioneer—special instructions. Examinations, typical C.A.R. Examinations, typical packing. Examinations, typical inspection and maintenance. General review. Nomenclature. Index.

Note: An instruction manual covering the packing and care of parachutes and intended for persons seeking parachute technician ratings and also for ground instructors who desire a guide to the requirements of the Civil Aeronautics Administration for the ratings of parachute rigger, senior parachute rigger, and master of parachute maintenance. The last section of the text contains typical multiple choice examinations covering the Civil Air Regulations on parachute packing procedures, inspection, and maintenance. A series of 35 photographs illustrates the correct method of packing the parachute.

PHOTOGRAPHY

General

ABBOTT, BERENICE

A guide to better photography. New York: Crown Publishers, 1941. 182 p. illus. 26 cm. \$2.00. 4474

Contents (abridged): What is photography? What camera shall I use? Do your own processing. Planning your darkroom. Developing the negative. Analyzing the photograph. Learning to see—the lens—swings. Know your materials. Problems of exposure. Use and misuse of filters. Composition. Enlarging. Finishing the photograph. Portraiture. The miniature camera. Color photography. "Straight" photography. Documentary photography. Standards for photography. Bibliography. Index.

Note: A series of discussions written by a recognized professional photographer and intended for persons seriously interested in photography, particularly amateurs who wish to take up photography as a career. The text is composed mainly of advice and suggestions. Very little reference data are included.

THE AMERICAN ANNUAL OF PHOTOGRAPHY, 1945.

Volume fifty-nine. Boston: American Photographic Publishing Co., 1944. 200 p. illus. 25 cm. Paper, \$1.50; cloth, \$2.25. 1946 4474a

Contents: List of pictorial illustrations. Index to advertisers. Aspects of color, by Lloyd E. Varden. Take it easy! by Eleanor Parke Custis. Teach yourself photography, by Herbert McKay. Photographing dogs and cats in the home, by Jack Wright. How to raise the standards of pictorial photography, by Arthur Hammond. New filter technique in miniature photography, by Carl W. Miller. Light from the sky, by Floyd E. Somerville. Edwin Hale Lincoln, master photographer, by Franklin I. Jordan. Medical photography, by Albert Sadler. Pictorial illustrations. The personal record and its permanence, by Calvin Rutstrum. Photography in the study of design, by L. Moholy-Nagy. Naturalism, by Honess Lee. Our illustrations, by Frank R. Fraprie. Who's who in pictorial photography 1943-1944.

Note: An annual published since 1886. The central portion of this issue consists of 77 full-page reproductions of outstanding photographs of the year. A separate section devotes a paragraph of description, artistic and technical, to each of these photographs. The remainder of the book consists of a dozen articles on various photographic topics, with their own illustrations, and a who's who section of 18 pages. Advertising is inserted but is not included in the main paging.

BARTON, FREDERICK BUSHNELL

Photography as a hobby. With illustrations by Don Wootton. New York: Harper & Brothers, 1939. 144 p. illus. 22 cm. \$2.00. 4475

Contents: Photography can be a thrifty hobby. What kind of camera should you buy? Learn to see pictures. Composition—which gives each picture a point. Lifting your pictures out of the commonplace. Do you need a darkroom? Following through with your large camera. The candid camera; and making enlargements. Color photography. Making better home movies. Night photography, and making pictures by artificial light. Photography for women. Making money with your camera. How to copyright a picture. Tie your camera up to your other hobbies—and your job. Holding down the cost. Keeping your camera out of lawsuits. Help for the asking.

Note: A lightly written book for the amateur photographer and the beginning professional. A valuable feature is the chapter entitled "Help for the asking" which lists the principal manufacturers of photographic equipment in the United States, the principal United States and British periodicals, and includes miscellaneous information such as the five leading textbooks, advice on organizing camera clubs, etc.

BONI, ALBERT

A guide to the literature of photography and related subjects. New York: Morgan and Lester, 1944. 94 p. 20 cm. (Quarterly supplement no. 18 for the Photo-lab-index, the cumulative formulary of standard recommended photographic procedures, by Henry M. Lester) Paper, \$1.00. 4476

Note: Presents 3,000 references to books, pamphlets, monographs, and periodicals, arranged in one alphabetical order by subject entries. There are two entries for most of the subjects, *bibliography* and *general works*. While the list does not attempt to be exhaustive, the scope includes American and foreign works, journals, and other publications, from as far back as 1473 to the present. Many of the references are annotated, particularly those dealing with the history of photography and with classical works, and the contents of some books are also listed. Intended as an insert supplement for Lester's *Photo-lab-index*, New York, 1939 (see Index).

BOUCHER, PAUL EDWARD

Fundamentals of photography, with laboratory experiments. New York: D. Van Nostrand Company, Inc., 1940. 304 p. illus. (part col.) 23 cm. \$3.50. 4477

Contents: Historical development and use of the hand camera. Developers and fixing solutions. Camera lenses and diaphragms. The aberrations of a lens. Camera shutters and shutter-speed measurement. Some properties of the photographic emulsion. The process of development. The control of negative contrast. Printing processes. Printing paper developers. Color characteristics of light filters and films. Enlarging or projecting printing. The preparation of lantern and film slides for projection. Intensification and reduction. Toning and dye staining prints. Color photography. Laboratory experiments. Useful tables. Formulary. Glossary. Index.

Note: This is an elementary college textbook of photography designed to teach the practical methods, as well as their underlying principles, and their applications to obtain good results. The explanations of the various principles of chemistry and physics which govern photographic methods and processes have been written for students who have no previous knowledge of chemistry or physics. Illustrations, which consist of a series of photographs of the same subject, show the effect of varying such factors as the focus of the lens, the color of the filter, the method of development, and various other factors in taking photographs and developing them. A glossary of terms, questions for the students to answer, and a series of laboratory experiments are included in this book.

THE COMPLETE PHOTOGRAPHER; a complete guide to amateur and professional photography; Willard D. Morgan, general editor. New York: National Educational Alliance, Inc., 1942-43. 10 v. illus. (part col.) 25 cm. \$37.50. 4478

Contents (abridged): General introduction: Printing. Development. Enlarging. Films, filters, and exposure. Outdoor photography. Composition. Lighting. Portraiture. Color. Elementary motion pictures: Exposure. Films and filters. Composition. Lighting. Editing. Advanced still photography: Portraiture and posing. Pictorial and composition. Optics. Development. Printing and enlarging. Darkroom. Control methods. Cameras and equipment. Esthetics. Color. Advanced motion picture: Editing. Color. Equipment. Technics. Photography at work: Professional photography. The camera as reporter. Advanced technics. Motion pictures, advanced technics. Specialized photography: Science. Industrial. Miscellaneous. Cameras. Motion pictures. Historical

background: Surveys. Technics. Biographies. Bibliography. Glossary. Index.

Note: This work is a comprehensive encyclopedia of photography, and contains approximately six hundred articles, in alphabetical order, on all phases of still and motion picture photography, including techniques, use of equipment, principles of artistic composition, commercial, scientific, and industrial applications, and a large number of related topics. The work is intended to supply the needs of the beginning amateur as well as the advanced professional. The list of contents given is intended by the editor as a guide in following self-study courses, and the subjects there listed are further broken down into sub-topics and units with references to their location in the encyclopedia. This outline is graded according to elementary, advanced, and specialized material and is of use particularly to the beginner. A large number of reproductions of photographs include about 300 full-page rotogravure reproductions and about seventy prints of color photographs. There are also many reproductions of historic photographs and early daguerreotypes, scientific and medical photographs and microphotographs, journalistic and sociological methods, military and aerial photography, and other subjects. The technical aspects of the motion picture industry receive rather detailed treatment, as well as amateur 8- and 16-millimeter home movies. There are separate indexes in each volume and a master index in volume 10, which also contains a subject bibliography of about 350 titles and a short glossary.

DESCHIN, JACOB

Finding new subjects for your camera. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1939. 239 p. illus. 21 cm. \$2.50. 4479

Contents (abridged): How does your picture grow? Pictures in the streets. The camera in the park. All outdoors your studio. Take your camera to work. Interpreting your home. Storytelling with pictures. Models for the asking. Portrait pointers. Photography for the hobbyist. Shoot yourself. Picture finding in the darkroom. For texture's sake. Pin money with your camera. Index.

Note: Mainly a book of suggestions as to subjects for photography. However, the book also contains considerable information on technique. The treatment is for the advanced amateur and the beginning professional photographer.

DESCHIN, JACOB

Making pictures with the miniature camera, a working manual. New York: McGraw-Hill Book Company, Inc., 1937. 156 p. illus. 23 cm. \$3.00. 4480

Contents (abridged): Introduction to photography. Part I, Taking the picture: A portrait. A group. Action. Nature. A street scene. A landscape. A seascape. A moonlit scene. An industrial scene. An interior. A still life. Sculpture. A copy. Part II, Making the negative: Equipment and facilities. Fine-grain development. Preparations for development. Loading or preparing films. Developing. Stopping development and fixing. Washing. Drying. Storing negatives. Making a copy negative. Part III, Making the picture: Equipment and facilities. Choice of printing paper. Preparations for enlarging or printing. Suiting paper contrast to negative. Enlarging and printing routine. Enlarging miscellany. Development. Stopping development and fixing. Washing and drying. Toning. Final touches. About weights and measures. Glossary of photographic terms.

Note: Provides information that is important in getting better results with any type of miniature camera. Gives practical working directions for posing, composition, lighting, exposure, developing, printing, etc., emphasizing pointers essential to miniature technique. Especially valuable helps on fundamental procedure for each of a variety of most typical picture subjects. Includes a gallery of representative pictures, offering many ideas for the miniature camera fan, with shooting data.

EASTMAN KODAK COMPANY

Abridged scientific publications from the Kodak Research Laboratories. Volume xxv, 1943. Rochester, N.Y.: The Eastman Kodak Company, 1944. 456 p. illus. 24 cm. Paper? 4481

Note: Seventy abridged technical papers on various phases of the theory and practice of photography from the laboratory point of view are contained in the present volume, which is the twenty-fifth in a series of annual compendia of scientific papers issued by the Kodak Research Laboratories. The articles have all been published previously in standard scientific journals and are here given in abridged form with only the more essential features and outlines in each case. Separate author and subject indexes are included.

EASTMAN KODAK COMPANY

How to make good pictures: the complete handbook for the amateur photographer. Rochester, N.Y.: Eastman Kodak Company, 1943. 240 p. illus. (part col.) 20 cm. Board, \$0.50. 4482

Contents: Picture making today. How pictures are made. Choosing a camera. Selecting your film. Pointers for the beginner. Exposures for outdoor pictures (black-and-white). Composition. Picturing children. How to gain interest in pictures. Street scenes and architectural studies. Landscapes. Useful lens accessories. Flower pictures. Outdoor sports pictures. Indoor daytime pictures of people. "Interiors" by daylight. Indoor pictures at night. Outdoor pictures at night. Stunt pictures. Color photography. Developing and printing at home. Formulas.

Note: Presents in simple form the elementary principles of amateur picture-making for the person who wants to secure good snapshots in black-and-white or in color. The theory of photography and technical details in general have been purposely omitted. Several exposure tables and home developing formulas are included, and there are numerous photographic illustrations, some of which are in color.

EASTMAN KODAK COMPANY

Kodak reference handbook. Second edition. Materials, processes, technique. Rochester, N.Y.: Eastman Kodak Company, 1943. 10 parts. illus. 23 cm. \$2.75. 4482a

Contents: Introduction. Kodak publications. Kodak lenses. Kodak film. Filters. Kodachrome and Kodacolor films. Kodak photographic papers. Darkroom design. Processing. Chemicals and formulas. Copying. Slides and transparencies.

Note: A loose leaf handbook especially designed for convenient reference by both amateur and professional photographers. It contains practical recommendations and technical data, determined by the Kodak Research Laboratories, for the use of Kodak materials and apparatus in making still pictures in black and white and in color and in making amateur motion pictures in color. Each section of the book contains its own table of contents, explains the photographic theory necessary to the understanding and use of the various materials and apparatus, offers practical suggestions relative to such use, and supplies pertinent technical data in specification pages and tables. Sections are also available separately as *Kodak data books*, which series also includes two titles not contained in the *Kodak reference handbook: Photography with Kodachrome professional film*, Rochester: Eastman Kodak Company, 1942, 56 p., paper, \$0.35, and *Infrared and ultraviolet photography*, Rochester: Eastman Kodak Company, 1944, 34 p., paper, \$0.25.

FENNER, FRANK, JR.

A glossary for photography, defining over 3,000 words having a photographic significance. Chicago: Ziff-Davis Publishing Company, 1939. 149 p. 17 cm. (Little technical library. 10) \$0.79. 4483

Note: The terms defined in this book include the simplest words as well as the more technical. Still and motion-picture photography in black-and-white and color, photochemistry, standard abbreviations, biographical notes, and terms commonly used in the photomechanical processes are covered.

HENNEY, KEITH, AND BEVERLY DUDLEY, EDITORS.

Handbook of photography. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1939. 871 p. illus. 23 cm. \$7.50. 4484

Contents: Outline of photography, by Keith Henney and Beverly Dudley. The optics of photographic lenses, by R. Kingslake. The development of the photographic objective, by R. Kingslake. Cameras, by Keith Henney. Shutters, by Alan A. Cook. Photographic materials, by Haywood Parker. Photographic sensitometry, by Beverly Dudley. Exposure and exposure devices, by Beverly Dudley and A. T. Williams. Photographic light sources, by Beverly Dudley. Light filters, by Beverly Dudley. Developers and theory of development, by D. R. White and J. R. Weber. Technique of development, by D. R. White and J. R. Weber. Fixing, washing, and drying, by Beverly Dudley. Printing processes, by Keith Henney. Toning, by Donald Burchan and Ira Current. Special printing processes, by Paul L. Anderson. Defects in negatives and prints, by Beverly Dudley. Intensification and reduction, by Beverly Dudley. Darkrooms and darkroom practice, by Keith Henney. Stereoscopic photography, by Vannevar Bush and John T. Rule. Photography by ultraviolet and infrared, by Walter Clark. Color photography, by Olindo O. Ceccarini. Motion-picture photography, by Carl Dreher. Aerial photography, by Leon T. Eliel. Astronomic photography, by Harlan True Stetson. High-speed photography, by Harold E. Edgerton. Microphotography and technical microscopy, by Francis F. Lucas. Geologic photography, by Robert F. Collins. Spectroscopic photography, by G. R. Harrison. Radiography, by Robert C. Woods.

Note: Presents a thorough exposition of the serious aspects of the technique of the photographic process and the scientific basis underlying photography and its applications. While specialists have been selected to write many sections of the book and discussions and data relating to the most technical aspects of photography are made available, at the same time the editors have been careful to preserve a fundamental practical approach to all subjects, so that all photographers, amateur or professional, can find in it information at their level of work.

LESTER, HENRY M.

Photo-lab-index; the cumulative formulary of standard recommended photographic procedures. New York: Morgan & Lester, 1939-40. 2 v. illus. 21 cm. \$14.50. 4485

Contents: Introduction. Agfa formulas. Dassonville formulas. Defender formulas. Dufaycolor formulas. DuPont formulas. Eastman Kodak formulas. Haloid formulas. Film data. Filter data. Illumination data. Photo paper data. Miscellany: weights, measures, conversions. Photographic chemicals.

Note: A collection of technical data on photographic procedures, processing, and materials. It is intended for use in photographic workshops, where it can supplant many miscellaneous pieces of manufacturers' literature. Typical information included are a chart listing the various makes of photographic papers, films, filters, etc., and giving their characteristics from the professional photographer's viewpoint, a chart giving the characteristics of enlarger lamps and flash lamps, and sections of recommended formulae for the processing of photographic materials currently made by most manufacturers in the United States. Supplements are issued four times a year. A new edition was planned for 1945 publication.

LUCAS, JOSEPH ALFRED, AND BEVERLY DUDLEY

Making your photographs effective. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1940. 385 p. illus. 23 cm. \$5.00. 4486

Contents: The camera and photographic equipment. Care and adjustment of photographic equipment. Photographic negative materials. Filters and polarizing screens. Painting with light. Some notes on picturemaking. A place to work. Processing your own films. Fundamentals of contact printing. Special techniques in contact printing. Projection printing. Pointers on various branches of photography. Industrial photography. Some tricks of the trade. Copying and recording. Lantern slides.

Note: A handy, working manual of everyday photography for the professional and amateur alike, discussing fundamental photographic operations from the practical rather than the theoretical or technical side, and containing numerous hints, short cuts, suggestions, how-to-do-it ideas, and examples which the photographer can apply directly to his own work. Illustrated with photographs from many businesses and industries, it gives special attention to actual problems of the photographer.

MACK, JULIAN ELLIS, AND MILES J. MARTIN

The photographic process. New York: Mc-

Graw-Hill Book Company, Inc., 1939. 586 p. illus. (part col.) 25 cm. \$5.00. 4487

Contents: Introduction. Photographic optics. Lenses. Cameras and accessories. The photographic emulsion and the latent image. Exposure and the negative. Development of the negative and auxiliary processes. Color and its influence in photography. Positive prints. Projection printing. Natural-color photography. Scientific and technological photography. Photochemical reproduction. Pictorial photography. Appendix. Mathematics. Formulary. Manual.

Note: A comprehensive treatment of photography, presented simply enough for the student who is not trained in chemistry, yet with sufficient scope and scientific rigor to justify its use in a course in photography at the college level. The details are considered as special examples of the general principles outlined, so that the student, instead of merely learning certain techniques, will be prepared to cope with new photographic problems as they arise.

MEES, CHARLES EDWARD KENNETH

Photography. Second edition, revised. New York: The Macmillan Company, 1942. 227 p. illus. (part col.) 22 cm. \$5.00. 4488

Contents: The history of photography. The manufacture of photographic materials. Modern photographic practice. The formation of the photographic image. Tone values and their reproduction by photography. Motion picture photography. The photography of colored objects. Color photography. Some applications of photography. Index.

Note: A brief but comprehensive study of both the art and the science of photography. The work is not a handbook of photography but rather a non-technical exposition of its beginnings, development, and present stage. Intended mainly for the general reader but of considerable interest to the amateur or professional photographer as well. None of the subjects is treated in any great detail, the main purpose being to present a general review of the whole subject in a simple and popular style. The second edition contains new material on the process of development, the formation of the latent image, and the tri-pack processes of color photography.

MEES, CHARLES EDWARD KENNETH

The theory of the photographic process. New York: The Macmillan Company, 1942. 1124 p. illus. 24 cm. \$12.00. 4489

Contents: The photographic material—light sensitive material—sizes of the silver halide grains—preparation and properties of gelatin. The action of light—sensitivity of the silver halide grains and their response to light—relation between the exposure given to a light-sensitive layer and the density obtained after development—reciprocity, intermittency and Clayden effects—solarization and the Herschel, Sabattier, and Albert effects. Development and the after processes—mechanism of development—developing agents—reactions of development—kinetics of development—free energy and oxidation-reduction potentials of developers—fixation and washing—reduction and intensification—and the technique of sensitometric exposure—measurement of density—measurement of spectral sensitivity—interpretation of sensitometric results. Photographic physics—theory of tone reproduction—physics of the developed image—photographic aspects of sound recording. Optical sensitizing—spectral sensitivity—structure and synthesis of the sensitizing and desensitizing dyes—mechanism of optical sensitizing. Index.

Note: An exhaustive treatment of the subject for students of photography who are well-grounded in mathematics, physics, and chemistry.

MILLER, CARL WALLACE

Principles of photographic reproduction. New York: The Macmillan Company, 1942. 353 p. illus. (part col.) 24 cm. \$4.50. 4490

Contents (abridged): The lens. The image, size, location, and brightness. Supplementary lenses. Perspective. Depth of focus. Arrangement of subject material. Perpetuating the optical image. Exposure. Development. The print. Means for individual control. Platinotype and palladiotype. Bichromated colloid processes. Carbro and bromoil. Transparencies. The spectral sensitivity of emulsions. Use of filters. The visual perception of color. Photographic reproduction of color. The separation negatives. Three-color dye images by imbibition. Pigment printing. Metallic

toners and dye-coupled developers. The precision reproduction of color. Problems. Table of logarithms. Weights and measures. Answers to problems. References. Index.

Note: Although this volume emphasizes the fundamental principles of photography, it is much more than a guide for the amateur. It provides detailed descriptions of important photographic problems, such as depth of focus, exposure, and development, which will be of particular interest to the professional photographer and student. Approximately one-half of the book deals with the principles of color photography.

MORGAN, WILLARD D., AND HENRY M. LESTER

Graphic Graflex photography; the master book for the larger camera, by Willard D. Morgan, Henry M. Lester and thirty contributors. Fifth edition. New York: Morgan & Lester, 1943. 431 p. illus. 26 cm. \$4.00. 4491

Contents: Introduction. Elementary Graflex and speed graphic photography, by Konrad Cramer. Negative exposure and development, by H. P. Rockwell, Jr. How to choose a lens, by R. Kingslake. How to use filters, by John W. McFarlane. A design for printing, by Ansel Adams. Understanding photographic printing, by Martin Vos. Kodachrome photography, by John W. McFarlane. Modern educational photography, by S. B. Zisman. Documentary reproduction, by Vernon D. Tate. Illumination and its control, by D. J. Mohler and R. E. Worstell. How to use a view camera, by Berenice Abbott. Illustrative and advertising photography, by John F. O'Reilly. Publicity photography, by Willard D. Morgan. Following the horses with a camera, by Carl Klein. Photographing the dance, by Barbara Morgan. Aerial photography, by Willard D. Morgan. News and press photography, by Frank Scherschel and Stanley E. Kalish. Photography with special cameras, by J. A. Sprague. Reader interest in news pictures, by Jack M. Willem. Synchroflash photography, by Willard D. Morgan. Science pictures for publication, by Hansel Mieth. Photomicrography with the Graflex, by Julius Weber. Photography of children, by Torkel Korling. The photographic darkroom, by Henry M. Lester. How to use the Graflex and Graphic cameras, by Henry M. Lester. Improved perspective with the Graphic view camera, by F. S. Lincoln. Personnel identification, by J. G. Liccion. Speedlight photography, by H. W. Edgerton, K. J. Germeshausen, and H. E. Grier. Index.

Note: A handbook for amateur and professional users of larger cameras.

MORGAN, WILLARD D., AND HENRY M. LESTER

The Leica manual; a manual for the amateur and professional covering the field of miniature camera photography. Ninth edition. New York: Morgan and Lester, 1943. 550 p. illus. 21 cm. \$4.00. 4492

Contents (abridged): The Leica comes of age. Part I, Basic Leica technique: Leica and its auxiliary equipment. Leica lenses. The 35 mm film—its selection, exposure, and development. Dry hypersensitizing of Leica films. Your own Leica darkroom. Enlarging and contact printing. Enlarging papers and printing. Making Leica positives for projection. Stereoscopic photography. Natural color photography with Kodachrome and wash-off relief prints. Defender Chromatone color printing process. Part II, Leica in science and education: Education through the eye. The Leica in historical research. Archeology and exploration. The miniature camera for miniature monsters. Photomicrography with the Leica camera. Dental photography. The Leica as an ophthalmic camera. Infra-red photography. Part III, The Leica in specialized fields: Candid, stage and news photography. Aerial photography. Exploring with the Leica. Leica photography in the tropics. Photomurals with the Leica. Index.

Note: A manual composed of articles by various contributors. Revision in this ninth edition covers new equipment and techniques which have been developed since the previous edition.

NEBLETTE, CARROLL BERNARD, AND OTHERS

Photography, its principles and practice. Fourth edition. With chapters by Ralph H. Braden, Howard C. Colton, Silas M. Thronson, and J. W. Gillon. New York City: D. Van Nostrand Company, Inc., 1942. 865 p. illus. (part col.) 24 cm. \$7.50. 4493

Contents: History of photography. Photographic optics. The photographic objective. The camera and accessories. Light sources for photography. Introduction to photochemistry. The photographic emulsion. Color sensitizing dyes for photographic emulsions. The latent photographic image and its development. Developing agents and solutions. Fixing, washing and drying. The structure of the photographic image. Photographic sensitometry. The reproduction of tone. The reproduction of color in monochrome. Negative materials. The exposure of the negative. Negative development. Defects in negatives. Reproduction and intensification of the negative. After work on the negative. Developing-out papers. Contact and projection printing. Toning of developed silver images. Bichromated-colloid processes. Platinum, palladium, iron and plan-copying processes. Finishing and mounting the print. Lantern slides and transparencies. Principles of three-color photography. Three-color negative making. Subtractive paper printing processes. Screen and lenticular processes. Integral tripacks. Accuracy of color reproduction. Index.

Note: This large reference manual gives the details of photographic processes and equipment in light of the basic scientific principles. The operation of lenses, and their selection and use, are discussed from the standpoint of optical principles, while the sensitizing of film to light of different colors is explained in terms of the chemical constitution of the various sensitizing dyes. This plan of combining scientific principles and practical details is continued throughout the book in the detailed accounts of the various photographic processes, which include methods used by the amateur photographer, by the scientist, and by the commercial printer, engraver, and lithographer, both in one-color and in multicolor photography.

QUARLES, GILFORD GODFREY

Elementary photography. New York: McGraw-Hill Book Company, Inc., 1940. 350 p. illus. 23 cm. \$3.00. 4494

Contents: Introduction. Historical background. Elementary photographic optics. Aberrations in lenses. Camera parts and accessories. Cameras and camera testing. Film sensitivity and exposure. Development of negatives. Fixing and washing of negatives. Contact printing. Photography of colored objects. Photography of moving objects. Photography by artificial light. Negative troubles. Reduction and intensification. Projection printing. Composition. Projection control. Finishing the print. Picture-making with paper negatives. Toning of prints. Coloring of photographic prints. Natural-color photography. Lantern slides and transparencies.

Note: A text on photography which is intermediate in difficulty between very elementary ones and those of an advanced, technical nature. It assumes no previous knowledge of the subject, and follows what the author believes to be the normal order of learning rather than the normal order of the photographic process.

ROEBUCK, JOHN RANSOM, AND HENRY C. STAEHLE

Photography, its science and practice. New York: D. Appleton-Century Company, Incorporated, 1942. 283 p. illus. 22 cm. \$5.00. 4494a

Contents (abridged): Historical development. The photographic emulsion. Properties of photographic materials—exposure and development. Color sensitivity. Chemistry of the photographic process. Theory of the latent image. Positive processes. Lenses. Color photography. Good pictures. Laboratory manual. General bibliography. Index.

Note: The theory of photography is stressed in this book for students and photographers, but practice occupies approximately one third of the book. Relatively non-technical in presentation with minimum use made of mathematics and chemistry. Bibliographies are given at the ends of most chapters.

TAFT, ROBERT

Photography and the American scene, a social history, 1839-1889. New York: The Macmillan Company, 1938. 546 p. illus. 26 cm. \$3.95. 4495

Contents: "Their exquisite perfection almost transcends the bounds of sober belief." First portraits and first galleries. The era of the daguerreotypes and the public. Daguerreotypy at its zenith. Photography. The ambrotype. The family album. The tintype. The stereoscope. "Boston as the eagle and the wild goose see it." Real amateurs. Civil War photographers. Photographing

the frontier. The cabinet photograph. Kurtz, Sarony and Mora. A new age. The flexible film. Zoopraxiscope and less wordy innovations. Photography and the pictorial press. Appendix. Bibliography and notes. Indexes.

Note: An attractively illustrated history of photography in America, presenting at the same time a history of the social scene during the period indicated. An attempt is made to trace the effects of photography upon the social history of America, and in turn the effects of social life upon the progress of photography. The work is written primarily for the layman but is of value to the historian and the professional photographer as well. The photographs have been chosen both to illustrate important photographic processes and to show American personalities, events, and scenes recorded by photography. The reproductions of early daguerreotypes and photographs of pre-Civil War vintage are particularly interesting. The work is fully annotated with references to American and foreign newspapers and journals. Many of the photographs are here reproduced for the first time.

UNITED STATES. WAR DEPARTMENT

Basic photography, prepared under the direction of the Chief of the Air Corps. War Department Technical manual no. 1-219. War Department July 1, 1941. Washington, D.C.: United States Government Printing Office, 1941. 342 p. illus. 23 cm. Paper, \$0.50. 4496

Contents (abridged): Elementary photography. Chemistry. Sensitized materials. Optics. Filters. Sensitometry. Ground camera photography. Negative making. Printing. Copying. Lantern slides and film slides. Color photography. Laboratory operations. Appendixes: Formulary. List of chemicals. Tables used in photography. Glossary of terms. Index.

Note: Simply written but detailed description of the physics and chemistry of photography and directions for taking pictures, developing films, making prints, and using mechanical devices in the photographic laboratory.

WALL, EDWARD JOHN, AND FRANKLIN I. JORDAN

Photographic facts and formulas, by E. J. Wall; revised and largely rewritten by Franklin I. Jordan. Boston: American Photographic Publishing Co., 1940. 384 p. illus. 24 cm. \$3.00. 4496a

Contents: Preface. Optics. Exposure. Development. Fixing, washing, and drying negatives. Defects in negatives. Duplicating negatives. Intensification. Reduction. Projection printing. Developing-out papers. Toning. Silver printing-out papers. The iron processes. Oil, bromoil, and transfer. Gum-bichromate printing. The carbon processes. Miscellaneous printing processes. Photomechanical processes. Stereoscopic photography. Lantern slides. Copying. Color photography. Studio and darkroom helps. Weights and measures. Chemical tables. Index.

Note: This volume is intended as a working guide to practical photographers, and contains in accessible form working directions and formulas for all the most commonly used photographic processes. It does not attempt to impart the scientific background information available in other standard works. The present volume was almost entirely rewritten to bring up to date the 1924 edition of the same title by E. J. Wall, itself a revision of earlier works by Arthur D. Godbold and H. Snowden Ward.

Special Aspects

ANDERSON, PAUL LEWIS

The technique of pictorial photography. With 28 illustrations and 31 diagrams. Philadelphia: J. B. Lippincott Company, 1939. 403 p. illus. 22 cm. \$3.75. 4497

Contents: Part I, Apparatus: The camera. The lens. Plates—films—ray-filters. Exposure and development. Miscellaneous apparatus. Part II, Negative modifications: Manipulation of negatives. Enlarging. Part III, Printing methods: The ideal medium. Discussion of various mediums. Technique of platinum. Technique of carbon. Technique of carbo. Technique of fresson.

Technique of gum. Technique of gum-palladium. Technique of oil and bromoil and of transferring. Technique of photogravure. Part IV, Color: Desirability of color in photography. Color photography in practice. Part V, Miscellaneous: Photography by artificial light. Motion picture photography. Conclusion. Technical and other data on the pictorial illustrations. Index.

Note: An extensive revision and enlargement of the author's earlier work, *Pictorial photography, its principles and practice*, Philadelphia, 1923. The present work is meant for those amateur and professional photographers who, without wishing to undertake a study of the abstract principles of art, nevertheless wish to study the fundamental principles of pictorial art as expressed in photography. The work discusses only photographic techniques and theory of value to the worker who uses photography as a medium of fine art expression.

BAILEY, HILLARY G.

Indoor photography. Chicago: Ziff-Davis Publishing Company, 1940. 94 p. illus. 17 cm. (Little technical library) \$0.79. 4498

Contents: Pictures which can be made indoors. The choice of a camera. The type of light to use. The kind of film to use. Proper exposures indoors. Where to put the lights. Where to put the subject. How to pose the subject.

Note: The present booklet is intended for the amateur, and presents easily-followed instructions for all steps in making indoor pictures. The problems of adjusting lights and placing the subject for portrait or still life are discussed and illustrated with diagrams and photographs.

BROWN, ROBERT WINFIELD

Taking pictures at night. Chicago: Ziff-Davis Publishing Company, 1941. 96 p. illus. 17 cm. (Little technical library) \$0.79. 4499

Contents: Cameras and equipment. Lighting and exposure. What to shoot at night. Other subjects: animals, rain, and snow. Night photography in natural color. Faking night pictures. Developing and printing. Do's and don'ts of night photography.

Note: A brief manual for beginners in the field of night photography, and for those who have made a start but want to know something more about equipment, possibilities, technique, and dark-room procedure. Among the topics discussed are the taking of pictures by moonlight, how to use lighted street lamps in pictures, how to simulate night pictures, combination exposures, and pictures of stage performances.

BROWNELL, LEVERETT WHITE

Natural history with a camera. Boston: American Photographic Publishing Company, 1942. 292 p. illus. 24 cm. \$3.75. 4500

Note: This book is written for amateur and professional photographers interested in taking nature photographs. However, the main emphasis is not on photographic techniques, but on objects in nature which will interest photographers. The book is arranged by month, and under each month are discussed wild flowers, birds, and small animals from the viewpoint of their pictorial interest. The book is illustrated with photographs made by the author. It is indexed.

CLARK, WALTER

Photography by infrared; its principles and applications. New York: John Wiley & Sons, Inc., 1939. 397 p. illus. 24 cm. \$5.00. 4500a

Contents: The subject. The general practice of infrared photography. Photographic darkroom practice. Characteristics of photographic materials. Photographic sensitizing for the infrared. The Herschel effect and indirect methods of infrared photography. Sources of infrared radiation. Examination and differentiation of materials by infrared. Medical infrared photography. Infrared photography applied to botany and paleontology. Infrared photomicrography. Special applications of infrared photography. Measurement of infrared radiation by photographic means. Penetration of radiation through the atmosphere: general and theoretical. Penetration of radiation through fog and haze: practical observations. Optical characteristics of materials in the infrared. Appendixes: Infrared materials available commercially. Weights and measures—conversion tables. Formulae for photographic processing solutions. Name index. Subject index.

Note: A treatment of the subject intended for practical photographers including photographers who specialize in scientific and

technical photography. The author has assumed that his readers will be acquainted with ordinary photography, and therefore has devoted his text to the special techniques and uses of infrared. Theoretical principles are discussed simply and the practical part of the text can be understood by anyone with a good practical knowledge of photographic principles. Although the book is intended chiefly for the working photographer, it is also an excellent summary of the knowledge of the subject and therefore will interest scientists doing research in this field. The literature of the subject is cited in extensive bibliographies appended to the chapters.

CRABTREE, JOHN ICKERINGILL, AND G. E. MATTHEWS

Photographic chemicals and solutions. Boston: American Photographic Publishing Co., 1939. 368 p. illus. 24 cm. \$4.00. 4501

Contents: Terminology and arrangement of photographic formulas. Photographic arithmetic and conversion of formulas. Apparatus and methods of use. Materials for construction of photographic processing apparatus. Temperature measurement and control. Effect of the water supply on photographic solutions. Technique of mixing and using photographic solutions. Handling solutions at high temperatures. Storage and transportation of chemicals and solutions. Substitution of chemicals. Stains on negatives and prints. Cleaning photographic processing apparatus and removal of stains from the hands and clothing. General suggestions and precautions on handling photographic chemicals. Appendix. Index of formulas by purpose. Subject index.

Note: A technical manual and reference book on the properties of photographic solutions and their applications to the problems of the amateur and professional darkroom. The material is also of use to scientific investigators, X-ray workers, photofinishers, photo-mechanics, and motion-picture film technicians. A large number of formulas, each for a specific photographic purpose, are included in the text, based on knowledge acquired during the author's 25 years of experience in the Eastman Kodak Research Laboratories.

DE PALMA, VICTOR

Photographing action. Chicago: Ziff-Davis Publishing Company, 1940. 110 p. illus. 17 cm. (Little technical library) \$0.79. 4502

Contents: Action photography. Equipment. Stopping motion. Ordinary action outdoors. Action indoors. Outdoor sports. Indoor sports. Special fields. Darkroom problems. Ultra high-speed action.

Note: An introductory manual for the amateur, describing in simple terms how to get sharp action pictures with much lower speeds than is usually thought possible, involving exposures at intervals of arrested motion which occur in many types of action. Minimum exposure tables and darkroom tips are also included.

DE SOLA, RALPH

Microfilming. New York: Essential Books, 1944. 258 p. illus. 16 cm. \$1.50. 4503

Contents: What is microfilming? Highlights of microphotographic history. Uses and advantages of microfilming. Microfilm cameras. Processing microfilm. Printing microfilm. Enlarging microfilm. Photochemical formulary and microfilm standards. Reading and filing microfilm. Glossary of technical and trade terms. Index.

Note: A book of instructions in non-technical language on the use and advantages of microfilm cameras, prefaced by a brief history of the subject. Exact details of photographing, developing, printing, and enlarging are given, together with a photochemical formulary and microfilm standards. A forty-five page glossary is appended.

DOBBS, WALLACE E., AND CHARLES A. SAVAGE

Your camera and how it works. With a foreword by C. B. Neblette. Chicago: Ziff-Davis Publishing Company, 1939. 130 p. illus. 17 cm. (Little technical library) \$0.79. 4504

Contents: Buying your camera. How a camera works. Focusing and composing the picture. About the lens. The special lenses. How shutters work. Roll film translators. Cut film and film-

packs. Making an exposure. Other camera problems and accessories. Filters, and when to use them. What is wrong with my camera?

Note: Tells the amateur how to select a camera and accessories, how to get the best pictures possible with the available equipment. The text is presented in simple, non-technical style and is illustrated with numerous drawings and photographs.

DRAPER, ERNEST E., AND NORRIS HARKNESS

Negative retouching and print finishing. Chicago: Ziff-Davis Publishing Company, 1941. 103 p. illus. 17 cm. (Little technical library) \$0.79. 4505

Contents: The negative. Negative retouching. The print. Hand coloring. Mounting. The title. Novelties.

Note: Discusses ways of improving photographs after they have been taken and the negative developed. Covers such subjects as print spotting, toning, staining, making of greeting cards, bookplates, and related topics. Most of the processes presented are very simple and the others can be mastered by the amateur after a few trials.

EASTMAN KODAK COMPANY

Elementary photographic chemistry. Rochester, N.Y.: Eastman Kodak Company, 1941. 160 p. 22 cm. \$1.00. 4506

Contents: An outline of elementary chemistry. The chemistry of photographic materials. The chemistry of development. The chemistry of fixation. The chemistry of washing. The chemistry of reduction and intensification. The chemistry of toning. Preparing solutions. Using solutions. Formulas. Indexes and tables.

Note: Outlines briefly the elements of chemistry which are fundamental to the photographic process. Intended for the practical photographer, the work gives information about photographic chemicals which is necessary for their intelligent use, together with tables of solubilities of the chemicals in common photographic use and other practical information on preparing and using photographic solutions. Eastman preparations are of necessity described and discussed.

EASTMAN KODAK COMPANY

Wratten light filters. Seventeenth edition, revised. Rochester, N.Y.: Eastman Kodak Company, 1944. 86 p. illus. 22 cm. Paper, \$0.50. 4508

Contents (abridged): Ordering filters. The care of filters. Filter sets for commercial and scientific uses. Tables. Neutral density filters and wedges. Multiplying factors of filters. Sensitizing classes and types. Wedge spectrograms. Mercury spectrum. List of filters. Spectrophotometric absorption curves of Wratten filters. Absorptions of certain pairs of filters. Infrared absorption spectra. Percentage transmission of Wratten filters.

Note: The seventeenth edition of this booklet includes several new spectrophotometric curves for certain types of Wratten filters, together with five new filters for special printing, fluorescent process, photocell compensation, and blood analysis. Manufacturer's specifications and performance data are included.

FEATHERSTONHAUGH, DUANE

Press photography with the miniature camera. Illustrations by the author. Boston, Mass.: American Photographic Publishing Company, 1939. 159 p. illus. 20 cm. \$2.00. 4509

Contents: Introduction. The miniature camera's place in the field. Cameras. Equipment. Exposure. Processing. Subjects. Taking the picture. Selling the picture. The staff photographer. Specialties. Ethics.

Note: A short, unindexed book primarily for working press photographers. The book includes also information valuable to amateur users of miniature cameras.

FRAPRIE, FRANK ROY, EDITOR

How to choose and use a lens. Fifth edition revised and enlarged. Boston, Mass.: American Photographic Publishing Company, 1937. 96 p.

19 cm. (Practical photography. No. 3) Paper, \$0.50. 4510

Note: This pamphlet is designed to aid the advanced amateur in the selection and use of camera lenses. Both American and foreign lenses are discussed.

FUSSLER, HERMAN HOWE

Photographic reproduction for libraries, a study of administrative problems. Chicago, Ill.: The University of Chicago Press, 1942. 218 p. illus. 23 cm. \$3.00. 4511

Contents: Part I, The bibliographic aspects of the problem: Introduction. The place of microfilming in library work. Photographic reproduction and national resources for research. The administrative integration of the service with the institution. The place of the photographic service in the library organization. The care and administration of microfilm collections. Part II, The technical aspects of the problem: The arrangement and construction of the laboratory. Microphotographic equipment for library use. The equipment of the laboratory. Administrative problems of the photographic service. Photographic methods of reproduction other than microphotography. Conclusion. Appendixes: Selected bibliography. A selected list of sources of equipment and supplies for photographic reproduction. Index.

Note: This book discusses both the use of microfilm in libraries and the technical aspects of the making and using of microfilm. The viewpoint throughout is that of the library administrator. The problems discussed are directly related to university libraries, although in most cases the discussion is applicable also to other types of large libraries. A number of illustrations of equipment are included. The second appendix lists United States manufacturers of film and equipment used in the making and reading of microfilm.

GRABBE, PAUL, AND JOSEPH E. SHERMAN

Outdoors with the camera. New York: Harper and Brothers, 1941. 104 p. illus. 22 cm. \$2.50. 4511a

Contents: Setting the camera for action. Solving some everyday camera problems. Exercising your powers of selection. Handling special camera problems. Winding up in the darkroom. Index and suggested reading.

Note: This book for the amateur photographer tells in simple language how to take good pictures. It considers such points as how to buy a camera and other photographic equipment, how to select suitable subjects, and how to develop film. It has many illustrations. A list of more advanced books for further reading is found at the back of the book.

GREENLEAF, ALLEN R.

Chemistry for photographers. Boston, Mass.: American Photographic Publishing Co., 1941. 189 p. illus. 20 cm. \$2.00. 4511b

Contents: Definitions of chemical terms. Emulsions. Reducing agents and developers. Development procedure. Special development methods. Desensitizers. Hardening, fixing, washing. Fog and stains. Intensification and reduction. Reversal processing. Silver halide positive processes. Toning. The dichromated colloid reaction. Iron printing processes. Various reactions. Darkroom procedure and equipment. Weights and measures. Formulary. Index.

Note: This reference guide is not intended as an exhaustive treatise but rather as a summary of the minimum chemical information required by the photographer for an intelligent understanding of his work. The procedure is to indicate the basic chemical principles involved in the most important photographic processes, and to mention briefly some of the methods by which these principles are applied to photographic science. The explanations are made clear enough for the beginner but are not oversimplified. The formulary contains 71 formulas for developers, hardeners, intensifiers, toners, and fixing-baths.

HARKNESS, NORRIS, AND ERNEST E. DRAPER

Table top photography. New York: Harcourt, Brace and Company, 1940. 180 p. illus. 24 cm. \$2.95. 4512

Contents: Table top's opportunities. Photographic equipment. Fundamentals of composition in pictorialism. The simpler picture. Fundamentals of more ambitious pictures. Backgrounds. Small

details. Let's do one. Hints for the model builder. Movies in table top. Notes on the plates. Index.

Note: A practical guide to the art of making and taking table top photographs. The text is supplemented by numerous pictures and diagrams, illustrating the various steps in setting up a scene and the final result.

HEILBRON, KENNETH

Composition for the amateur. Chicago: Ziff-Davis Publishing Company, 1939. 93 p. illus. 17 cm. (Little technical library) \$0.79. 4513

Contents: The modern problem. To get acquainted. Joining subject and picture. The subject. The eye travels. The picture as a whole. Masses and accents. Tone. Lines and rhythm. Suggestion. The combination print. The controls.

Note: A beginner's manual on the arrangement of subject matter in order to produce pleasing photographs. Tells how to balance lines and masses, lights and shadows, and how to choose the proper viewpoint and thus place the picture elements where they are desired. There are a large number of full-page photographs by the author.

LAMBERT, HAROLD

Child photography. Chicago: Ziff-Davis Publishing Company, 1939. 94 p. illus. 17 cm. (Little technical library) \$0.79. 4514

Contents: Cameras and equipment. The child before the camera. Taking the shot. Candid shots, portraits, picture-stories, specialties. Finishing and processing. The child in natural color. Do's and don'ts of child photography.

Note: A special feature of this brief manual for the amateur is the large number of reproductions of the author's photographs, which are an important addition to the text. Examples of lighting and posing are discussed, diagrammed, and illustrated, and a large number of helpful hints are provided.

LOOTENS, JOSEPH GHISLAIN

Lootens on photographic enlarging and print quality. All photographs by the author. Baltimore, Md.: The Camera, 1944. 258 p. illus. 22 cm. \$3.50. 4515

Contents: In the beginning—how to get the proper negative. The enlarger. Choosing the right paper for the negative. The paper developer. More about developers. Fixing, washing, and drying. The test strip and how to use it—determining the proper negative for your equipment. The test strip—determining the proper contrast grade of paper for your negatives. Dodging and printing-in. Flashing for tone control. Chemical reduction. Print intensification. Combination printing. Photomontage. Photographic border printing. Retouching with new coccine. Pictures to make you think. Choosing the paper for your subject matter. Blue and brown toning. Formulary. Print quality questionnaire. Index.

Note: A manual intended to show the average photographer how to gain the optimum qualities of detail, contrast, tone, texture, and dramatization in enlargements from various types of negatives. Technical data on exposure, grade of paper, and development are given for all of the specimen enlargements used as illustrations, and various methods of montage, dodging, masking, retouching, and intensification are outlined.

McKAY, HERBERT COUCHMAN

The photographic negative. Chicago, Ill.: Ziff-Davis Publishing Company, 1942. 4 v. illus. 17 cm. (Little technical library) \$3.25. 4516

Contents: Volume 1. The film emulsion. Development of the image. Darkroom design, equipment, and technique. Volume 2. Developing the negative. Special methods in development. Hardening, fixing, washing, and drying. Volume 3. Chemical after-treatment. Characteristics of the negative. Sensitometry. Volume 4. Special methods. Darkroom chemistry. Negative faults.

Note: For the beginner in professional photography and the advanced amateur. The treatment is designed for persons who have had no formal training in physics, chemistry, or mathematics. Nevertheless, the author succeeds in conveying the fundamental theory of many photographic processes. Throughout the work the discussion is closely related to practice.

MORRIS, PERCY A.

Nature photography around the year. New York: D. Appleton-Century Company, Incorporated, 1938. 251 p. illus. 22 cm. \$4.00. 4517

Note: This book attempts to list in chronological order some of the commoner photographic subjects to watch for throughout the year, together with a few suggestions on equipment and technique. The data given for flowering, nesting, and migration apply particularly to southern New England and the New York area but may be adapted for use in the Northeast as well. The work is intended for the large group of nature lovers who have had little or no experience with a camera, and for the experienced photographer who has had little training in natural history. There are about 500 reproductions of nature photographs and the descriptive text is arranged in order of month, beginning with March and ending with February. There is a short bibliography of related books for the layman, covering plants, animals, and photography.

MORTENSEN, WILLIAM

Flash in modern photography. Supplementary notes by Don M. Paul. San Francisco, Calif.: Camera Craft Publishing Company, 1941. 208 p. illus. 24 cm. \$4.00. 4518

Contents: Construction of the flash bulb. The behavior of flash bulbs. The problem of synchronization. The problem of exposure with flash. Sentimental record. Portraiture with flash. Sun-plus-flash. Landscape and architecture. Introduction to professional flash. Documentary photography. Press photography. Blackout flash photography. Police photography. The movie still photographer. Radio publicity photography. Aviation flash photography. Clinical flash photography. And in conclusion. Appendix.

Note: An extensive discussion of photographic technique when flash lamps are used as the sole illumination or as supplementary illumination. The book is mainly for professional photographers, but there is considerable information in it useful to the amateur as well. The illustrations include a number of remarkable photographs made with flash lamps.

MORTENSEN, WILLIAM

Mortensen on the negative. New York: Simon and Schuster, 1940. 283 p. illus. 25 cm. \$4.00. 4519

Contents (abridged): Part one, Equipment and materials. Part two, Optics. Part three, Sensitometry. Part four, The nine negatives.

Note: This book is for the advanced amateur. It is written in lively style and includes much information which is not often found in books for amateurs. The author endeavors first to tell his readers how to recognize a good negative, and second how to produce such negatives. He urges that the photographer keep his equipment and methods as simple as possible. The book has no index.

MORTENSEN, WILLIAM

Outdoor portraiture; problems of face and figure in natural environment. San Francisco: Camera Craft Publishing Company, 1940. 142 p. illus. 25 cm. \$2.75. 4520

Contents: Foreword. Introduction. Equipment for outdoor portraiture. The general problems of outdoor portraiture. Handling the camera. Lighting. Backgrounds. Arrangement of material. Four common problems.

Note: Designed to give advice to both the beginner and the advanced student on the making of portraits outdoors. The errors made by amateurs in this type of photography are indicated, and means of avoiding them are discussed. The author seeks to educate the photographer to self-criticism, and to assist him in producing good pictures which are also good records of particular occasions.

MORTENSEN, WILLIAM

Pictorial lighting. San Francisco, Calif.: Camera Craft Publishing Company, 1938. 115 p. illus. 24 cm. \$2.00. 4521

Contents: Foreword. Introduction. Equipment. Two modes of representation. The basic light and contour light. Lighting and exposure. The semi-silhouette light. The dynamic light and plastic light. The five lights: a summary. Outdoor lighting. High key and low key. Lighting practice. Appendices: Other lighting methods. Technical notes. The modified basic light.

Note: A presentation of a simplified system of lighting giving a wide range of expression with a minimum number of units. It is adaptable to the uses of both the professional and amateur photographer. The system does not aim at freak or startling results, but at making the most of photography's unique capacities and observing its limitations. Emphasis is placed upon light as something to see by rather than as a means of telling a story or stirring an emotion.

MORTENSEN, WILLIAM

Print finishing. San Francisco, Calif.: Camera Craft Publishing Company, 1940. 127 p. illus. 25 cm. \$2.50. 4522

Contents: Introduction. Part I, Preparation: Printing papers. Drying. Flattening the print. Part II, Methods of print control: Preliminaries. Use of the powder tone. Use of the carbon pencil. Use of the blade. Use of the spotting brush. Limitations on use of abrasion-tone. Other applications of abrasion-tone. Last words. Part III, Presentation: A note on showmanship. Trimming and cropping. Mounting. Signatures and titles. Framing. Prints for salons. Appendixes: Abrasion-tone and the texture matrix. Black borders by projection.

Note: A discussion of an important phase in the making of a photographic print, that of finishing. The author discusses the mechanical procedures of preparation, upon which the entire finishing is based, and then proceeds to elaborate his "abrasion-tone process." This is a method for eliminating the small flaws that are apt to appear in the unfinished print, and is developed by the refinement and extension of well-known procedures. Another section deals with the mounting, framing, titling, and signing of prints.

PILLSBURY, ARTHUR CLARENCE

Picturing miracles of plant and animal life. With 66 illustrations. Philadelphia: J. B. Lippincott Company, 1937. 236 p. illus. 21 cm. \$3.00. 4523

Contents: Introduction. Lapse-time photography. Flowers. Pollenization. First steps in microscopic motion photography. Microscopic motion photography. Cactus and succulents. The leaf. Bread mold. X-ray motion pictures. Under-sea photography. Marine life. A traveling camera. The fly. Technicolor and other methods. Chemical farming.

Note: An exposition for the advanced nature photographer by a mechanical engineer whose life work became the picturing of plant and animal life and their movements. The 66 illustrations and photographs show the author's equipment and include examples of his work. The last chapter tells of the author's experiences in growing plants without soil or cultivation. The book has no index.

ROCKWELL, HARVEY P., JR.

Manual of correct exposure. Chicago: Ziff-Davis Publishing Company, 1941. 135 p. illus. 17 cm. (Little technical library) \$0.79. 4524

Contents: Camera settings simplified. Substitute measurements for judgment. The science of exposure. Exposing color transparencies. The art of exposure. Color separation negatives. Exposure technique. References.

Note: Intended to answer the questions that most camera owners ask about photographic exposure, and based upon a collection of several hundred such questions raised by amateur and professional photographers. The present treatment is restricted largely to those phases that deal with the making of the negative, rather than the more technical considerations. The use of exposure meters is described, both for the taking of pictures and the determination of contact printing or enlarging times.

ROSS, KIP

Night photography with the miniature camera. Canton, O.: Fomo Publishing Co., 1937. 68 p. illus. 17 cm. Paper, \$0.75. 4525

Contents: Introduction. Night photography. Equipment for night photography. Street life at night. Night scenes and architecture. Film and exposure for night photography. Dawn and dusk photography. Development. Making the enlargement. Flash-light photography.

Note: Designed to arouse interest in the possibilities of night photography and to offer advice on its successful practice. The technical aspects are discussed, including equipment, settings, taking the picture, developing, and enlarging. Illustrations of the author's work, giving conditions and equipment used, are employed to illustrate points in the text.

ST. CLAIR, RICHARD W.

Photographic lenses and shutters. Chicago: Ziff-Davis Publishing Company, 1940. 159 p. illus. 17 cm. (Little technical library) \$0.79. 4526

Contents: The camera and its lens. Simple lenses. Lens measurements. The aperture or diaphragm. Lens aberrations. Photographic lenses. Auxiliary lenses. Care of lenses and shutters. Testing lenses. Enlarger and projector lenses. Shutters. Useful tables. Index.

Note: Concise information for the serious amateur who lacks a technical education. The text is written to impart technical knowledge, but the author has avoided computations that involve mathematics higher than simple arithmetic.

SEYMOUR, MAURICE, AND SYD SYMONS

Home portraiture and make-up. Chicago: Ziff-Davis Publishing Company, 1939. 110 p. illus. 17 cm. (Little technical library) \$0.79. 4527

Contents: The tools. The photography. About artificial lighting. Placing the lights. Placing the camera. Your model and you. Posing the head. Posing the body. Backgrounds and properties. In sunlight. A few suggestions. The initial perception. Learning the scales. The foundation. Restyling contour. Restyling eyes. Powdering. Restyling eyebrows. Restyling lips. The finishing touches. Working with men. Equipment. Character make-up.

Note: The material presented in this handbook goes somewhat farther than "home" applications, verging on the semi-professional and professional field. Details of lighting, posing, camera angles, and equipment are given in the first part of the book; the subject of make-up for portraiture is discussed and illustrated in the second part.

SHANK, W. BRADFORD

Filters and their uses. Chicago: Ziff-Davis Publishing Company, 1939. 95 p. illus. (part col.) 17 cm. (Little technical library) \$0.79. 4528

Contents: Light. Sensitivity of film. Filters. Some applications. Contrast filters. Filters for special purposes. Types and care of filters. Infra-red photography. Ultra-violet photography. Polarizing screens. Color separation. The lens shade.

Note: Covers all types and kinds of filters, their effects on different films, and the changes they make in the final picture. Described in terms understandable to the amateur and illustrated with many charts, diagrams, and photographs.

SHIRAS, GEORGE

Hunting wild life with camera and flash-light; a record of sixty-five years' visits to the woods and waters of North America. With 950 photographs by the author. Second edition. Washington, D.C.: National Geographic Society, 1936. 2 v. illus. 26 cm. \$5.00. 4528a

Contents (abridged): Volume I, Lake Superior region: The author begins wild-life photography and invents photography of wild animals by flashlight. The author invents automatic photography by daylight and flashlight. Some birds of northern Michigan. Wild animals about Whitefish Lake camp. Three expeditions to the Wanapitei district in Ontario. Northeastern Minnesota and adjacent Ontario. Isle Royale and St. Ignace, Michigan deer. Grand Island as an experimental game preserve. Salt licks. Timber wolf, coyote, and black bear in northern Michigan. Photographing

mink, skunk, weasel, lynx, and wildcat. Beavers and muskrats about Whitefish Lake. Albino and other porcupines. Permanent wilderness camps. Some game laws, past and present. Volume II, Wild life of coasts, islands, and mountains: Author's visits to Newfoundland. Photographing moose in the wilderness of New Brunswick. Birds of the nation's capital. Eastern Shore of Virginia. Wild fowl on Currituck Sound of North Carolina. Experiences among the wild life of Florida. A visit to the Bahama Islands. Wild fowl and animal life of the Louisiana marshes. Gatun Lake, Canal Zone. Yellowstone National Park region. The author discovers a new moose in the wilderness of the upper Yellowstone. Photographing the white sheep of the Kenai. Hunting great brown bears in Alaska. Indexes.

Note: Largely a revision of the author's illustrated articles which have appeared from time to time in the *National Geographic magazine*, these volumes present photographs of wild life, most of them taken at night by synchronized flashlight operated by threads tripped by the animals themselves. There is a descriptive text. The page format is identical with that of the *National Geographic magazine*.

SQUIRE, LORENE

Wildfowling with a camera. Philadelphia: J. B. Lippincott Company, 1938. 262 p. illus. 30 cm. \$7.50. 4529

Contents: I take pictures of ducks. Calendar of a prairie slough. Birds of the water's edge. Geese. Northern summer. Fall flight.

Note: A book of photographs of wild ducks, geese, and other birds of the water's edge, mainly in flight. The emphasis in all of the pictures reproduced in this volume is upon artistic composition and setting, rather than upon scientific detail. Owing to a number of reasons, including use of telephoto lenses, varying conditions of light, and intentional use of soft-focus photography, the images are not as a rule very sharp, but the pattern of bird flight, with its beauty and motion, is expressively recorded.

WHITE, STEPHEN

Manual of enlarging. Chicago: Ziff-Davis Publishing Company, 1940. 95 p. illus. 17 cm. (Little technical library) \$0.79. 4530

Contents: Introduction. The enlarger. The darkroom and enlarging equipment. Making the enlargement. Exposure and development. Control and manipulations. Special procedures. Toning. Finishing. Trouble shooting and general hints.

Note: A book of standard working methods and time-tested formulas designed for the amateur photographer. Many practical hints and suggestions based on the author's personal experience are included.

Color Photography

BOND, FRED

Kodachrome and Kodacolor from all angles. All illustrations by the author, except where otherwise designated. San Francisco: Camera Craft Publishing Company, 1942. 232 p. illus. (part col.) 28 cm. \$6.50. 4531

Contents: Color and art. Some characteristics of color. Color composition. Value characteristics of color. Sunlight characteristics. Outdoor exposure calculations. Kodachrome by artificial light. Kodachrome and photoflash. Reflectors and diffusers. Landscape problems in Kodachrome. Portraits, costume studies, still life. Photographing flowers and gardens. Sunsets, special effects, trick shots. Better movies in Kodachrome. The new medium of Kodacolor. Color correction filters, color meters. Checking lenses and shutters. Making color prints from Kodachrome. Post script. Alphabetical index.

Note: As the title indicates, this book is directly related to the use of Kodachrome color film, manufactured in the United States by the Eastman Kodak Company. The author discusses the peculiar problems of color photography mainly from the viewpoint of the advanced amateur, although the book does contain information of interest to professional photographers who use this film. Some technical information is included, but the main value of the work lies in its critical discussions of the factors that must be considered in the taking of good color photographs.

DMITRI, IVAN, PSEUD.

Color in photography. Chicago: Ziff-Davis Publishing Company, 1939. 94 p. illus. (part col.) 17 cm. (Little technical library) \$0.79. 4532

Contents: Introduction. Getting started. Landscapes and scenic views. The family and the home. Travel. Action and sports. Beach and snow. Color indoors. Home interiors. Theatre and night street shots. Keeping the records. Editing, mounting, and projection. Separation negatives. Density scales. Wash-off relief printing. Making carbros. Chromatic printing.

Note: A pamphlet presenting for amateurs the essentials for making good pictures on natural color film. The work is devoted to the making of color pictures by means of Kodachrome and Dufaycolor films rather than by the use of original three-color separation negatives, one-shot cameras, and tricolor filters. Consequently only transparencies which are viewed with a projector are emphasized, although there is a brief discussion of print making by various processes. The Kodacolor method which produces color positives from complement negatives is not included since it was not commercially available at the time of writing. There are four color plates.

EASTMAN KODAK COMPANY

Data book on color photography with Kodachrome and Kodacolor film. New edition punched for Kodak reference handbook. Rochester, N.Y.: Eastman Kodak Company, 1944. 82 p. illus. (part col.) 22 cm. Paper, \$0.25. 4533

Contents: Types of Kodachrome film. Making Kodachrome pictures in daylight. Variation in subject color. Color harmony. Kodachrome pictures by artificial light. Kodachrome duplicates. Storing Kodachrome film. The Kodachrome process. Color printing by the Eastman wash-off relief process. Kodak minicolor and Kotavachrome prints. Black-and-white prints from Kodachrome transparencies. Kodachrome film specifications. Kodacolor roll film. Kodacolor prints. Exposure. Lighting suggestions. The Kodacolor process. Specifications.

Note: This booklet offers detailed working instructions for both amateur and advanced color photographers using the Eastman films and other materials. Technical data on lighting, exposure, filters, and meter settings are given for still and amateur motion picture cameras.

EASTMAN KODAK COMPANY

The photography of colored objects. Fourteenth edition. Revised. Rochester, N.Y.: Eastman Kodak Company, 1938. 124 p. illus. (part col.) 22 cm. \$1.00. 4534

Contents: The nature of color. The sensitiveness of the eye and of photographic materials to colored light. Color filters. The multiplying factors of filters. The rendering of color contrasts. Photography by artificial light. Photography by infrared radiation and landscape photography at long distance. The photography of colored objects for reproduction. Three-color photography. The optical properties of filters. The fitting of filters. The care of filters. Index.

Note: A statement of the theory underlying the photography of colored objects and the application of that theory to those branches of practice which are of the most frequent occurrence. While purely scientific terms and phraseology are not employed, no attempt has been made to use a simplified or practical approach. The Eastman products are freely discussed but there is also considerable generalization applicable to other manufactured photographic materials.

FRIEDMAN, JOSEPH SOLOMON

History of color photography. Boston: The American Photographic Publishing Company, 1944. 514 p. illus. 24 cm. \$10.00. 4535

Contents: Colorimetry. Subjective color reproduction. Objective color reproduction. Color cameras. The photographic emulsion. Tripacks and bipacks. Monopacks. Kodachrome and Kodacolor. Ansco color and Agfacolor. Screen plates. Formation of the screen. Processing screen plates. Separation negatives. The lenticular

process. Lenticular disclosures. Duplication of lenticular film. Masking. Chemical toning. Dye toning. Primary color development. Coupling color development. Gasparcolor and silver-dye-bleach processes. Carbon and carbro. The transfer processes. Diazo photography. Bleach-out photography. List of periodicals and abbreviations. Index.

Note: Essentially this work is a technical history of the processes that are important in color photography today. It does not cover the earlier history treated in E. J. Wall's *The history of three color photography*, Boston, 1925, but treats the important developments since that date at length. General principles are discussed in the early chapters, but succeeding chapters are devoted to detailed accounts of principles and techniques of the special aspects in the chapter headings. An important feature of the work is the citation of United States and foreign patents. Both references to patents and to other literature are given directly in the text, but there is no systematic bibliography.

HENNEY, KEITH

Color photography for the amateur. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1938. 281 p. illus. (part col.) 21 cm. \$3.50. 4536

Contents (abridged): Introduction. Color and color processes. Films and filters. Making transparencies. Making separation negatives. Color printing processes. Index.

Note: A practical book, telling how to make transparencies in color with Kodachrome, Dufaycolor, Finlay, and Agfa color materials; how to make prints on paper by the Chromatone, Carbro, Wash-off Relief, and Color-still processes; how to make separation negatives; how to make prints from Kodachrome and Dufaycolor. The apparatus necessary for each process is described (giving brand names); estimates are made of the cost; hints and details of operation are picked up from other color workers, both amateur and professional, and from manufacturers.

KEPPLER, VICTOR

The eighth art; a life of color photography, with a foreword by Bruce Barton. New York: William Morrow and Company, 1938. 256 p. illus. (col.) 31 cm. \$10.00. 4537

Contents: Art vs. color photography. The fathers of color. Early color processes. Contemporary color processes. The professional. Separation negatives. Carbro printing. Engraving and printing. Color portraiture. The amateur. Making a color print. Other color processes. The color of things to come. Conversion tables. Bibliography. Index.

Note: An illustrated manual of color photography which sets forth the essential simplicity of the art of taking and printing natural color photographs, including a description of every practical process in use as of 1938. The book is intended for both professional and amateur photographers and as a guide for advertising layout men and designers. There are 31 full-page four-color reproductions of some of the author's original color photographs executed for various American advertisers. These are accompanied by the technical details on lighting and exposure for each.

LEADLEY, JEROME H., AND WERNER STEGE-MEYER

Making color prints. Chicago: Ziff-Davis Publishing Company, 1941. 103 p. illus. 17 cm. (Little technical library) \$0.79. 4538

Contents: Additive and subtractive color synthesis. Equipment for making separation negatives. Separation negatives—characteristics and processing. Introduction to color printing. The tricolor pigment processes. Chromatone—a metal-toning process. The neotone process. Imbibition printing. Tricolor bromoil printing. Tricolor printing with dye-coupled color developers. Manufacturers and distributors of color equipment.

Note: A handbook for amateurs who would like to produce color prints but are deterred from doing so by the apparent complexity of the processes involved. The authors attempt to simplify both the theory and practice of color printing so that the processes may be easily followed with the simplest possible equipment, without presupposing any knowledge of chemistry or physics. There are no color illustrations, but numerous black-and-white photographs and drawings are included.

Moving Pictures

EASTMAN KODAK COMPANY

How to make good movies; a non-technical handbook for those considering the ownership of an amateur movie camera and for those already actively engaged in movie making who want to improve the interest and quality of their personal film records. Rochester, N.Y.: Eastman Kodak Company, 1938. 229 p. illus. (part col.) 22 cm. \$2.00. 4539

Note: A miscellany of practical suggestions for amateurs. The discussions are directly related to cameras, film, and other photographic apparatus manufactured by the Eastman Kodak Company.

EASTMAN KODAK COMPANY

Motion picture films for professional use. Rochester, N.Y.: Eastman Kodak Company, 1942. 72 p. illus. 23 cm. Board, \$2.00. 4540

Contents: Emulsion characteristics. Filters. Outline of processing. Tropical use. Physical characteristics. Specification sheets. Appendix.

Note: A brief reference booklet giving information and recommendations of general application to Eastman motion picture films. Technical data of specific application to individual films are presented in the specification sheets, and there is a discussion of the photographic and physical characteristics of the various classes of film as well as a graphical comparison of the individual films. Processing procedures or solutions are not included.

EASTMAN KODAK COMPANY

Motion picture laboratory practice and characteristics of Eastman motion picture films. Rochester, N.Y.: Eastman Kodak Company, 1936. 310 p. illus. 23 cm. \$2.50. 4541

Contents: Sensitometry of photographic materials. Eastman motion picture films. Color filters and polarizing screens. Developers and development. Fixing, washing, and drying. Processing motion picture film. Processing difficulties. Sensitometry as applied to processing. The printing of motion picture film. The duplication of motion picture negatives. Making motion picture titles. The intensification and reduction of motion picture film. Surface treatment of motion picture film. Silver recovery. Materials for the construction of motion picture processing apparatus. The storage of motion picture film. Preparing photographic solutions. Appendix. Index.

Note: A reference handbook for laboratory superintendents and others directly concerned with the use and processing of motion picture film. It aims to provide an up-to-date collection of information on the characteristics of Eastman motion picture film, the laboratory handling and techniques, the use of color filters and polarizing screens, and other topics of interest in motion picture practice. Bibliographic references are given in footnotes.

GALE, ARTHUR LORAN, AND KING PESSELS

Make your own movies, for fun and profit. New York: Coward-McCann, Inc., 1939. 230 p. illus. 22 cm. \$3.50. 4542

Contents (abridged): A word to beginners. Movies of the family. Ideas from real life. Making movies clear and sharp. Holidays on sand and snow. Bring your travels home. Get close to life. Games, events and parades. It's easy to film indoors. Title hunting. Showing your movies. Movies go to school. Influence in the community. Filming your job. How movies help business. A hobby that pays its way. Seven simple rules. Index.

Note: A book of instructions for the amateur. The style is popular and technical terms are avoided almost completely. Although the author deals briefly with the taking of short films

for profit, there is little in the book to interest the professional photographer.

MCKAY, HERBERT COUCHMAN

Movie making for the beginner. Chicago: Ziff-Davis Publishing Company, 1939. 98 p. illus. 17 cm. (Little technical library) \$0.79. 4543

Contents: Modern movies. What makes 'em move? The photography of movies. Modern cameras. Using the camera. Movies versus photography. Amateur motion-picture production. The art of titling. Editing the film. Home processing. Projection.

Note: A brief working guide for the amateur, showing how to operate an amateur motion picture camera, what to photograph, the tricks of title-making, editing the film, and home processing. An outline is also given of the steps in making an amateur photoplay.

ROSE, JACKSON JOSEPH

American cinematographer handbook and reference guide. Fourth edition, improved, enlarged and revised to date. Hollywood, Calif.: American Society of Cinematographers, 1942. 251 p. illus. 17 cm. \$4.00. 4544

Note: A collection of reference data in pocket handbook form, covering manufacturers' specifications and details for various types of motion picture cameras, projectors, and accessories, lens and filter characteristics, depth-of-focus charts, exposure scales, camera set-ups, projection charts for process-screen work, lighting equipment, and miscellaneous data. Information covers 8 and 16 mm. cameras and projectors, 35 mm. miniature cameras, Kodachrome and Dufay color films, together with numerous developing formulas and fixing solutions. Several pages of advertising matter are included.

SOCIETY OF MOTION PICTURE ENGINEERS

The technique of motion picture production, a symposium of papers presented at the 51st semi-annual convention of the Society of Motion Picture Engineers, Hollywood, California. New York: Published for the Society of Motion Picture Engineers by Interscience Publishers, Inc., 1944. 150 p. illus. 23 cm. \$3.50. 4545

Contents: Technology in the art of producing motion pictures. Cinematography in the Hollywood studios. Special photographic effects. Re-recording sound motion pictures. Technique of production sound recording. Prescoring and scoring. Illumination in motion picture production. The Paramount transparency process projection equipment. Motion picture laboratory practices. Cutting and editing of motion pictures. Projection of motion pictures.

Note: This volume contains 11 papers presented at a convention of the Society of Motion Picture Engineers. These papers describe current technical practice in motion-picture production, with production stages arranged in the order generally followed in producing and presenting motion pictures.

TUTTLE, HARRIS B.

Color movies for the beginner. With a foreword by Dr. Walter Clark. Chicago: Ziff-Davis Publishing Company, 1941. 143 p. illus. (part col.) 17 cm. (Little technical library) \$0.79. 4546

Contents: The possibilities of color. Principles and equipment. Color movie processes. Color film characteristics and color temperature. Exposure. Artificial lighting. Tricks of the trade. Titling and editing. Special fields for the amateur. Projection and general information.

Note: A brief book mainly of interest to the amateur. Considerable discussion of theory is included. The Kodachrome process of moving pictures is discussed at length.

FOOD TECHNOLOGY

AMERICAN ASSOCIATION OF CEREAL CHEMISTS. COMMITTEE ON REVISION

Cereal laboratory methods, with reference tables; fourth edition, 1941. Lincoln, Neb.: American Association of Cereal Chemists, 1941. 264 p. illus. (part col.) 24 cm. \$2.50. 4547

Contents (abridged): Wheat and other whole grains. Experimental milling. Wheat flour, semolina and similar products. Feeds and feeding stuffs. Rye. Malt. Enzymatic, physicochemical and bacteriological methods. Baking methods. Bread. Experimental macaroni processing. Macaroni products. Fats and shortening materials. Leavening agents. Yeast foods, bleaching agents and flour improvers. Appendixes: Glossary of cereal chemical terms. Statistical principles and experimental errors. Preparation and standardization of solutions. Reference tables. Moisture correction charts. Index.

Note: This compilation of official methods is for chemists and laboratory workers. It describes the standard methods for use in the analysis of cereals and cereal products. The fourth edition contains four new chapters, on experimental milling, malt, rye, and experimental macaroni processing. Most of the material in the appendixes is new in this edition also. F. C. Hildebrand was chairman of the Committee on Revision.

AMERICAN MEAT INSTITUTE. INSTITUTE PLAN COMMISSION. COMMITTEE ON RECORDING

Pork operations. Fifth revised edition prepared and edited by the Committee on Recording of the American Meat Institute. Chicago: Institute of Meat Packing, 1944. 412 p. illus. 27 cm. \$2.50. 4548

Contents: Development of pork processing methods. Selection of hogs for type. Handling and shipping live hogs. Slaughtering and dressing. Hog heads, pigfeet and variety meats. Hog casings. Hog chilling. Pork cutting. Hog carcasses and pork cuts. Handling fresh and frozen pork cuts. Curing. Preparing cuts for smoking (soaking). Smokehouse equipment and the smoking process. Steam and dry-rendered lard. Kettle-rendered and neutral lard and the packaging of lard. Loading and shipping.

Note: For this new edition of a book first published in 1924, the material has been amplified or changed wherever necessary to bring it into conformity with the best prevailing practice in the United States. The book endeavors to cover all of the operations in connection with the processing and handling of the primary pork products, without making extensive references to the production of manufactured meat specialties, such as sausage and cooked meats, or to the processing of inedible by-products of the industry, the latter subjects being treated in other publications of the Institute of Meat Packing. The volume is intended to serve as a source of basic information on pork production and as text material for the home study or correspondence courses offered by the Institute of Meat Packing.

BATES, FREDERICK JOHN, AND OTHERS

Polarimetry, saccharimetry and the sugars, by Frederick J. Bates and associates. Washington, D.C.: Government Printing Office, 1942. 810 p. illus. 23 cm. (United States. National Bureau of Standards. Circular 440) \$2.00. 4549

Contents: Part I, Polarized light, polarimeters, saccharimeters, and accessory apparatus: Introduction. Polarized light. Measurement of rotation in circular degrees. Measurement of rotation in sugar degrees. Temperature corrections and control. Accessory apparatus. Part II, Raw and refined sugars and sugar products: Polarization of raw and refined sugars. Clerget method. Chemical

methods for the determination of reducing sugars. Analysis of sugar mixtures. Analysis of special products. Determination of pentosans. Densimetry. Refractometry. Determination of moisture. Determination of ash. Electrical conductance of sugar solutions. Measurement of hydrogen-ion concentration. Colorimetry. Measurement of turbidity. Viscosity of sugar solutions. Solubility of the common sugars. Boiling points of sucrose solutions. Candy tests. Preparation and purification of pure sugars. Purity. Packing of sucrose. Part III, Preparation and properties of the sugars and their derivatives: Optical activity, configuration, and structure in the sugar group. Mutarotation and sugars in solution. Methods for the preparation of certain sugars. Methods for the preparation of certain sugar derivatives. Crystallography of the sugars. Melting points. Part IV, General information: Standard samples. Tests. Part V, Appendixes. Index.

Note: This circular supersedes National Bureau of Standards Circulars nos. 12 and 44, dated 1906 and 1917 respectively. The main object of the treatise is to explain the application and manipulation of polarized light for industrial, analytical, and theoretical purposes. An attempt is made to answer as far as possible the numerous requests made to the Bureau over a period of years for information on the theory and application of polarized light in the chemistry of the sugars. The general subjects of magneto and electro optics in relation to polarized light are omitted as lying beyond the province of the work. The material is based mainly on a survey of the technical literature of the field, and each chapter is followed by a list of references cited in the text. There are 149 tables of chemical and physical data relating to the sugars and a summary of United States custom regulations governing the weighing, taring, sampling, classification, and polarization of imported sugars and molasses.

BLUMENTHAL, SAUL

Food manufacturing. A compendium of food information, with practical factory-tested commercial formulae for the food manufacturer, chemist, technologist, in the canning, flavoring, beverage, confectionery, essence, condiment, dairy products, meat and fish, and allied industries. Brooklyn, N.Y.: Chemical Publishing Company, Inc., 1942. 664 p. 23 cm. \$7.50. 4549a

Contents (abridged): Methods and equipment. Basic food ingredients, their properties and uses. Milk products, cheese. Confectionery, chocolate products, coffee, tea, cacao. Gelatin desserts and pudding powders. Sauces, catsup, mayonnaise, condiments, pickles, mustard. Fish, fried foods, health foods, nut products. Prepared pie fillings. Specialty foods. Fruits, vegetables, and fruit juices. Canned fruits and vegetables, canning, dried fruits and vegetables, sulfuring fruits. Jellies, preserves, brining of cherries, citron, watermelon, lemon, orange, grapefruit peel, maraschino cherries, candied and glacé fruits. Composition and caking of foods, acid and alkali forming foods, hydrogen ion control, analyses and tests. Appendix. Index.

Note: A comprehensive reference work giving details of the manufacture, processing, and preserving of various foods as practiced in modern small- and large-scale commercial enterprises, together with the formulas employed, descriptions and analyses of ingredients, commercial uses, and related information. A chemical glossary, tables of weights and measures, abbreviations, and a short bibliography are given in the Appendix.

BRIDGES, MILTON ARLANDEN

Food and beverage analyses. Second edition, thoroughly revised. Philadelphia: Lea & Febiger, 1942. 344 p. 24 cm. \$4.00. 4550

Contents: Introduction. Carbohydrates. Proteins. Fats. Water. Analysis and classification of food. Caloric requirements. Adequate low-cost diets. Nutritive and caloric values of foods. Special dietetic and commercial foods. Strained foods. Chopped or junior foods. Recipe foods. Specific organic components of foods. Acidity of foods. Inorganic salts or minerals. The vitamins.

Numerical values for the vitamin content of common foods. Alcoholic beverages. Bibliographies.

Note: This work provides analytical data on food factors for the assistance of students of home economics, dieticians, nurses, welfare workers, industrial chemists, medical students, and clinicians. This second edition contains new material in the form of tables on the acidity of foods, their fiber content, the occurrence of sulfur, bromine, calcium, oxalate, phytins, purins, available carbohydrates, and ionizable iron.

BROOKS, CHARLES, AND OTHERS

Effect of solid and gaseous carbon dioxide upon transit diseases of certain fruits and vegetables, by Charles Brooks, E. V. Miller, C. O. Bratley, J. S. Cooley, Paul V. Mook, and Howard B. Johnson. Washington, D.C.: Government Printing Office, 1932. 60 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 318) \$0.10. 4551

Contents: Introduction. Review of literature. Purpose of the investigation. Methods and apparatus. Strawberry experiments. Peach experiments. Dewberry experiments. Experiments with other fruits and with vegetables. Discussion. Summary. Literature cited.

Note: The studies in the use of solid and gaseous carbon dioxide in food preservation described in this pamphlet were undertaken with the hope of finding at least a partial remedy for the spoilage that results from the warm condition of fruit and vegetable products during the first hours after loading for shipment. The bulletin reports the results of four years' experimental work on peaches and strawberries, three years' work on dewberries, and tests on other fruits and on vegetables.

BROWNE, CHARLES ALBERT, AND F. W. ZERBAN

Physical and chemical methods of sugar analysis; a practical and descriptive treatise for use in research, technical, and control laboratories. Third edition. New York: John Wiley & Sons, Inc., 1941. 1353 p. illus. 23 cm. \$15.00. 4552

Contents: Sampling of sugar and sugar products. Determination of moisture in sugar and sugar products by methods of drying. Densimetric methods of analysis. Principles and uses of refractometers. Polarized light; theory and description of polarimeters. Theory and description of saccharimeters. Polariscopes accessories. Specific rotation of sugars. Methods of simple polarization. Methods of invert or double polarization. Special methods of saccharimetry. Miscellaneous physical methods as applied to the examination of sugars and sugar solutions. Qualitative methods for the identification of sugars. Reduction methods for determining sugars. Special quantitative methods. Combined methods and the analysis of sugar mixtures. Selected methods for miscellaneous carbohydrate products. Appendix of sugar tables. Author index. Subject index.

Note: A practical and descriptive treatise for use in research, technical and control laboratories dealing with sugar. The book is a revision of the formerly published *Handbook of sugar analysis*. No attempt is made to describe all the apparatus and methods used in sugar analysis; a careful selection has been made, and full discussion of these is given. Emphasis has been placed upon principles; applications and modifications are left to the individual chemist. Important newer physical and chemical methods for the examination of sugars and sugar products are clearly treated. A section on the pH determination of sugar products has been added. Since the substances that accompany sugars exert a great influence upon the chemical composition and properties of sugar products, greater attention is devoted in the present volume to some of the more important of these extraneous impurities for their bearing on questions of origin and chemical treatment. References to special works and to original articles are helpful. Brief descriptions of older methods are given, for historical interest.

CHACE, EDWARD MACKAY, AND OTHERS

Preservation of fruits and vegetables by commercial dehydration, by E. M. Chace, W. A. Noel, and V. A. Pease. Washington, D.C.: Gov-

ernment Printing Office, 1941. 46 p. illus. 23 cm. (United States. Department of Agriculture. Circular no. 619) \$0.10. 4553

Contents: Introduction. Preservation by dehydration. Dehydration industry. Dehydration plant. Selection of material. Preparation of material: Washing. Grading for size. Peeling. Trimming. Checking. Subdividing. Pitting and seeding. Traying. Conveying the trayed material. Pretreatment: Blanching or processing. Sulfuring. Drying: Types of driers. Heat. Air. Moisture in the air. Relation of drying conditions to drying rate and quality of product. Engineering calculations for designing a tunnel dryer. Drying by recirculation of air. End point of dehydration. Curing. Insects attacking dried fruits. Packing and storing. Detailed directions for drying: Fruits. Vegetables. United States patents. Literature cited. Supplementary bibliography.

Note: This circular contains a summary of methods of preserving various fruits and vegetables by commercial dehydration. Consideration is given to certain physical principles and to their application to dehydration problems in general.

CHENOWETH, WALTER WINFRED

Food preservation; a textbook for student, teacher, homemaker and home factory operator. New York: John Wiley & Sons, Inc., 1930. 344 p. illus. 24 cm. (Wiley agricultural series, J. G. Lipman, editor) \$3.00. 4554

Contents: Foods. A brief history of canning. General discussion of canning. Canning equipment and its manipulation. Containers and their manipulation. Thermometers and temperatures. Canning fruits. Canning vegetables. Canning meats and poultry. General discussion of fruit products. Fruit butters. Conserves and marmalades. Jams. Jelly making. Preserves. Candied fruits and fruit candies. Pickled and spiced fruits. Vegetable pickles and relishes. Beverages and syrups. Maple products. Cider and cider products. Meat and meat products. Marine products. Accessory materials. Judging canned and manufactured foods. Drying and evaporation. The home factory. Appendices. Index.

Note: A discussion of practical and economical ways to preserve food in the home and on the farm. The book covers methods, illustrates equipment, and provides recipes. It constitutes a manual for the home and for the small commercial operator. The appendices contain tables useful to persons engaged in food manufacture, the Federal food law, and certain of the regulations pertaining to its enforcement.

CRUESS, WILLIAM VERE

Commercial fruit and vegetable products; a textbook for student, investigator and manufacturer. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 798 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences; L. J. Cole, consulting editor) \$6.00. 4555

Contents (abridged): General principles and methods. A brief history of canning. General considerations in establishing a cannery. Grading fruits and vegetables for canning. Syrups and brines used in canning. Sterilization of canned fruits and vegetables. The spoiling of canned foods. The sun drying of fruits and vegetables. The dehydration of fruits. Dehydration of vegetables. The packing of dried fruits and vegetables. Utilization of waste fruits and vegetables. Citrus by-products. Frozen-pack fruits and vegetables. Vitamins. Index.

Note: A treatment of the application of scientific principles to the manufacturing and preserving processes. The information it includes is of direct value to commercial canners and others engaged in the fruit and vegetable products industries in the operation and control of their plants.

CRUESS, WILLIAM VERE, AND OTHERS

Laboratory examination of wines and other fermented fruit products, by W. V. Cruess, M. A. Joslyn, and L. G. Saywell. New York: The Avi Publishing Co., Inc., 1934. 111 p. illus. 19 cm. \$2.50. 4556

Contents: Composition of fruit juices. Balling or brix test. The Abbe refractometer. Total acidity of juice. The composition of wine. Specific gravity of wine. Federal standards and regulations. Determination of alcohol. Determination of total acid. Cream of tartar. Volatile acidity. Determination of mannite. Tannin and coloring matter. Determination of sulfur dioxide. The determination of iron. Use of the Vino colorimeter. Microscopical examination of wines. Clarification tests. Activated carbon tests. Filtration tests. Incubation and cold storage tests. Pasteurizing tests. Propagation of pure wine yeast. Blending of wines. References for collateral reading.

Note: A manual on the chemical composition and microscopical appearance of fermented fruit products and beverages, primarily for the use of food chemists. The work is presented in condensed form with no more discussion than is necessary for a proper understanding of the subject. There are a number of references to the literature of the field for readers desiring additional information. The material is studied from the point of view of the plant control chemist rather than that of the food inspector.

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EDELMANN, RICHARD HEINRICH

Text-book of meat hygiene, with special consideration of antemortem and postmortem inspection of food-producing animals. Eighth revised edition by John R. Mohler and Adolph Eichhorn. With 169 illustrations and 5 colored plates. Philadelphia: Lea & Febiger, 1943. 468 p. illus. 24 cm. \$5.50. 4557

Contents: Introduction. Origin and source of meat food. Morphology and chemistry of the principal tissues and organs. The production, preparation and conservation of meat. Regulations governing meat inspection of the United States Department of Agriculture. Organization and methods of procedure of the inspection force. Decisions of the veterinary inspectors and disposal of the condemned meat. Abnormal conditions and diseases. Infectious diseases. Postmortem changes of meat. Examination and judgment of prepared and preserved meats, chickens, game, fish, amphibia and crustaceans. Food poisoning. History of meat hygiene. Abattoirs and stockyards. Preparation and control of meat-food products. Chemical analysis of meat-food products. Livestock statistics.

Note: Although this book was designed primarily for veterinarians and veterinary students, it is of value also to public health officials and those engaged in the processing of meats and meat food products. This eighth edition contains a revision of the chapter on endocrine glands and of the section on Federal meat inspection regulations. Another new feature of this edition is the appendix, containing livestock statistics.

GUEST, WARD E.

Refrigerated locker plant manual. Chicago: Nickerson and Collins Company, 1939. 143 p. illus. 21 cm. \$3.00. 4558

Contents: Locker plant and equipment. Judging meat. Processing meat. Quick freezing and storing of meats. Processing of vegetables. Processing fruits and berries. Equipment and its care. Refrigeration. Insulation. Supplies. Records. Public relations. Home use of frozen foods. Bibliography. Index.

Note: This book for the locker plant manager and operator has been prepared to give practical answers to the problems which arise in the daily management of such plants. The discussion presupposes some practical experience in handling and processing meats, fruits, and vegetables. A bibliography of pertinent literature is included.

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HALLIDAY, EVELYN GERTRUDE, AND ISABEL T. NOBLE

Food chemistry and cookery. Chicago, Ill.: The University of Chicago Press, 1943. 346 p. illus. 24 cm. \$3.00. 4559

Contents: Introduction. The chemistry of vegetable cookery. Food preservation. Pectic substances and fruit jellies. The chemistry of milk. Beef muscle. Fats. Techniques in the preparation of muffins, biscuits, etc. The chemistry of baking powders and their use in baking. Characteristics of general-purpose and cake flours and their use in baking. Egg-white foams. Factors affecting crystallization in candymaking. Chemical and physical

characteristics of ice-cream. Determination of hydrogen-ion concentration. Determination of calcium and phosphorus. Determination of ascorbic acid in vegetables. Index.

Note: This book is a practical manual, containing discussions and experiments to illustrate the chemical principles upon which good practices in food preparation and preservation are based and to show how closely related food materials, such as certain culinary fats, flours, and baking powders, may be identified and utilized to the best advantage. Many chemical methods and pieces of apparatus not heretofore utilized in food classes have been made a part of the experimental work. Thus hydrogen ion concentration measurements are included in the work on vegetables, canning, pectin jellies, and baking powders. Electrometric and indicator methods using color standards are described for those who have the equipment and technique, simple colorimetric methods for those who do not. Methods for determining ascorbic acid, calcium, and phosphorus are given specifically in relation to the loss of nutrients during cooking but are so written as to be valuable wherever these determinations are made. Bibliographies are included.

HALLIDAY, EVELYN GERTRUDE, AND ISABEL T. NOBLE

How and whys of cooking. Chicago, Ill.: The University of Chicago Press, 1933. 252 p. illus. (part col.) 21 cm. (The University of Chicago home economics series) \$3.00. 4560

Contents (abridged): Vegetables. Factors which contribute toward the success in the preparation of muffins, cakes, etc. Cakes containing fat. Angel-food and sponge cakes. Baking-powder biscuits. Pies. Candy. Ice-cream. Beef. Meal planning.

Note: A food chemistry text and cook book for women in the home, domestic science laboratories, and commercial food establishments. The chemical processes which occur in cooking are explained, and fool-proof recipes and the right and wrong ways of cooking are included. This revised edition is enlarged, and contains new chapters on the buying and cooking of beef and on meal planning.

HARSHAW, HAROLD McCLOSKEY, AND OTHERS

Quality of frozen poultry as affected by storage and other conditions, by Harold M. Harshaw, Walter S. Hale, T. L. Swenson, Lucy M. Alexander, and R. R. Slocum, in cooperation with the Institute of American Poultry Industries. Washington, D.C.: Government Printing Office, 1941. 20 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 768) \$0.05. 4561

Contents: Introduction. Experimental procedure. Losses in weight and external appearance during storage. Chemical changes. Bacteriological studies. Cooked-meat studies: Shrinkage and cooking time. Palatability. Summary and conclusions.

Note: The experiments reported in this bulletin were made to study the effects upon the quality of poultry of freezing at different temperatures and of storage drawn and undrawn and of storage for 1, 2, and 3 years.

HUGHES, OSEE GLADYS

Introductory foods. New York: The Macmillan Company, 1940. 522 p. illus. 22 cm. \$3.00. 4562

Contents: The nutritional and hygienic aspects of the study of foods: The study of foods as related to nutrition. The hygienic aspects of food preparation and use. Composition and nutritive value of foods: theories and technics of food preparation: pertinent buying points: Fruits and fruit preparation. Vegetables and vegetable preparation. Milk and milk products other than butter and ice cream. Eggs and egg cookery. Meat and meat cookery, poultry, fish. Carbohydrates and carbohydrate cookery. Gelatin. Fats and oils. Salads and salad dressings. Freezing and frozen desserts. Beverages. Batters and doughs. Food preservation. Frosted foods. The planning and serving of meals: meal planning. Meal service. Appendices. Index.

Note: A text for the first course in foods taught in college departments of home economics. Gives an adequate background

knowledge of the nutritional and health aspects of food in terms easily understood by students with no previous training in physiology and nutrition. Treats in detail the preparation, composition, and nutritive values of each different kind of food, together with useful buying information. Laboratory exercises are included.

JACOBS, MORRIS BORIS

The chemical analysis of foods and food products. New York: D. Van Nostrand Company, Inc., 1938. 537 p. illus. 23 cm. \$6.00. 4564

Contents: General methods. Physical chemical methods. Coloring matters in foods. Preservatives in foods. Metals in foods. Milk and cream. Milk products. Oils and fats. Sugar foods and carbohydrates. Gums, cereals, starch and other polysaccharides. Jams, jellies, fruits. Spices and flavors. Non-alcoholic beverages and allied products. Alcoholic beverages. Meat, meat products, fish and eggs. Vitamins. Inorganic determinations. Index.

Note: This book gives the details of the various methods of chemical analysis used to determine the composition of foods, to detect the presence of adulteration, and to provide means of control in the food processing industries. Each of the methods is discussed from the standpoint of its actual use in the laboratory, with descriptions of apparatus, procedure, precautions, and interpretation of results. Short methods for use in routine control work are included, as well as the long methods suitable for precise determinations. Short bibliographies accompany the chapters.

JACOBS, MORRIS BORIS, EDITOR

The chemistry and technology of food and food products. New York: Interscience Publishers, Inc., 1944. 2 v. illus. 25 cm. Single volume, \$10.50; set of two volumes, \$19.00. 4565

Contents: Volume I: Preface. List of contributors. Part I, Fundamentals: Introduction by Morris B. Jacobs. The physical chemistry of foods, by J. L. St. John. The carbohydrates, by Ed. F. Degering. Lipids, by Manuel M. Baizer and Hugo Zahnd. Some aspects of the chemistry of amino acids and proteins, by Hugo Zahnd and Manuel M. Baizer. Enzymes, by Kurt G. Stern. Vitamins, vitamins, and hormones, by H. R. Rosenberg. Mineral matters and other inorganic food adjuncts, by R. H. Carr. Coloring matters in foods, by C. F. Jablonski. The digestion and fate of foodstuffs, by Alfred E. Wilhelm. Food spoilage and food poisoning, by H. Orin Halvorson. Part II, Foods: Milk, cream, and dairy products, by Morris B. Jacobs. Meat and meat products, by Walter M. Urbain. Fish, shellfish, and crustacea, by Maurice E. Stansby. Poultry and eggs, by M. E. Pennington. Edible oils and fats, by Alton E. Bailey. Cereal grains, by W. F. Geddes. Baking and bakery products, by William H. Cathcart. Vegetables, mushrooms, nuts, and fruits, by F. A. Lee. Carbohydrate and sugar foods, by Ed. F. Degering. Confectionery and cacao products, by Martin Schoen. Coffee and tea, by William H. Ukers. Flavors, spices, and condiments, by Lee Worrell. Subject index. Volume II: Preface. List of contributors to volume II. Part III, Unit operations and processes, by Kenneth M. Gaver. Part IV, Sanitary and quality control: Food supervision by government agencies, by Jerome Trichter and Sol Pincus. Food grading: sanitary and quality control, by T. A. Samuelson. Food machines, by A. E. Abrahamson. Washing, detergency, sanitation, and plant housekeeping, by John L. Wilson. Insect control: insecticides and fungicides, by Harold H. Shepard. The prevention and control of rodent life, by Benjamin E. Holsendorf. Part V, Preservation: The dehydration of foods, by E. M. Mrak and G. Mackinney. Food preservation by temperature control, by Donald K. Tressler. The preservation of food in hermetically sealed containers, by O. B. Williams. Food preservation by use of microorganisms, by F. W. Fabian. Chemical preservatives, by Morris B. Jacobs. Packaging, by Christopher W. Browne. Part VI, Production: Technology of cereal grains, by W. F. Geddes. The production of bread and bakery products, by William H. Cathcart. Sugars and sirups, by Morris B. Jacobs. Confectionery and cacao products, by Martin Schoen. Fruit juices, jams, jellies, and preserves, by A. M. Neubert and J. L. St. John. Milk and milk products, by Paul Corash. Meat and meat products, by Walter M. Urbain. Oils, fats, and related products, by Alton E. Bailey. Non-alcoholic beverages, by Joseph F. Hale. Alcoholic beverages, by Peter Valaer. Industrial waters, by Frederick C. Nachod and Eske! Nordell. Subject index.

Note: The papers in these volumes are the work of chemists, food technologists, bacteriologists, public health officers, and other specialists. There are frequent references to the literature of the subjects discussed.

JARVIS, NORMAN DONALD

Principles and methods in the canning of fishery products. Washington, D.C.: Government Printing Office, 1943. 366 p. illus. 23 cm. (United States. Fish and Wildlife Service. Research report no. 7) Paper, \$0.50. 4566

Contents: Abstract. Introduction: Historical outline of the canning of fishery products. Statistics on production of canned fishery products. Principles involved in canning seafoods: Relation of micro-organisms to canning. Sterilization. Vacuum in canned fishery products. Factors to be considered in establishing a cannery. Factors in cannery construction. Containers and packages. Important factors in the operation of canning machinery. Sanitation in canning. Operations involved in canning. Brines and other added ingredients. Pacific salmon. Sardines. Tuna. Mackerel. Miscellaneous fish. Shellfish. Crustacea. Specialty products: Clam chowder. Fish chowder. Fish cakes. Fish balls (Fiskeboller), Norwegian style. Turtle and terrapin products. Frog legs. Crawfish bisque. Fish roe and caviar. Canned products hermetically sealed but not processed. Spoilage in canned fishery products. Examination of canned fishery products. Cannery inspection. Canned fishery products as food. Literature cited.

Note: This report amounts to a practical manual on the canning of fishery products. In addition to discussing the scientific principles upon which canning is based, it outlines the various engineering problems faced by the canner and gives a detailed description of methods used in the commercial canning of 58 varieties of fish and shellfish packed in hermetically sealed containers.

JENSEN, LLOYD B.

Microbiology of meats. Champaign, Ill.: The Garrard Press, 1942. 252 p. illus. (part col.) 23 cm. \$4.00. 1945 4567

Contents (abridged): Introduction and history. Some effects of sodium nitrate on bacteria in meat. Gaseous fermentation in meat products by the genus *Bacillus*. Bacteriology of green discolorations in meats. Action of microorganisms on fats. A study of ham souring. Microbiology of beef. Bacteriology of sausage. Microbiology of bacon. Control of microorganisms. Bacteriology of spices, salt, sugar, paper and wood. A summary of food poisoning of bacterial origin. Index of authors. Index of subjects.

Note: A technical discussion of bacterial action and the preventive measures which are used experimentally and industrially. The text is well documented with bibliographical footnotes.

LOWE, BELLE

Experimental cookery from the chemical and physical standpoint. Third edition. New York: John Wiley & Sons, Inc., 1943. 611 p. illus. 23 cm. \$4.50. 4568

Contents: The relation of cookery to colloid chemistry. Sugar cookery. Freezing and ice cream. Food preservation. Fruits and vegetables. Jelly. Gelatin. Meat. Emulsions. Milk and cheese. Eggs. Starch, flour, and bread. Batters and doughs. Fats and oils. Author index. Subject index.

Note: A textbook designed to provide a scientific basis for an understanding of food preparation from the chemical and physical viewpoint. In this edition much of the material has been rewritten. Extensive revision and additional data appear in the sections on frozen foods, meat, eggs, batters and doughs, and fats and oils. There is a new chapter on food preservation. It includes preservation by freezing and by low temperatures, the use of heat, canning, drying, and various other means. The number of photomicrographs has been increased, particularly those in relation to structure of muscle fibers. As in the earlier editions, a laboratory outline is given, with detailed directions for the conduct of laboratory work in experimental cookery.

PRESCOTT, SAMUEL CATE, AND BERNARD E. PROCTOR

Food technology. New York: McGraw-Hill Book Company, Inc., 1937. 630 p. illus. 23 cm. \$5.00. 4569

Contents: Introduction. Wheat and milling. Corn and corn products. Minor cereals. Vegetables. Fruits. Sugars and sirups. Meat and meat products. Fish and fish products. Poultry and eggs. Milk. Dairy products. Baking. Canning. Refrigeration. Dehydration. Salt, vinegar and pickled products. Vegetable oils, mayonnaise. Fruit juices. Jellies and jams. Confectionery. Coffee, tea, and spices.

Note: The material in this volume is based largely on courses given by the authors at the Massachusetts Institute of Technology. It deals with the economic applications of biology, physics, chemistry, and engineering in the preparation of food products, and discusses the sources, preparation for market, and methods of quantity handling of various types of foods. The fundamental principles of manufacturing and treatment, rather than detailed descriptions of individual processes, are emphasized.

SOMMER, HUGO HENRY

The theory and practice of ice cream making. Fourth edition. Madison, Wis.: The author, 1944. 666 p. illus. (part col.) 23 cm. \$5.75. 4570

Contents (abridged): Composition of ice cream. Ingredients used in making ice cream. Making the ice cream mix. Testing and standardizing of mixes. Defects in ice cream. Freezing and crystallization. Whipping abilities of mixes. Handling, packaging, hardening and shipping. Sugars used in ice cream. Fruits and fruit ice cream. Ices and sherbets. Costs and merchandising. Ice cream as a food. Bacteriology of ice cream.

Note: A comprehensive treatment of both the theoretical and practical aspects of ice cream making. Since the volume is designed for the use of the practical ice cream maker as well as the student and research worker, the theoretical discussions relating to the physico-chemical properties of ice cream, the effect of freezing on the colloidal suspensions and emulsions, and the bacteriology of ice cream, have been brought together into separate chapters. There is a bibliography and a list of review questions at the end of each chapter. An appendix includes recipes for ice creams, ices and sherbets, methods for determining the hydrogen ion concentration, and numerous tables of useful information. There is an index.

SPARKES, BOYDEN

Zero storage in your home. Garden City, New York: Doubleday, Doran & Co., Inc., 1944. 149 p. illus. 20 cm. \$2.50. 4571

Contents: A grocery store in your home. The freezer in city homes. What does a freezer cost? Locker plants. Mrs. Spencer's acre. The first freezer in Kalamazoo. Emphasis on better eating. The Fyler family. Revolution in Connecticut. What is security? Progress from poverty. Sharing the work. Yesterday's and tomorrow's freezer. Operation and care. Equipment for quick freezing. Planning. Fruits. Vegetables. Meat and poultry. Fish and game. Dairy products and eggs, cooked foods. Index.

Note: Part I recounts with enthusiasm the convenience and economy which the author and others have found in the operation of family-sized food freezers. Part II offers advice on the care of freezing units, packaging materials, and the preparation of foods for freezing at home or at some locker plant. The book is for laymen rather than refrigeration specialists.

SWANSON, CHARLES OSCAR

"Wheat and flour quality." Minneapolis, Minn.: Burgess Publishing Company, 1938. 227 p. illus. 27 cm. \$3.00. 4572

Contents: Who or what determines the meaning of quality. Some physical measures of quality. The meaning of some chemical determinations. Substances of which wheat and flour are composed. Protein or gluten the master substance. The world's biggest food crop. Classes and varieties of wheat. Whence the substances in wheat. Influence of climate and soil on quality. Soil nitrogen, the key element in protein content. Factors that influence the quantity of protein. Enzymes, the tools of life processes. The life activities of the wheat kernel. Germination and diastatic activity. Between harvest and mill storage. Getting the wheat ready for milling. How much flour from wheat. What happens to wheat in the mill. The flour particles and still smaller particles. Starch and its relatives. Dissecting the protein. Association of particles with each other. The flour and water mixture, phases and interfaces. Gluten and its environment. Some factors at the basis of the physical behavior of dough. Physical tests to measure quality. Index.

Note: A textbook for use in advanced courses in agricultural colleges, and for other interested groups such as millers, bakery

engineers, cereal chemists, and food analysts. Each chapter has been made self contained, and the style is simplified for use as a home-study text by the groups mentioned. There are extensive bibliographies following each chapter.

SWEETMAN, MARION DEYOE

Food selection and preparation. Third edition. New York: John Wiley and Sons, Inc., 1943. 512 p. illus. 22 cm. \$3.50. 4573

Contents: The appraisal of foods. The processes used in food preparation. The structure of foods. Cereals. Fruits and vegetables, 1. Fruits and vegetables, 2. Milk and its products. Eggs. Fats and oils. Meat and allied foods. Sugars and their use in food mixtures. Frozen mixtures. Flour mixtures, 1. Yeast bread. Flour mixtures, 2. Flour mixtures other than yeast bread. Meal planning. Index.

Note: A college textbook designed to be used in conjunction with laboratory work. Some knowledge of chemistry is required. The emphasis in this edition is on the choice of methods of preparation of foods to make them wholesome and appealing to the appetite. The chapter on meal planning has been expanded to include a discussion of the problems of food buying. As in the other editions the approach is through appraisal by five criteria: nutritive quality, digestibility, palatability, sanitary quality, and economy.

TANNER, FRED WILBUR

The microbiology of foods. Second edition. Champaign, Ill.: Garrard Press, 1944. 1196 p. illus. 24 cm. \$12.50. 4574

Contents: Food preservation. The bacteria. Yeasts and molds. Bacteriology of water and sewage. Microbiology of milk. Bacteriological milk analysis. Pasteurization of milk. Microbiology of cream and butter. Microbiology of cheese. Microbiology of frozen desserts, ice cream, and similar products. Microbiology of concentrated milk. Fermented milks. Intestinal microbiology. Microbiology of fruits and fruit products. Microbiology of vegetables and vegetable products. Microbiology of tomato products. Microbiology of bread. Fermented foods. Microbiology of sugar and sugar products. Microbiology of fish and shellfish. Meat and meat products. Microbiology of eggs and egg products. Microbiology of canned foods. Microbiology of miscellaneous food products. Microbiological methods of assaying food for vitamins. Culture media. Index.

Note: This book is both a comprehensive manual of tests and methods of analysis and a guide to the literature. In this second edition the subjects of mycology and microbiology have been greatly expanded. All of the major methods of analysis issued up to the time of the preparation of this edition have been included with full discussions and details.

TRESSLER, DONALD KITELEY, AND CLIFFORD F. EVERS

The freezing preservation of foods. New York: The Avi Publishing Company, Inc., 1943. 789 p. illus. 21 cm. \$8.00. 4575

Contents (abridged): Principles of refrigeration. Cold storages and sharp freezers. Quick freezing. Frozen food locker plants. Freezing cabinets and farm freezers. Changes occurring during the preparation, freezing, cold storage and thawing of foods. Packaging materials and problems. Adaptability of fruits to freezing. Freezing preservation of fruits. The manufacture and freezing of fruit juices. Adaptability of vegetables and vegetable varieties to freezing. The preparation and freezing of vegetables, meat, poultry, fish, shellfish, and dairy products. The storage, transportation and marketing of frozen foods. The nutritive values of frozen foods. The cooking and serving of frozen foods. The importance of quality control and standards in the frozen foods industries. Appendix. Index.

Note: A revision and enlargement of Tressler and Evers' *The freezing preservation of fruits, fruit juices, and vegetables*, New York, 1936, which considered only fruits and vegetables. The scope of the present work is enlarged to include the freezing of meat, poultry, fish, shellfish, and dairy products. Special attention is given to the commercial freezing of haddock fillets, shrimp, poultry, cream and ice cream, and there are detailed accounts of modern commercial methods of handling, packaging, and storing these and other food products. The large-scale freezing and packaging of meat, developed as an outcome of the war to supply the armed forces, is also given considerable attention. The book is intended primarily for those engaged in

the freezing of foods on a commercial scale but is useful for the farmer and others who freeze foods for their own use. Bibliographies are given at the end of each chapter.

TRESSLER, DONALD KITELEY, AND OTHERS

Fruit and vegetable juices, by Donald K. Tressler, Maynard A. Joslyn, and George L. Marsh. New York: The Avi Publishing Company, Inc., 1939. 549 p. illus. 21 cm. \$6.00; foreign countries, \$6.50. 4576

Contents (abridged): The rise of the fruit and vegetable juice industry. Principles of preparation and preservation of fruit juices. Equipment used in preparing fruit and vegetable juices. Equipment used in packing and preserving fruit and vegetable juices. Plant layout. Methods and equipment employed in freezing fruit juices. Apple juice or cider. Pineapple juice. Grapefruit juice. Orange juice. Lemon and other citrus juices. The manufacture and preservation of grape juice. Cherry and berry juices. Miscellaneous fruit juices and fruit-juice beverages. Tomato juice. Sauerkraut juice and other miscellaneous vegetable juices. The nutritive value of fruit and vegetable juices. Fruit juice concentrates and syrups. Fruit juice beverages. The utilization and disposal of fruit wastes. Blending formulae and syrup algebra. Appendix. Index.

Note: A general discussion of the principles of juice preparation and preservation, together with a résumé of the standard commercial procedures. Tested laboratory methods of preparing and preserving the lesser-known juices have been included, as well as brief descriptions of the more important types of equipment used in the preparation, packing, and preservation of fruit and vegetable juices and a discussion of the utilization of fruit juice concentrates, syrups, beverages, and wastes. Nutritive values of fruit and vegetable juices, including vitamin content, are included. There are numerous tables of technical data and lengthy bibliographies after each chapter. Intended for the manufacturer, engineer, or laboratory technician engaged in the industry.

UNITED STATES. DEPARTMENT OF AGRICULTURE. COMMITTEE ON DEHYDRATION OF MEAT

Meat dehydration: a report of research work for its commercial development. Prepared under the direction of the Committee on Dehydration of Meat, Agricultural Research Administration, United States Department of Agriculture. Washington, D.C.: Government Printing Office, 1944. 46 p. 23 cm. (United States. Department of Agriculture. Circular no. 706) \$0.10. 4577

Contents: The problem and scope of work. Meat, equipment, and processing. Packaging. Compressibility. Control of bacteria and molds. Chemical composition and changes. Nutritive value of protein and fat. Vitamin and mineral content. Rehydration. Palatability. Further comparison of processes. Specifications for commercial production. Summary and conclusions.

Note: The report contained in this circular is a condensed description of the investigations carried on under the direction of the Committee on Dehydration of Meat appointed in 1942 and of their principal results. Most of the studies were carried on at the Department of Agriculture's Research Center at Beltsville, Maryland. The research work described presents information on principles and practices helpful in developing commercial supplies of dehydrated meat quickly and in quantities adequate to wartime needs.

UNITED STATES. BUREAU OF AGRICULTURAL AND INDUSTRIAL CHEMISTRY

Vegetable and fruit dehydration. A manual for plant operators. Prepared by Bureau of Agricultural and Industrial Chemistry, Agricultural Research Administration. Washington, D.C.: Government Printing Office, 1944. 218 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 540) \$0.30. 4578

Contents: Introduction. Locating new plants. Plant layout, equipment, and capital investment. Storing and handling fresh fruits and vegetables. Preparation of raw materials. Blanching. Sulfuring vegetables. Principles involved in the drying process. Effect of drying conditions on quality of product. Conveyor-belt dehydrators. Tunnel-and-truck dehydrators. Starting and stopping the tunnel drier. Cabinet dehydrators. Sources of heat for dehydrators. Temperature controllers. Mechanical movement of air in dehydrators. Bin-type finishing driers. Other types of dehydrators and their uses. Multistage dehydration. Finishing and packaging. Final inspection of the dry product. Temperature reduction to maintain quality in dehydrated products. Standard types of packages. Packaging equipment and methods. Substitutes for tin-plate containers. Compression to high density for packaging. Sanitation. Control of insects and mites. The control laboratory. Rehydration tests. Quality testing. Processing costs. Handling various vegetable and fruit crops. Literature cited.

Note: This publication is designed to serve as a manual for commercial operators in the dehydration industry. It concerns itself with the technological and engineering problems involved rather than with the detailed results of the research upon which it is based.

VON LOESECKE, HARRY WILLARD

Drying and dehydration of foods. New York: Reinhold Publishing Corporation, 1943. 302 p. illus. 23 cm. \$4.25. 4579

Contents: Foreword. Preface. Types of dehydrators. Sun-drying and dehydration of fruits. Dehydration of vegetables. Dehydration of eggs, milk and butter. Dehydration of meat, fish and beef blood. Plant sanitation. Cost of dehydration. Nutritive value of dried and dehydrated foods. Packaging and storage. Methods of analysis, and reconstitution of dehydrated foods. Glossary of terms. Patent list. Index.

Note: This non-technical presentation of the latest and best methods of commercial dehydration serves as a guide to those in the industry or to the general layman interested in food dehydration. The usual method of preparation, recommended type of dryer, optimum drying temperature, and the standards for judging the resulting product are given for each type of food treated.

VON LOESECKE, HARRY WILLARD

Outlines of food technology. New York: Reinhold Publishing Corporation, 1942. 505 p. illus. 23 cm. \$7.00. 4580

Contents: The tin can and glass container. Fruits and their products. Canning of vegetables. Dairy products. Meat, meat products and poultry. Fish and shellfish. Grains and their products. Edible fats and oils. Sugars and starches. Nuts. Spices, relishes, essential oils, and extracts. Beverages. Confectionery, jams, jellies, preserves and certified dyes. Storage and marketing of fruits and vegetables. Preservation of foods by freezing. Index.

Note: The important foods and the processes by which they are handled commercially are described for persons in the food industry and for general readers. The field is not covered in great detail, but bibliographical footnotes and "Suggested readings" at the end of chapters provide additional sources of information. The nutritive value of foods is not treated.

WEST, SUSAN FREEMAN, AND LOUISE SOBYE

A handbook of food preparation. New York: The Macmillan Company, 1937. 291 p. illus. 22 cm. \$2.50. 4581

Contents: Vegetables. Fruits. Cereals and starches. Eggs. Milk and cheese. Batters and doughs. Sugars and syrups. Frozen mixtures. Meat, poultry, fish, and gelatin. The use of fats and oils for deep-fat frying and salad dressings. Beverages. Food preservation. Planning and serving meals. Index.

Note: A manual, containing experiments and laboratory exercises, for use with introductory textbooks on foods or food preparation.

WINTON, ANDREW LINCOLN, AND KATE (BARBER) WINTON

The structure and composition of foods. New York: John Wiley & Sons, Inc., 1932-39. 4 v. illus. 24 cm. Vol. I, \$10.00; Vol. II, \$15.00; Vol. III, \$8.00; Vol. IV, \$9.00. 4582

Contents (abridged): Volume i: Cereals, starch, oil seeds, nuts, oils, forage plants. Volume ii: Vegetables, legumes, fruits. Volume iii: Milk (including human), butter, cheese, ice cream, eggs, meat, meat extracts, gelatin, animal fats, poultry, fish, shellfish. Volume iv: Sugar, sirup, honey, tea, coffee, cocoa, spices, extracts, yeast, baking powder.

Note: This four-volume work is a fundamental treatise in the subject. It considers not only foods consisting of nutritive constituents, but also food adjuncts. Data have been assembled from scientific journals in many languages. Volume i treats its subject under three main headings: macroscopic structure, microscopic structure, and chemical composition. Volume ii is perhaps the only scientific book on the subject in the English language. It presents a thorough treatment of the structure of fruits and vegetables. Volume iii, devoted to foods of animal origin, takes up the influence of production and manufacture on those products. The addenda in volume iv discuss developments in vitamin chemistry, especially the framing of structural formulas of the individual vitamins.

543.1 WOODMAN, ALPHEUS GRANT

W264 Food analysis; typical methods and the inter-

pretation of results. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1941. 607 p. illus. 23 cm. (International chemical series; L. P. Hammett, consulting editor) \$4.00. 4583

Contents: General methods. The microscopical examination of foods. Food colors and preservatives. Chemical preservatives. Milk, cream and ice cream. Edible fats and oils. Olive oil. Butter. Carbohydrate foods. Maple sirup. Honey. Cocoa and chocolate. Spices. Pepper. Cassia and cinnamon. Cloves. Mustard. Cider vinegar. Flavoring extracts: extract of vanilla. Lemon extract. Extract of ginger. Alcoholic foods. Wines. Whisky. Photomicrographs. Index.

Note: Food analysis is treated as a particular branch of analytical chemistry in this book written for students and beginners. In this edition the methods of analysis have been revised, and new material added on detection of postprohibition practices in alcoholic beverages, on dextrose, and on new permitted dyes including oil-soluble colors. The plan of the work remains the same.

MISCELLANEOUS TECHNOLOGY

Architectural Acoustics

KNUDSEN, VERN OLIVER

Architectural acoustics. New York: John Wiley & Sons, Inc., 1932. 617 p. illus. 23 cm. \$6.50. 4584

Contents: Introductory. Physical acoustics—nature of sound. Nature of hearing. Nature of speech and music. Reverberation of sound in rooms. Absorption of sound—general and theoretical considerations. Absorption of sound—methods of measuring reverberation and absorption. Absorption of sound—measurements, coefficients of sound-absorption, and other properties of acoustical materials. Insulation of sound—noise in buildings and out-of-doors. Insulation of sound—methods of measurement. Insulation data. Calculation in buildings. Amplification of sound. Acoustics of auditoriums—general considerations—shape. Acoustics of speech halls—noise, loudness, and reverberation. Acoustics of music rooms. School buildings. Public and commercial buildings. Church buildings. Open-air theatres. Theatre buildings. Music buildings. Hotels, apartment houses, and residences. Radio broadcast and sound-recording studios. Problems. Appendices. Index.

Note: The information offered in this book sets forth the fundamentals of architectural acoustics—beginning with the most elementary facts and notions of acoustics, and developing from these the pertinent formulas and principles which should guide all good design. It tabulates and describes the physical properties of materials and types of construction which are basic in the control of sound in buildings, and it works out in detail problems of acoustical designing in all types of building in which acoustics should be considered. The subject is presented in such an elementary manner that the fundamental principles are intelligible to the non-technical as well as to the technical reader.

WATSON, FLOYD ROWE

Acoustics of buildings, including acoustics of auditoriums and sound-proofing of rooms. Third edition. New York: John Wiley & Sons, Inc., 1941. 171 p. illus. 23 cm. \$3.00. 4585

Contents: General phenomena of sound that apply to buildings. Behavior of sound in a room. How sound builds up and dies out in a room. Reverberation equations. Reverberation in a room and its control. Optimal time of reverberation. Ideal auditorium acoustics. Acoustic design of auditoriums. Examples of acoustic design and correction. Hearing and speech in auditoriums. Acoustic field tests. Absorption of sounds by materials. Calculations in acoustical correction. Acoustic adjustment of small rooms. Sound insulation. Sound transmission and insulation. Vibrations and their control. Examples of soundproofing. Problems. Index.

Note: This volume, written for architects and builders, describes the action of sound in buildings and gives detailed illustrations for the design of new buildings and the correction of acoustic defects. This edition takes into account the developments of the past ten years, and cites new illustrations and examples. Problems, to serve as teaching aids, are now included.

Cleaning

COOLEY, WARREN K.

Practical science for the drycleaning industry. Atlanta, Ga.: The National Association of Dyers

and Cleaners of the United States and Canada, 1930. 211 p. illus. 18 cm. \$3.50. 4586

Contents (abridged): Forms of matter. Physical and chemical changes. Mixtures and compounds. Solution. Crystallization. Evaporation. Distillation. Properties of water. Oxygen. Oxidizing agents. Acids. Alkalies. Organic chemistry. Hydrocarbons. Chemical treatment of naphthas. Sulphuric, caustic soda, and doctor treatments. Water washing. Commercial drycleaning solvents. Organic acids. Fatty acids. Hard and soft soaps. Alkalinity of soaps. Soap powders. Special detergents. Lowering of surface tension. Emulsifying action. Water softening. Benzene soaps. Lubricating action. Clarification processes. Alcohols. Esters. Glycerides. Hydrogenation. Starches. Digestion processes. Chemicals used by the drycleaning industry. Index.

Note: A collection of chemical information applying only to drycleaning, combining in simple and elementary form the entire basic chemical information used in the industry. Written for persons without previous education in chemistry. A list of chemicals used, with their formula, physical appearance, solubility, effect on fabrics and dyes, precautions, and uses, is also included.

COVINGTON, CLYDE H.

The spotting department. Silver Spring, Md.: National Association of Dyers and Cleaners of the United States and Canada, 1940. 221 p. illus. 19 cm. \$3.50. 4587

Contents: Introduction. Equipment and tools. Fibers, fabrics, and dyestuffs. Chemicals and formulas. Methods of stain removal. Removal of spots and stains. Special problems. Index.

Note: A concise manual on the commercial methods of removing certain kinds of spots and stains from garments and other textiles during the drycleaning process. The text covers the technique of determining the nature of the stain, the method of spotting to be used, the selection of the proper chemicals or agents, the effect of various substances on fabric structure, the use of the various tools, and special problems encountered.

MAHER, JENNIE WISNESKI

Silk finishing. Revised edition. Silver Spring, Md.: National Association of Dyers and Cleaners of the United States and Canada, 1943. 278 p. illus. 19 cm. \$3.50. 4588

Contents: Introduction. Equipment and accessories for general finishing. Equipment and accessories for specialty finishing. Fibers and fabrics. Sizings and finishes. General finishing. Finishing the decorative details. Special problems of the finisher. Linings in women's garments. Specialty finishings: Velvets, knit blocking, pleating and futing. The sewing department. Inspection, assembly, and packaging. Suggestions for the plant engineer. Water pressure boosters. Index.

Note: A working manual and reference book for students and workers in the drycleaning industry. It deals with the restoration of the original appearance, shape, and size of silk garments by applying steam, water, air, and dressings and sizings, in conjunction with heat and pressure, using hand and mechanical methods. The revised edition has been prepared to serve also as a textbook in the association's vocational school at Silver Spring, Maryland.

RANDALL, CLARE BERT

The drycleaning department; manual of cleaning room practice. Revised edition. Silver Spring, Md.: National Association of Dyers

and Cleaners of the United States and Canada, 1940. 218 p. illus. 19 cm. \$3.50. 4588a

Contents: Marking and inspection. Preliminary steps in dry-cleaning. Petroleum solvents and soaps used in them. Standard practice runs. Specialty cleaning. Factors in cleaning room practice. Clarification by chemical treatment. Clarification by distillation. Clarification by filtration. Clarification by settling and by centrifugal force. Cleaning with chlorinated solvents. Storage. Glossary. Index.

Note: A practical textbook for workers in the cleaning industry. It deals with methods of cleaning by immersion in drycleaning solvents used in washers, clarification of solvent after use, operation and care of the equipment. It also includes chapters on marking-in or identification of garments, testing of solvent, and storage of garments.

Clocks and Watches

CHAMBERLAIN, PAUL MELLEN

It's about time. New York: Richard R. Smith, 1941. 490 p. illus. 27 cm. \$7.50. 4588b

Contents: Preface, by Margaret Graham Chamberlain. Introduction, by W. Barclay Stephens. Major Paul M. Chamberlain, an appreciation, by Jean Louis Roehrich. Part I, Escapements: The lever escapement. Evolution of watch escapements. Development of the escapement; bibliography. Early clock escapements. Arnold pocket chronometer. Early Arnold marine chronometer. Alternate impulse chronometer. Antoine Tavan's prize chronometer. Mozart's three-wheeled chronometer lever. Slow revolving escapement. Jeunet seconds beating watch. Some variations in escapements. Part II, Experiments and unusual timepieces: Brendet's pendule sympathique. Watch regulators. Development of the motor barrel. Alarm and striking watches. Sunrise-sunset watch. Raingo's astronomical clock. Otay watch venture. Part III, Famous watchmakers: Seventeenth-century watchmakers. Eighteenth-century watchmakers. Nineteenth-century watchmakers. Biographical sources. Index.

Note: This posthumous work by a distinguished clock and watch collector was planned before the author's death and was prepared for publication by his widow, Margaret Graham Chamberlain. It consists of a compilation of articles published over a period of 25 years. The author was an engineer by profession who turned to horology first as a hobby and eventually became an authority in the field. The work is illustrated with drawings by the author and by photographs of timepieces in his collection. The index makes the work useful as a reference book.

KELLY, HAROLD CALEB

A practical course in horology. Peoria, Ill.: The Manual Arts Press, 1944. 192 p. illus. 20 cm. \$2.75. 4589

Contents: Wheelwork. Gearing. Lever escapement. Controlling mechanism. Train problems. Jeweling. Making a balance staff. Pivoting. Fitting balance springs. Escapement adjusting. Cleaning and oiling. Preliminary notes in adjusting. Position adjusting. Adjustment to isochronism. Adjustment to temperature. Practical work of adjusting.

Note: A clearly-written manual designed for the man actually engaged in watchmaking or repairing and for students. The book is divided into three main parts: general principles, practical repairing, and adjusting. Review questions are given at the end of each chapter, the answers to which are embodied in the text. A brief bibliography and a nine-page glossary of terms are appended.

RAWLINGS, ARTHUR LIONEL

The science of clocks and watches. New York: Pitman Publishing Corporation, 1944. 236 p. illus. 23 cm. \$3.50. 4589a

Contents: Preface. Time and its measurement. Oscillatory motion. The pendulum. Dissipation of energy by a swinging pendulum. Escapements and other impulse devices. Electric pendulum clocks. Escapement errors. Balance-wheel clocks and watches. Isochronism of balance-wheel movements. The marine chronometer. The four-hundred-day clock. Gear trains. Weights, mainsprings and their accessories. Friction and lubrication. On the selection and management of a domestic clock. On the selection of a good watch. Synchronous electric-motor clocks and the quartz-crystal clock. Appendix: Harmonic motion in a cycloidal

path and the calculation of circular error. Bibliography. Index.

Note: This book treats of horology as a science, as distinguished from horology as an art and a craft. While concerned primarily with scientific principles, it contains enough descriptive matter to be self-contained. Some historical matter is also included. Elementary mathematical demonstrations are introduced where necessary, particularly where a controversial issue might be involved.

Fire Prevention and Extinguishing

NATIONAL FIRE PROTECTION ASSOCIATION

Crosby-Fiske-Forster handbook of fire protection, Robert S. Moulton, general editor. Ninth edition. Boston: National Fire Protection Association, International, 1941. 1308 p. illus. 17 cm. \$4.50. 4590

Contents (abridged): Fire losses and fire protection laws and regulations. Common hazards. Retarding spread of fire. Fire-resistant construction. Fire retardant treatments. Public fire protection. Public water supplies. Fire pumps. Tanks. Types of automatic sprinklers. Sprinkler maintenance problems. Signaling systems and thermostats. Self inspection of fire equipment. Private fire organization. Salvaging operations. Transportation fire safety. Farm and forest fire protection. Mine fires and explosions. Conflagration hazards and protection. Tables and charts. Index.

Note: The authors of previous editions of this handbook, Everett W. Crosby, Henry A. Fiske, and H. Walter Forster, donated to NFPA their rights in the work and also gave their advice on revisions. The aim of the work is to provide all information on fire, hazards, and protection that has been adopted as standard practice in the United States.

NATIONAL FIRE PROTECTION ASSOCIATION

Fire protection engineering, a symposium of papers presented at a summer conference at the Massachusetts Institute of Technology, Cambridge, Massachusetts, June, 1942. Boston: National Fire Protection Association, International, 1943. 196 p. 24 cm. \$2.00. 4590a

Contents: Importance of fire protection and the war, by Dr. Karl T. Compton. Fire losses in the home, by Horatio Bond. Fire protection education, by J. B. Finnegan. Fire losses in business, by Erwin H. Schell. Principles of fire insurance, by Laurence J. Ackerman. Occupancy fire hazards, by Edward R. Schwarz. Fire and the control of fire, by Arthur R. Davis. Common fire hazards, by Harvey C. Abbott. Homes and business buildings, by Walter C. Voss. Construction details for fire protection, by Howard R. Staley. City planning and zoning, by Frederick J. Adams. Political obstacles to legislation, by Walter J. MacCormack. Public fire departments, by Samuel J. Pope. Water supplies, by Thomas R. Camp. Private fire protection, by A. L. Brown. Hazardous processes and materials, by N. J. Thompson. Fire protection information, by Horatio Bond. Fire protection in home and business, by Robert S. Moulton. Appendix: Fire losses. United States, 1900-1941.

Note: The papers in this limited edition were originally presented at a conference sponsored by the National Fire Protection Association and the School of Architecture and the Department of Building Engineering and Construction of the Massachusetts Institute of Technology. During the war general public interest in fire protection was heightened because of the possibility of fire from incendiary bombs and sabotage. Fires increased in industrial plants. The sponsoring organizations aimed to provide in this collection practical information and assistance to city and state officials and to schools and colleges training persons for fire prevention work.

NATIONAL FIRE PROTECTION ASSOCIATION

Industrial fire brigades training manual. Edited by Emmett T. Cox, W. Fred Heisler, and Horatio Bond. Boston: National Fire Protection Association, International, 1943. 178 p. illus. 28 cm. \$1.50. 4590b

Contents: The industrial fire brigade. Forcible entry practices. Rope work. Fire extinguisher practices. Ladder practices. Hose practices. Salvage and overhaul practices. Fire streams. Ventilation practices. Periodic inspection of plant fire protection equipment. Care of fire brigade equipment. Fire causes and fire hazards. Fire fighting procedure. Flammable liquid and fires and special extinguishing systems. Electrical fires. Gas masks and rescue practices.

Note: The manual is designed primarily for use in classes in industrial establishments where employees are assigned to carry out fire fighting duties. Emphasis is put on training classes, drills, and the need for utilizing the availability of modern developments in fire prevention and fighting. Illustrations and diagrams are well selected for the purposes of instruction.

NATIONAL FIRE PROTECTION ASSOCIATION

National fire codes for building construction and equipment. Compiled by Robert S. Moulton. Boston: National Fire Protection Association, International, 1944. 511 p. illus. 24 cm. \$3.00. 4590c

Contents (abridged): Definitions and references to other standards. Life safety from fire. Restricting spread of fire. Chimneys and smoke pipes. Building equipment. Building details. Occupancy standards. Construction operations. Fire tests. Index.

——National fire codes for extinguishing and alarm equipment. Compiled by Robert S. Moulton. Boston: National Fire Protection Association, International, 1943. 669 p. illus. 23 cm. \$3.00. 4590d

Contents (abridged): Automatic sprinklers and water supply. Extinguishers and hose. Special extinguishing systems. Public protection, municipal and rural. Alarm and supervisory systems. Employee organization. Miscellaneous.

——The national fire codes for flammable liquids, gases, chemicals and explosives. Compiled by Robert S. Moulton. Boston: National Fire Protection Association, International, 1943. 502 p. 23 cm. \$3.00. 4590e

Contents (abridged): Part I, Flammable liquid storage and handling: Flammable liquids ordinance. Rooms, cabinets, and outside houses. Concrete fuel oil tanks. Petroleum wharves. Freeing tanks of flammable vapors. Tank truck ordinance. Part II, Oil and gas burning equipment: Oil burner ordinance. Range oil burner ordinance. Kerosene or oil stoves. Gasoline stoves, blow torches, vapor lamps and systems. Part III, Liquefied petroleum gases. Part IV, Utilization of flammable liquids. Part V, Gases. Part VI, Refrigeration and fumigation. Part VII, Explosives and nitrocellulose materials. Part VIII, Tables of properties of hazardous chemicals and flammable liquids. Part IX, Flash point tests. Committee personnel. Index.

——National fire codes for the prevention of dust explosions. 1944. Sponsored by National Fire Protection Association, United States Department of Agriculture. Approved by American Standards Association as indicated in the several codes herein. Boston: National Fire Protection Association, International, 1944. 176 p. illus. 24 cm. \$2.00. 4590f

Contents (abridged): Fundamental principles for the prevention of dust explosions in industrial plants. Aluminum bronze powder. Magnesium powder or dust. Coal pneumatic cleaning plants. Flour and feed mills. Pulverized fuel systems. Spice grinding plants. Starch factories. Sugar and cocoa. Sulphur dust explosions and fires. Terminal grain elevators and storage units. Country grain elevators. Wood flour manufacturing establishments. Woodworking plants. Inert gas for fire and explosion prevention. Record of dust explosions in the United States.

Note: The four titles listed directly above are collections of recommended codes, ordinances, and recommendations of good practice. The National Fire Protection Association publishes them in an advisory capacity only, but they are widely followed in the United States as the basis of statute law, as guides for

governmental administrative authorities, and for insurance purposes. Special efforts are made to suggest practices that will provide reasonable safety without prohibitive expense. New and revised editions of these texts always contain important added material and revisions.

SHEPPERD, FREDERICK

Fire service hydraulics. New York: Case-Shepperd-Mann Publishing Corporation, 1941. 254 p. illus. 21 cm. \$3.00. 4591

Contents: Principles of hydraulics. Suction and drafting of water. Velocity and discharge. Friction loss calculations. Calculating engine and nozzle pressures. Fire hydrants and mains. Fire streams. Sprinkler system calculations. Pumps. Appendix tables. Index.

Note: A textbook intended for firemen preparing to take examinations for promotion in city fire departments. The author has treated both elementary and advanced aspects of the subject. The appendix contains miscellaneous reference tables together with the official fire stream tables of the National Board of Fire Underwriters.

UNITED STATES. NATIONAL PARK SERVICE

Prevention and control of fire losses. A handbook, by Frank L. Ahern. Washington, D.C.: Government Printing Office, 1943. 53 p. illus. 19 cm. Paper, \$0.10. 4592

Contents: Foreword. Acknowledgments. Management incentives in fire-loss prevention: Safety to life. Continuity of operation. Savings in insurance costs. Control of fire losses. Recommended management procedures for safeguarding properties against fire: Designation of responsible official. Review of plans of new buildings. Review of plans of private water systems. Fire reports and their analysis. Compilation of fire-loss statistics. Self-inspections. The human element. Private fire brigade. Care of equipment. Purchase of suitable equipment. Temporary construction. Plan of fire-protection facilities. Watchman's service. Fire-alarm systems. Cooperation with local fire department. Appendixes.

Note: This handbook presents in brief form a procedure for the prevention and control of fire losses. It contains some fundamentals of construction, operation, and protection which have a bearing on fire protection and control. The author is Chief of the Safety Division of the National Park Service and Chairman of the Committee on Health and Safety of the United States Department of the Interior.

Glassmaking

MOREY, GEORGE WASHINGTON

The properties of glass. New York: Reinhold Publishing Corporation, 1938. 561 p. illus. 23 cm. (American Chemical Society monograph series. No. 77) \$12.50. 4593

Contents: General introduction. Preface. The history and definition of glass. The devitrification of glass. The composition of glass. The chemical durability of glass. The viscosity of glass. The annealing of glass. The surface tension of glass. The heat capacity of glass. The heat conductivity of glass. The density of glass. The coefficient of expansion of glass. The elastic properties of glass. The strength of glass. The thermal endurance of glass. The hardness of glass. The optical properties of glass. The electrical conductivity of glass. The dielectric constant, dielectric loss, and dielectric strength of glass. The magnetic properties of glass. The constitution of glass. Index.

Note: Due to the technical nature of this monograph, it is best suited to advanced students, physicists, and chemists. The text is well documented by bibliographical footnotes.

PHILLIPS, CHARLES JOHN

Glass: the miracle maker, its history, technology and applications. New York: Pitman Publishing Corporation, 1941. 424 p. illus. 23 cm. \$4.50. 4594

Contents: The glass of years gone by. Glass today. The chemistry of glass. The mechanical properties of glass. Other physical properties of glass. Materials handling. Fuels, refractories, furnaces, and the melting process. The principles of glassworking. Glassworking machinery. Finishing, annealing, decoration and inspection. Glass in architecture and building construction. Glass in the home. Glass in electrical transmission and communication. Glass in illumination. Glass in manufacture. Glass in science and research. Fiber glass. Index.

Note: A non-technical work written chiefly for the lay reader. The volume is well illustrated and serves to emphasize the versatility of glass in the modern world. Brief lists of references are given at the end of each chapter.

SCHOLES, SAMUEL RAY, EDITOR

Handbook of the glass industry; a book of reference for the factory engineer, chemist and plant executive. New York: Ogden Publishing Company, 1941. 209 p. illus. 23 cm. \$3.50, U.S.; \$3.50 plus postage at \$0.12 per pound, foreign countries. Book with wrapping, 2 lbs. 4595

Contents (abridged): Raw materials. Numerical tables. Conversion tables. Glass-house fuels. Compressed air. Properties of glasses. Furnaces. Pyrometers. Ware defects. Glossary of glass-house terms. Advertising index; buyers' guide.

Note: A reference book for use in the industry by glassmakers, production men, laboratory technicians, and executives. Much of the data is presented in the form of graphs and tables.

SCHOLES, SAMUEL RAY

Modern glass practice. Second edition. Chicago: Industrial Publications, Inc., 1941. 289 p. illus. 23 cm. \$6.00. 4596

Contents: The glassy state. Elementary chemistry for glass-making. The glass-forming oxides. Glass composition and crystalline phases. Chemical composition of commercial glasses, by Donald E. Sharp. Raw materials. Batches and calculations. Handling and mixing raw materials. Combustion and fuels. Furnaces. Viscosity. The melting process. The principles of glassworking. Mechanical glassworking. Strain and annealing. Color. Opal and alabaster glasses, by H. H. Blau. Decorative processes. Mechanical properties of glass, by Frank W. Preston. Other physical properties. Weathering and durability. Testing glass and glassware. Optical glass. Defects in glassware. Glasshouse refractories. Index.

Note: A practical text designed for laymen, students, executives, and operators in glass-factories. This revision of the 1935 edition has added new illustrations and examples. In other respects both editions are essentially identical, even to bibliographical references which have not been changed.

WRIGHT, ROBERT HAMILTON

Manual of laboratory glass-blowing. Brooklyn, N.Y.: Chemical Publishing Co., Inc., 1943. 90 p. illus. 22 cm. \$2.50, U.S.; \$2.90, foreign countries. 4597

Contents: Glass. Gas burners. The tools. Fundamental operations. The splicing torch. More advanced operations. Some special operations.

Note: This brief manual for beginners deals primarily with glass-blowing required in producing special apparatus for special purposes. Following a non-technical discussion of materials and tools, fundamental operations lead to special techniques such as blowing of bulbs, seals, condensers, vacuum jackets, McLeod gauge, sealing in wires, sealing borosilicate to soft-glass joints, and similar jobs.

Household Repairing

BEDELL, EARL L., AND ERNEST G. GARDNER

Household mechanics; industrial arts for the general shop. Scranton, Pennsylvania: International Textbook Company, 1937. 130 p. illus. 28 cm. \$1.34. 4598

Contents: The care of plumbing fixtures. The care of doors and windows. Electric appliances in the modern home. Metal working. Woodworking. Wood finishing. The care of tools. Using rope and twine. Using concrete, mortar, and plaster. Index.

Note: Jobs in this laboratory manual have been selected from the standpoint of their interest to the boy of junior high school age and their practical application in the actual repair work in and around the house. Sufficient information on each subject is incorporated in the text, and most problems are illustrated and followed by additional questions and self-appraisal guides. The book is useful also to the home owner interested in making his own repairs.

WHITMAN, ROGER BRADBURY

First aid for the ailing house. Third revised edition. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1942. 359 p. illus. 21 cm. \$2.50. 4598a

Contents: Preface. House heating. Plumbing. Concrete. Painting. Metal work. Walls. Roofs and windows. Inside walls. Floors. Interior woodwork and tilework. Heatproofing a house. Cellars. Rainfall and condensation. Cleaning: spot and stain removal. Furniture. Insect control. Outdoor damage. Miscellaneous. Information on houses. Index.

Note: This is a practical handbook of information for homeowners, particularly in the United States. Much of the information contained in the work was gathered by the author in the course of preparing a syndicated newspaper column. The first and second editions appeared in 1934 and 1938. The third edition incorporates new information, including instructions for extending the life of parts of the house likely to wear; sheet metal parts, such as gutters and flashings; and suggestions for the conserving of materials, such as paints and paint brushes.

Knots and Splices

ASHLEY, CLIFFORD WARREN

The Ashley book of knots. Garden City, N.Y.: Doubleday, Doran & Company, Inc., 1944. 620 p. illus. 28 cm. \$7.50. 4600

Contents: On knots. Occupational knots. Knob knots: single-strand stopper or terminal, single-strand lanyard, single-strand button, multi-strand stopper or terminal, multi-strand lanyard, two-strand lanyard, multi-strand button tied in hand, multi-strand button tied on table. Single-loop knots. Double- and multiple-loop knots. The noose. Knots tied in the bight. Clove hitch and other crossing knots. Binding knots. Turk's-head. Bends. Shroud knots (multi-strand bends). Belaying and making fast. Hitches to spar and rail (right-angle pull). Hitches to masts, rigging, and cable (lengthwise pull). Hitches to stake and post, pile and bollard. Ring hitches. Hooks, becketts, and toggles. Miscellaneous holdfasts. Occasional knots. Lashings and slings. Monkey's fist and other knot coverings. Flat or two-dimensional knots. Fancy knots—square knottings. Tricks and puzzles. Long and short splices (multi-strand bends). Eye splices (multi-strand loops). Odd splices. Chain and crown spinnets. Plat sinnets. Solid sinnets. Practical marlingspike seamanship. Decorative marlingspike seamanship (applied knots). Bibliography. Glossary. Index.

Note: Over 3,800 knots, sinnets and splices are described and drawn by the author-artist, with emphasis on the practical uses of the knots. There is a six-page bibliography and a glossary listing about 500 knot terms.

GRAUMONT, RAOUL, AND JOHN HENSEL

Encyclopedia of knots and fancy rope work. Third edition. Completely revised and enlarged by Raoul Graumont. New York: Cornell Maritime Press, 1943. 673 p. 25 cm. \$5.00. 4601

Contents: Notes on the history of knots and rope making. Elementary rope work. Simple knotting. End rope knots. Rope splicing. Coxcombings. Turk's heads. Sennit braiding. Ornamental knotting. Macramé tatting, fringe, and needle-work. Useful rope designs. Miscellaneous knotting. Splicing wire rope. Terminology. Glossary. Index.

Note: A compendium of knot lore of land and sea, including a history of knots from earliest times. Included are descriptions, instructions for tying, and photographic illustrations of knots and ties of interest to seamen, soldiers, surgeons, farmers, and others. This third edition provides added material on ornamental and miscellaneous knots.

Leather

WILSON, JOHN ARTHUR, AND HENRY BALDWIN MERRILL

Analysis of leather and materials used in making it. New York: McGraw-Hill Book Company, Inc., 1931. 512 p. illus. 24 cm. \$7.00.

4602

Contents: Preface. Introduction. Chemical analysis of skin and leather. Microscopic examination of skin and leather. Physical properties of leather. Bacterial counts. Measuring enzyme activity. Measuring pH value. Beamhouse materials and liquors. Vegetable tanning materials. Chrome tanning materials and liquors. Fat liquoring and stuffing materials and liquors. Coloring, finishing, and miscellaneous materials. Preparation of standard solutions. Author index. Subject index.

Note: This book gives in convenient form working directions for the analysis and testing of leather and all the more important materials used in making leather, brief discussions of the principles upon which the methods of analysis are based, shortcomings of the methods, common sources of error, and interpretations of the results obtained. Average or typical analyses, most of which were made in the authors' laboratories, are given as illustrations. Separate bibliographies (complete as of 1929) are included under each chapter.

WILSON, JOHN ARTHUR

Modern practice in leather manufacture. New York: Reinhold Publishing Corporation, 1941. 744 p. illus. 23 cm. \$9.50.

4603

Contents: Preface. Hides and skins and their histology. Preparing hides for the market. Domestic production and imports of hides and skins. Government regulations on imported hides and skins. Hide damages. Purchasing hides and skins. Handling raw stock as received at the tannery. Unhairing. Bating. Vegetable-tanning materials and their properties. Vegetable tanning. Chrome tanning. Miscellaneous tannages. Light leathers from tanning to fatliquoring and mold control. Fatliquoring, stuffing and dyeing light leathers. Drying light leathers and mechanical operations. Finishing light leathers. Sole and heavy leathers. The properties of leather. Glossary. Name index. Subject index.

Note: This practical book on leather is written in a language familiar to everyone engaged in leather processing and manufacturing. It covers all stages of leather manufacturing, from the skins on living animals to the numerous types of finishes used on leather products. Properties of leather, drying and finishing leathers are discussed and many photomicrographs illustrating the principles of the histology of skins are given. It is designed especially for direct application to operating problems in the hide and leather industry. Detailed instructions for making enough different kinds of leather to provide the tanner with a sound knowledge of the principles underlying the manufacture of all kinds of leather are given, as well as descriptions of the problems daily confronting tannery operators, such as the nature and maintenance of pH and humidity control. It also deals with the sources of raw stock, trade practices, grading, tariff, market speculation, brokerage, storage, hedging, Government regulations and many other factors.

Lighting

AMICK, CHARLES L.

Fluorescent lighting manual. New York: McGraw-Hill Book Company, Inc., 1941. 312 p. illus. 23 cm. \$3.00.

4604

Contents: The fluorescent lamp. Auxiliary equipment. Operating characteristics. Installation hints. Service suggestions. Luminair selection. Fluorescent-lighting design. Color quality. Fluorescent applications. Lighting economics. Appendix. Index.

Note: A practical guide to the designing, selling, installing, and servicing of fluorescent lighting.

BARROWS, WILLIAM EDWARD

Light, photometry and illuminating engineering. Second edition. New York: McGraw-Hill

Book Company, Inc., 1938. 445 p. illus. 23 cm. \$4.00.

4605

Contents: Light and vision. Photometric standards, units and nomenclature. Sources of light. Gas and vapor lamps. Principles of photometry and types of photometers. Portable photometers and apparatus for obtaining distribution of light from a luminous source. Light-flux calculations and spherical photometry. Principles of interior lighting. Illumination calculations and design. Modern lighting. Interior lighting practice. Lighting for recreation and sport. Principles of street and highway lighting. Lighting the highways and airways.

Note: An engineering treatment of illumination and the design of lighting equipment. Besides covering the principles of light and vision, principles and methods of measuring light, calculations, etc., the book gives a full treatment of practical methods needed by the engineer in selecting lighting equipment and designing lighting systems of various types. About two thirds of the material in this second edition does not appear in the first edition. There are chapter bibliographies.

BOAST, WARREN BENEFIELD

Illumination engineering. New York: McGraw-Hill Book Company, Inc., 1942. 274 p. illus. 23 cm. \$3.00.

4606

Contents: The spectroradiometric function. The luminosity function. The illumination system. Entities in the illumination system and their units. Measurement of illumination. Geometric graphs and their applications. Determination of illumination from surface and line sources. Absorption, reflection and transmission of luminous flux. Electrical light sources and their operating characteristics. Illumination standards. Design of interior lighting systems using commercial luminaires. Luminous architectural elements. Testing of illumination systems by samples and models. Design of floodlighting systems. Design of street-lighting systems.

Note: Presents in detail the fundamental concepts of illumination, their historical background, and the interrelationships among these ideas which are the basis of our illuminating systems today. Following a consideration of the present electrical sources of light, the latter sections of the book deal with the design and testing of illuminating systems.

CARRELL, MARIE

State requirements for industrial lighting. A handbook for the protection of women workers, showing lighting standards and practices. Washington, D.C.: Government Printing Office, 1932. 65 p. 22 cm. (United States. Women's Bureau. Bulletin no. 94) Paper, \$0.10.

4607

Contents (abridged): Some basic considerations. The importance of good lighting from the standpoint of eye fatigue. Code of the American Standards Association. State lighting codes. State lighting requirements other than lighting codes. Appendix.

Note: A report on the lighting of factories, mills, and other work places employing women, showing the importance of good lighting to the safety of the workers, and analyzing in detail various lighting codes.

CROFT, TERRELL WILLIAMS

Practical electric illumination and signal-wiring methods. Revised by George H. Hall. Third edition. New York: McGraw-Hill Book Company, Inc., 1939. 351 p. illus. 21 cm. \$3.00.

4608

Contents: Part I, Practical electrical illumination: Fundamental ideas of light radiation. Principles of illumination. Principles of reflection. Incandescent lamps. Vapor and gas lamps. Luminaires. Illumination engineering. Interior illumination. Exterior illumination. Part II, Signal wiring methods. Signal wiring diagrams.

Note: Gives practical men the principles, rules, methods, diagrams, etc., needed in handling many electrical jobs. Covers illumination in all its aspects, analysis of lighting requirement, design of circuits, selection and installation of fixtures, etc., including mercury-vapor and sodium-vapor lamps and sports field lighting. Also covers signal wiring in line with Code requirements, giving both methods and a collection of signal circuit diagrams.

HIGBIE, HENRY HAROLD

Lighting calculations. New York: John Wiley & Sons, Inc., 1934. 503 p. illus. 23 cm. \$5.00.

4609

Contents: Why bother about lighting calculations? Illumination and light flux. Candlepower, and point source of light. Brightness. Surface sources of light. Linear sources. Multiplying light by reflections in an enclosure. Utilization coefficient: efficiency of the lighting system. Lamps: light generators. Visual effectiveness of lighting. Index.

Note: The wealth of basic material in this book is illustrated by diagrams, and by photographs of actual lighting arrangements. The contents cover practical applications of fundamental theory, as well as the theory itself.

ILLUMINATING ENGINEERING SOCIETY

American recommended practice of industrial lighting, approved March 17, 1942, by American Standards Association. Prepared under the sponsorship of Illuminating Engineering Society. New York, N.Y., 1942. 51 p. illus. 23 cm. Paper, \$0.25.

4610

Contents: Advantages of good illumination. Light and safety. Factors of good illumination. Maintenance of illumination. Natural lighting. Artificial lighting. Adequate lighting. Rewiring. Bibliography.

Note: This is the third revision of the *Code of lighting for factories, mills and other work places*, first issued in 1915 by the Society. The primary purpose is to present the principles of good lighting practice, and to stress the correlation between lighting and plant safety, the salient differences between good and poor illumination, and some of the precautions to be observed. There is a table of recommended minimum illumination standards for various industrial interiors.

ILLUMINATING ENGINEERING SOCIETY

Experiments with light. Practical problems for students in science. New York: Illuminating Engineering Society, 1941. 60 p. illus. 22 cm. Paper, \$0.25.

4611

Contents (abridged): Variation of daylight. Glare and how to reduce it. Distribution of artificial light. Selection of lighting units. Reflection of light and its measurement. Reflector shapes. Transmission of light. Wiring for lighting. White light and colored light. Portable luminaires. Selection. Light for seeing. Conclusion.

Note: This booklet is presented as a non-technical manual on lighting, both artificial and natural, arranged in the form of a series of simple demonstrations showing the applications of the fundamentals of light to the practical problems of lighting. Intended for the use of teachers of physics or science, students, and for the interested layman. The experiments require only simple, low cost material, and may easily be performed in the classroom or lecture hall.

ILLUMINATING ENGINEERING SOCIETY

Illuminating engineering nomenclature and photometric standards; American standard, approved February 27, 1942, by American Standards Association. Prepared under the direction of and issued by Illuminating Engineering Society. New York, 1942. 42 p. 23 cm. Paper, \$0.25.

4612

Contents: Photometric quantities. Radiation. Evaluation. Evaluation of ultraviolet radiation. Color. Illuminants. Material and accessories modifying distribution of light. Classes and characteristics of illumination. Photometric standards and tests. Aeronautic lighting. Units, symbols, and abbreviations. Equivalents and conversion factors. Index.

Note: This is the ninth revision of the Society's set of definitions first published in 1910 as a means of classifying and standardizing the nomenclature of its field. The present revision rearranges and rennumbers the definitions to conform with the system adopted by the American Standards Association's Sectional Committee on Electrical Definitions and constitutes group 55—Illuminating Engineering, in that system.

KRAEHNBUHL, JOHN OTTO

Electrical illumination. New York: John Wiley & Sons, Inc., 1942. 441 p. illus. 23 cm. \$3.75.

4613

Contents: Introduction. Objective specifications of illumination. Subjective specification of illumination. Color and shadow. Distribution curves and point-by-point method of determining illumination. Electrical incandescent and gaseous light sources. Light control. General illumination design. Luminous architectural elements. Floodlighting. Novelty lighting. Maintenance and economics—automatic control. Wiring. Appendix. Author index. Table index. Subject index.

Note: Supplies the detailed and specific information which the engineer and the architect need in designing, installing, and operating electric lighting systems. It is not a highly technical study of the pure theory of illumination; it covers actual lighting practice as well as the fundamental principles underlying the practice. An understanding of algebra and trigonometry is all the mathematics required. There are 76 tables of important data and 46 fully worked-out problems demonstrating application of the principles.

KUNERTH, WILLIAM

A textbook of illumination. Second edition. New York: John Wiley & Sons, Inc., 1936. 276 p. illus. 23 cm. \$3.00.

4614

Contents: Non-electric illuminants. Electric illuminants. Photometry. Mean spherical candlepower. Illumination measurements. Luminaires. Brightness and glare. Direct and indirect lighting. Light projection. The eye and color. Standard lamps. Street lighting. Daylight. Recreational lighting. The lighting of public buildings. Residence lighting. Industrial lighting. Commercial lighting. Laboratory manual. Index.

Note: A short but comprehensive study of illumination. The subject matter is limited to the fundamental laws of illumination, brief discussions of present methods of illumination measurement, and short descriptions of standards of illumination and lighting installations. A number of problems illustrating the text material are included with each chapter to assist the reader in the interpretation and application of the principles.

LUCKIESH, MATTHEW

Light, vision and seeing. A simplified presentation of their relationships and their importance in human efficiency and welfare. New York: D. Van Nostrand Company, Inc., 1944. 323 p. illus. 21 cm. \$4.50.

4615

Contents: This changing world. Appalling prevalence of eye-defects. Light and sight. Milestones of lighting progress. What makes things visible. Brightness is omnipotent. The role of size. The importance of brightness-contrast. It takes time to see. Visual acuity. Test-charts and their limitations. Meaning and measurement of visibility. Ease of seeing. Brightness engineering. Light and color. Efficiency, safety and easy seeing. One hundred questions. References. Index.

Note: A readable and informative account of the mechanical and physiological aspects of seeing in relation to light and brightness, written for the lighting engineer, the optometrist, the industrial engineer, and the interested layman. The author has attempted to combine fundamental facts with practical discussions in a way to be helpful to the largest number of persons interested in better seeing and ideal seeing conditions and their effects upon human efficiency and welfare. Complex data have been presented in simplified diagrams and discussions have been confined chiefly to controllable aids to seeing. A list of 53 general references is included.

LUCKIESH, MATTHEW

Torch of civilization; the story of man's conquest of darkness. New York: G. P. Putnam's Sons, 1940. 269 p. illus. 21 cm. \$3.00.

4616

Contents: Torch of civilization. Dramas of light. Swift and silent light. Mankind comes indoors. Flaming sources. Modern science evolves. Gas flames and mantles. Electric arcs. Glowing filaments. Luminous vapors. Fluorescent sources. Beacons of light. Light and sight. The lighting art. Painting with light. Challenging the sun.

Note: A history of the development of artificial lighting from

earliest times to the present, written in non-technical terms for the general reader. New developments in mercury-vapor and sodium lamps, high-efficiency tungsten filaments, and experimental production of cold light are discussed, together with the relationships between light and sight, light and industrial efficiency, and light and art. There is no index.

MILLER, SAMUEL C., AND DONALD G. FINK

Neon signs; manufacture—installation—maintenance. New York: McGraw-Hill Book Company, Inc., 1935. 288 p. illus. 23 cm. \$3.00. 4617

Contents: Part I, Introduction—the neon sign industry: Fundamentals—the why and how of sign making. The luminous tube. Materials used in constructing tubes.—Rare gases, electrodes, glass tubing. Electrical equipment. The types of signs. Part II, Shop practice—from specifications to completed sign: Designing the sign. Glass bending. Pumping systems. Bombarding. Filling, testing, aging. Tube-mounting methods. Electric wiring, switching, electric testing. Installation and maintenance. Special applications of tubes. Tricks of the trade.

Note: This book shows how neon signs work, what materials and equipment affect the effectiveness and life of the sign, and gives specific instructions for installing shop equipment and for using it properly.

MOON, PARRY HIRAM

The scientific basis of illuminating engineering. New York: McGraw-Hill Book Company, Inc., 1936. 608 p. illus. 23 cm. (Electrical engineering texts) \$5.00. 4618

Contents: Fundamentals. The spectro-radiometric curve. Luminous flux. Radiation from gaseous-conduction sources. Radiation from incandescent sources. Incandescent lamps. Measurement of light. Illumination from point sources. Illumination from surface sources. Short cuts in calculating illumination. Elements of lighting design. Vision. Color. Design for seeing. Appendices.

Note: A logical presentation of the subject, designed particularly to present the fundamentals of radiation, illumination and vision for engineering college students. The book is based on the spectro-radiometric curve, instead of the standard candle, and covers such developments as the barrier-layer photoelectric cell, the sodium lamp, the high-pressure mercury lamp, and built-in lighting for interiors. A large amount of reference data is included.

SCHILLING, EUGENE WASHBURN

Illumination engineering. Scranton, Pa.: International Textbook Company, 1940. 294 p. illus. 21 cm. (International texts in electrical engineering, E. E. Dreese, consulting editor) \$2.75. 4619

Contents: Physical and physiological aspects of illumination. Photometry. Flux and candlepower calculations. Brightness and surface sources of light. Incandescent light sources. Recommended standards of illumination and wiring. Illumination design. Application of lighting equipment. Street lighting circuits. Street lighting design. Vapor and gaseous light sources. Sport lighting. Ultraviolet light: its production and utilization. Fluorescent lamps. Laboratory experiments. Index.

Note: Written as an introductory course for students who intend to specialize in illumination engineering and as a survey course for those who will not go further into the subject, this textbook gives sufficient training in fundamentals to enable intelligent progress in the field. Of value to utility men, architects, and city managers for approach to design as well as layout problems in lighting systems.

Model Making

JOHNSON, GENE

Ship model building. New York: Cornell Maritime Press, 1944. 242 p. illus. 23 cm. \$2.50. 4620

Contents (abridged): Hull blocks. Blocking and profiling. The cradle-bowsprit. Propellers. Planking. Bulwarks. Rails. Channels. Ladders. Ventilators. Anchors. Steering wheels. Hatches. Companionway housings. Lifeboats and other small stowed boats.

Ship's bells. Funnels. Wireless antennas. Fog horns and whistles. Miscellaneous fittings. Masts. Yards. Sails. Old-time guns. Modern armaments. Bases. Painting. Tools. Index.

Note: This book is intended for the novice, but will appeal to all who are interested in ships and their reproduction in models. The processes in model building are explained, from hull shaping and laying out to more complicated tasks. Suggestions are given for the preparation of home-made tools and devices, where ready-made ones are not available.

WINTER, WILLIAM JOHN

The model aircraft handbook. Illustrations by Paul Plecan and H.A. Thomas. New York: Thomas Y. Crowell Company, 1942. 306 p. illus. 20 cm. \$2.00. 4621

Contents: Types of model airplanes. Tools and materials. Preparation of working plans. Model aerodynamics and proportions. Construction. Fittings and parts. Landing gears and pontoons. Covering. Propellers. Points and finishes. Miniature gasoline engines. Indoor models. Flying and adjusting. Control-line flying. Radio control. Clubs and contests. Models in war. Appendix. Glossary. Index.

Note: This book presents complete, practical, and up-to-date information on all phases of model airplane construction and design. There are more than 100 detailed drawings, including airfoil and wing sections, and in the appendix is a series of three-view plans of famous models. An associate editor of *Air Trails*, the author traveled widely to select model airplane designs for publication.

Painting

CREWDSON, FREDERICK M.

Spray painting, industrial and commercial. Chicago: F. J. Drake & Company, 1941. 128 p. illus. 19 cm. \$1.50. 4622

Contents: Common paint pigments. Paints and enamels. Oil and spirit varnishes. Shellac. Lacquer. Synthetics. Equipment. The technique of spraying. Spraying standard materials. Spraying defects, their cause and remedy. Bronzes and their application. Flock, or suede, finishes. Striping and lettering. Pearl lacquer, the aristocratic finish. Spraying for national defense. "The sprayer's ten commandments." Index.

Note: Covers the fundamental principles of spraying technique, together with the latest developments and practice of this craft. It is intended as an instruction manual for spraygun operators who are employed in spray rooms of industrial concerns as well as in commercial studios such as sign shops, and in interior and exterior decoration.

DALZELL, JAMES RALPH, AND ALVAH HORTON SABIN

Painting and decorating; estimating. Chicago: American Technical Society, 1938. 152 p. illus. 21 cm. \$1.50. 4623

Contents: Kinds of paint. Materials. Specifications. Formulas. Exterior wood, metal, brick, concrete and stucco. Interior and exterior floors. Trim. Enamel. Plaster. Mixing paints. Varnish, shellac, stain and fillers. Interior painting. Aluminum paint. Brushes. Estimating labor and materials. Index.

Note: A plainly written manual on the mixing and application of ordinary paints and varnishes for beautifying and protecting the exteriors and interiors of houses, barns, garages, and other small buildings, with chapters on estimating and specifications. Includes wood, metal, brick, concrete, plaster, and stucco finishes.

MOLLESON, GILBERT COX

Paints and painting; a manual of the composition of paints and specifications for their use. Philadelphia: David McKay Company, 1939. 274 p. illus. 19 cm. \$2.00. 4624

Contents (abridged): Properties of paint films. Pigments and vehicles. Oil paints and enamels. Special paints. General methods and specifications for painting and varnishing. Special specifica-

tions for painting and varnishing. Terms and definitions. Index.
Note: Only the most commonly used paints and varnishes are treated in this practical book for painters, laymen, purchasing agents, and maintenance engineers. Formulae, properties of paints, and their correct application are described in non-technical terms.

NEWELL, ADNAH CLIFTON

Coloring, finishing and painting wood. Enlarged by the addition of six new chapters, including the finishing of metal. Peoria, Ill.: The Manual Arts Press, 1940. 480 p. illus. (part col.) 23 cm. \$5.50. 4625

Contents (abridged): Preparation of the surface of wood. Surface abrasives. Wood-stains and water-staining. Oil-stains. Spirit-stains and applying stains. Chemical stains. Colors and wood-stains. Dyes useful as stains. Wood fillers. Spirit-varnishes. Enamels and enameling. Oil or oleoresinous varnishes. Lacquers—history, uses, and composition. Lacquer finishes and lacquer technique. Paint and painting. Varnish evolution. Synthetic resins. Quick-drying varnish characteristics and ingredients. Application of quick-drying varnishes. Blond and bleached wood finishes. Air-drying finishes for metal. Index.

Note: A practical book primarily intended to accompany a one-year course in wood-finishing, but useful also as a self-instruction text and reference book for men in the industry. This edition includes material on new dyes, finishes, and methods in addition to the descriptions of finishes and applications contained in the first edition. References are included at the end of most chapters.

VANDERWALKER, FRED NORMAN

Interior wall decoration: practical working methods for plain and decorative finishes, new and standard treatments; the new artistic and the novelty finishes; color stippling; glaze colors, Tiffany blending and mottling; spatter work; plaster staining; sand float; sponge-stipple; Spanish palm finish; Roman travertine; old English; Holland; French Caen stone; Italian plaster and other artistic rough textures; decorative wall panels; plain painting jobs and calcimining methods; preparing the surfaces; hanging wall fabrics; hanging wall paper. Second edition. Chicago: Frederick J. Drake & Company, 1941. 511 p. illus. 19 cm. \$3.00. 4625a

Contents: Preface. Introduction. Relation of walls to furnishings. Procedure in decorating. Preparation of surfaces. Wall sizing materials. Plain painting and enameling. Calcimine methods and materials. Radiator painting and decorating. Staining rough plaster walls. Tiffany glazing, mottling and blending. Sand-float finish. Sponge-stipple wall finishes. Spatter wall finish. Bronze Vernis Martin and metallic finishes. Historic and new rough wall textures. Lace stencil wall finish. Spray-gun decorative finishes. Hanging and painting wall fabrics. Decorative wall panels. Lining and striping. New wood veneer wall coverings. Stencil mural painting. The hanging of wall paper. Index.

Note: This handbook of interior wall decoration contains definite working methods in everyday use by decorators. It is intended to be of practical use to interior decorators, house painters, and others who are concerned with the methods, materials, and tools for interior wall decorating. The second edition brings up to date the earlier edition and contains additional material.

VANDERWALKER, FRED NORMAN

The mixing of colors and paints; description, properties, theory, harmony and management of colors; the mixing and use of colors and paints for interior decorating, house painting, arts and crafts, furniture and polychrome finishing. Second edition. Chicago: Frederick J.

Drake & Co., 1944. 292 (i.e. 310) p. illus. (part col.) 19 cm. \$2.00. 4625b

Contents: Color and light. Description of color pigments. Properties of color pigments. How colors are prepared for the trade. Basic paint pigments. Paint oils. Volatile thinners and driers. General paint mixing methods. Color theory, principles and use. Colored paint mixing methods. Mixing special purpose materials. Color harmony and management. Selecting color schemes. Printing inks. Index.

Note: This manual presents the principles of the science of color essential to a better understanding and use of color by students, apprentices, journeymen, printers, interior decorators, and master house painters, and reduces the statement of such principles to the most simple terms. New subject matter covering the mixing of colors and paints for floor finishing, cement, brick and stucco painting, metal surface painting, plaster wall painting, and enameling has been added in the second edition.

VANDERWALKER, FRED NORMAN

Wood finishing, plain and decorative; methods, materials, and tools for natural, stained, varnished, waxed, oiled, enameled, and painted finishes; antiqued, stippled, streaked and rough glazed finishes; stain making formulas. Revised edition. Chicago: Frederick J. Drake & Co., 1944. 361 p. illus. 19 cm. \$2.00. 4625c

Contents: Wood finishing in general. Preparation of new and old surfaces. Stains in general. Factory prepared stains. Water stains. Chemical water stains, acid and alkaline. Color pigment water stains. Spirit stains—aniline and coal tar dye stains. Oil stains. Varnish stains. Stain mixing; brushing and procedure; weights and measures. The mixing and use of wood fillers. Varnish and shellac. Varnishing, rubbing, polishing. Varnish defects and their cause. Lacquers—pyroxylin nitro-cellulose, shellac, Chinese and Japanese. Wax finishes and oil rubbed finishes. Painted interior wood trim. Enameled interior wood trim. Schedules of working operations. Interior trim woods—descriptions of characteristics. Brush graining. Decorative wood finishes by glazing and highlighting. Repairing damaged finishes. Index.

Note: A manual on modern materials and methods of wood finishing, covering both the practical and the artistic sides and intended for the professional use of painters, decorators, furniture workers, and craftsmen. The revised edition contains additional text and illustrations to bring the work up to date.

Paper

AMERICAN PULP AND PAPER ASSOCIATION

The dictionary of paper, including pulps, boards, paper properties and related papermaking terms. New York: American Paper and Pulp Association, 1940. 365 p. 23 cm. \$5.00. 4626

Contents: Preface. Acknowledgments. Philosophy of definitions. Classification and definitions of pulps. Classification of waste materials used in the paper and board industries. Definitions of papers, boards and papermaking terms. Bibliography.

Note: A semi-official dictionary prepared by a special committee working in conjunction with the Institute of Paper Chemistry. Special efforts were made to render the definitions in language that could be understood by persons outside the industry. The bibliography lists the more important American and British works containing definitions of paper terms.

AMERICAN SOCIETY FOR TESTING MATERIALS. COMMITTEE D-6 ON PAPER AND PAPER PRODUCTS

Paper and paperboard characteristics, nomenclature, and significance of tests. October, 1944. Philadelphia: American Society for Testing Materials, 1944. 108 p. 23 cm. Paper, \$1.50. 4627

Contents (abridged): Part I, Introduction. Part II, The action of water on paper and its significance. Part III, Definition of terms, nomenclature, and properties of various classes of paper

and paperboard. Part iv, Tests applied to paper and paperboards and their significance. Index.

Note: A monograph discussing the significance of the more commonly used tests and defining terms, nomenclature, and properties of paper related to these tests. Intended for persons working in the field but familiar with only a limited portion of it, and for those who must ascertain the methods of tests relating to the utility of a specific paper for a particular use.

CALKIN, JOHN BURGESS

Microscopy of paper, a bibliography. New York: Technical Association of the Pulp and Paper Industry, 1937. 47 p. 23 cm. (TAPPI special bibliographies series. No. 1) \$1.00. 4627a

Note: In this list of about 790 references some material not dealing directly with microscopy has been included because of its relation to this field. In cases where the title of a reference does not indicate content sufficiently a brief abstract is given by the compiler, and location of other abstracts is noted. This may be considered a reasonably complete bibliography up to the date of its publication.

GRAFF, JOHN HENRY

A color atlas for fiber identification. Appleton, Wis.: The Institute of Paper Chemistry, 1940. 27 p. illus. (part col.) 36 cm. \$12.50. 4628

Note: In this work the colors produced in reactions between fibres important in the paper industry and standard stains are illustrated in color. Also included are directions for preparing and using the stains.

GRAFF, JOHN HENRY

Pulp and paper microscopy; second edition. Appleton, Wis.: The Institute of Paper Chemistry, 1942. 193 p. illus. 28 cm. \$5.00. 4629

Contents: Microscopic equipment needed in the pulp and paper mill. Micrometry. Fibers and fiber elements. Fiber analysis. Miscellaneous stains and reagents. Speck count and speck analysis. Microtome sectioning. Index.

Note: A textbook designed for the use of the class in fiber microscopy at the Institute of Paper Chemistry, but useful also to other students and to workers in the industry. It treats for students beginning the study of the subject the more important methods and techniques. The author has assumed that users of the book will have a thorough knowledge of the use of the microscope. The work is published in a loose-leaf binder.

HUNTER, DARD

Papermaking; the history and technique of an ancient craft. New York: Alfred A. Knopf, 1943. 398 p. illus. 23 cm. \$4.50. 4630

Contents (abridged): Writing substances of the ancients. Ts'ai Lun and the invention of paper. The first text printing upon paper. The hand-mould. The maceration of materials for papermaking. Early papermaking processes and methods. Paper as a sacred material. The paper and the papermakers of Europe and America during the early years of printing. Ancient watermarks. Latter-day watermarks. Papermaking materials. The paper-machine and its inventory. Printing revolutionizes papermaking. Handmade papers vs. machine-made papers. Chronology of paper and allied subjects—2700 B.C. to 1942 A.D. Bibliography. Notes. Index.

Note: A comprehensive history of papermaking from its invention in China, through its development with characteristic differences in other Oriental countries, its introduction into Europe and further development there, the enormous impetus given to it by the use of printing in the Western world, the quest for new papermaking fibres, and the invention of the paper-machine. For the general reader.

INSTITUTE OF PAPER CHEMISTRY

Catalog of the library, September, 1940. Decennial index—*Library notes*, volumes 1-10: 1930-1940. Appleton, Wis.: The Institute of Paper Chemistry, 1941. 622 p. 21 cm. (Institute

of Paper Chemistry, affiliated with Lawrence College, Appleton, Wisconsin. Bulletin) \$5.00. 4630a

Contents: Catalog of the library: Periodicals. Books and pamphlets. Author index. Decennial index—*Library notes*, volumes 1-10: Author index. Subject index.

Note: This volume is in two parts, the library catalog occupying the first third, the ten-year index to the Institute's *Library notes* occupying the last two thirds. The books and pamphlets in the library are listed alphabetically under subject, followed by an author index of 23 pages. The author index to *Library notes* covers 127 pages, followed by a subject index of 298 pages. The volume is of value as a bibliography of paper chemistry, as well as being an essential tool to those maintaining a file of *Library notes*.

JOINT EXECUTIVE COMMITTEE OF THE VOCATIONAL EDUCATION COMMITTEES OF THE PULP AND PAPER INDUSTRY OF THE UNITED STATES AND CANADA

The manufacture of pulp and paper; a textbook of modern pulp and paper mill practice, prepared under the direction of the Joint Executive Committee on Vocational Education representing the Pulp and Paper Industry of the United States and Canada. Third edition. New York: McGraw-Hill Book Company, Inc., 1937-39. 3 v. illus. 23 cm. \$6.50, each volume. 4630b

Contents (abridged): Volume iii: Properties of pulpwood. Preparation of pulpwood. Manufacture of mechanical pulp. Bleaching of pulp. Testing of pulp. Tables. Index. Volume iv: Pulping of rag and other fibers. Processing waste papers. Beating and refining. Fillers and loading. Sizing of paper. Paper coloring. Water and steam. Auxiliary mill equipment. Heating and ventilation. Index. Volume v: Paper-making machines. Hand-made papers. Paper finishing. Coated papers. Paper testing. Paper-making details. Index.

Note: These three volumes are part of a series of five textbooks covering every phase of modern pulp and paper mill practice, intended as a comprehensive course of instruction for home or classroom study for the apprentice and as a reference for the specialist. The first two volumes of the series, which may be omitted by students possessing a high-school education or its equivalent, are Clark's *Arithmetic, elementary applied mathematics, how to read drawings, elements of physics*, New York: McGraw-Hill Book Company, Inc., 1927, and Clark and Crossley's *Mechanics and hydraulics, elements of electricity, elements of chemistry*, New York: McGraw-Hill Book Company, Inc., third edition, 1938, 818 p., \$6.50. The present three volumes cover the manufacture, treatment, bleaching and testing of pulp, the pulping of rag and waste papers, with a description of the equipment used, the methods of paper finishing, and testing procedures. The section on mill equipment presents a brief outline of electrical theory as applied to motors and transformers, accompanied by a guide for trouble-shooters giving symptoms, causes, and remedies of operating defects. The chemistry of paper manufacture is given extended treatment, the reactions involved in each process being presented in detail and illustrated by charts and tabular data. There are numerous detail drawings of the various types of apparatus used in the industry, operations charts, and flow diagrams, together with references for further study and questions for examinations. The third edition incorporates the advances made in the industry during the decade 1929-39, including new types of machinery and new manufacturing methods.

KANTROWITZ, MORRIS SAMUEL, AND OTHERS

Permanence and durability of paper; an annotated bibliography of the technical literature from 1885 A.D. to 1939 A.D., by Morris S. Kantrowitz, Ernest W. Spencer, and Robert H. Simmons. Washington, D.C.: Government Printing Office, 1940. 114 p. 23 cm. (United States. Government Printing Office. Technical bulletin no. 22) Paper, \$0.15. 4630c

Contents: Introduction. Annotated bibliography of paper permanence and durability. Subject index. Author index.

Note: A listing in inverse chronological order of 290 articles which appeared in more than 100 paper trade journals and magazines published in the United States and abroad. More than half of the articles listed were published between 1930 and 1939. An annotation abstracts or describes each article included. Foreign titles are translated into English. The publication is intended to serve as a ready reference source to librarians, paper chemists, and others seeking a summary of information in the field.

SUTERMEISTER, EDWIN

Chemistry of pulp and paper making. Third edition. New York: John Wiley & Sons, Inc., 1941. 529 p. illus. 23 cm. \$6.50. 4631

Contents: Cellulose. Fibrous raw materials. Rags and non-woody materials. The sulfate process. The soda process. The sulfite process. Ground-wood. Miscellaneous pulping and pulp-treating processes. Bleaching. Sizing. Loading and filling. Coloring. Coated papers. Water. Testing wood pulp. Paper testing. Printing. Moisture relations of pulp and paper. Index.

Note: This book is an exposition of the chemical and technical processes important to the pulp and paper industry. Its usefulness extends to everyone concerned with the field. Only a knowledge of the elements of chemistry is prerequisite. The first two editions of this book were entirely the work of Mr. Sutermeister, but for this edition he has obtained the assistance of a number of collaborators. The third edition has been modernized, and consideration has been given to all important recent information, without increasing the size of the book too greatly. The more common methods of analysis, the details of which can be found easily in other places, have been omitted to give prominence to those more specialized and less easily found. The mechanical features of the industry are discussed only insofar as they are necessary for a satisfactory understanding of the chemistry involved.

WEST, CLARENCE JAY, COMPILER

Pulp and papermaking: bibliography and United States patents 1939. New York: Technical Association of the Pulp and Paper Industry, 1940. 252 p. 23 cm. \$3.00. 4631a

Contents: Preface. List of journals covered. Bibliography. Patents. Subject index. Author index.

Note: This volume lists under subject the pulp and papermaking literature published in books and pamphlets and in more than 160 periodicals and trade journals of all nations during the year 1939 and lists the United States patents for 1939 of interest to the pulp and paper industry. The bibliography contains references to reviews and abstracts. It supplements the compiler's *Bibliography of pulp and papermaking, 1900-1928*, New York: Lockwood Trade Journal Co., Inc., 1929, 982 pages. The volume covering the year 1939 was the last of several annual supplements to be issued. The patents listed were selected from the *Official gazette* of the United States Patent Office and are arranged according to the classification of the Patent Office.

WITHAM, GEORGE STRONG, SR.

Modern pulp and paper making, a practical treatise. Second edition. New York: Reinhold Publishing Corporation, 1942. 705 p. illus. 23 cm. \$6.75. 4632

Contents: Historical note. Processes by which pulp is produced. Materials of pulp. Varieties of paper. Saw mill. Wood room. Sulphite mill. Acid plant. Alkaline processes. Groundwood mill. Screening and refining of pulp. Bleaching. Beater room. Machine room. Finishing room. Converting and coating. Paper defects. General design of pulp and paper plants. Personnel and records. Power plant. Testing of paper and paper materials. Index.

Note: A comprehensive, practical description of the equipment and processes used in the pulp and paper plants of North America, intended for the practicing paper-maker. Important new developments have been added in this edition, but descriptions of older equipment and processes, still in use, have not been deleted. The soda and sulphite processes are now treated in one chapter, and there are two new chapters, one on screening and refining, the other on converting and coating. The appendix of tables of the 1920 edition has been omitted.

Plumbing

CLEVERDON, WALTER SHERMAN LYLE

Plumbing engineering for architects, engineers, plumbers, building superintendents, students and others interested in the sanitation of buildings and their surroundings. New York: Pitman Publishing Corporation, 1937. 445 p. illus. 22 cm. (Building engineering series) \$3.50. 4632a

Contents: Preface. Abbreviations. Useful equivalents. Part I, Water supply, appurtenances, hydraulics and pneumatics: Water, its effects on plumbing, the plumbing industry and the consumer. Hydraulics and pneumatics as encountered in plumbing. Chemical actions. Chemicals commonly found in waters in nature which affect plumbing, the industries and the consumer. Water supply and consumption. Pumps for water supplies, sewage and drainage. The water supply piping of buildings. Meters and their application. The selection, setting, care and maintenance of the water meter—various types. Tanks (types of). Distribution systems and appurtenances. Part II, Sewage disposal and sewage treatment: The removal of sewage from a building. Contract documents, and specifications, a discussion of. Private or independent sewage plants. Part III, Broadening the field of the master plumber: Auto refrigeration. Modern drinking water systems. Water purification. The plumbers' craft in the summer camp. Heating and ventilating, and air conditioning. Estimating. Appendix. Index.

Note: A treatise on plumbing practice designed primarily for the plumber concerned with large installations, although information pertaining to plumbing in dwelling houses is also included. A large amount of specific information is included on specific limitations and characteristics of equipment, ways of economizing on pipe, and other trade "kinks" that are usually learned only from experience. There is no bibliography.

DAY, LOUIS J.

Standard plumbing details for architects, engineers, contractors, plumbers and students. New York: John Wiley & Sons, Inc., 1938. 119 p. illus. 30 cm. \$6.00. 4632b

Contents: Plumbing fixtures. Plumbing equipment. Plumbing systems. Plumbing layouts. Index.

Note: A collection of reproductions of diagrams whose purpose is to show how plumbing fixtures are connected in modern American buildings. In some of the drawings dimensions of fixtures are also supplied, but in general they are omitted because the author expects that architects and engineers will obtain exact information on dimensions from manufacturers. The diagrams depict not only installations in dwelling houses, but installations in industrial, office, and public buildings.

MANLY, HAROLD PHILLIPS

Plumbing installations and repair. Chicago: Frederick J. Drake & Co., 1944. 248 p. illus. 19 cm. \$1.50. 4632c

Contents: Foreword. The plumbing system. Plumbing fixtures. Water closets. Traps. Drain and waste pipes. Vents and venting. The soil stack and vent stack. Building drains and sewers. Water supply and distribution. Valves and faucets. Steel and iron pipe and pipe fittings. Brass and copper pipe and tubing. Pipe cutting and threading. Lead pipe and miscellaneous pipe joints. Plans and layouts. Roughing-in. Hot water supply. Care of plumbing systems. Plumbing repairs. Septic tanks. Index.

Note: A practical, simply written, and clearly illustrated manual intended for use by those having no previous training in plumbing practice who wish to plan, install, and maintain simple plumbing systems in residences, apartments, offices, and shops, in accordance with good practice and without violating rules and regulations. The recommended methods, sizes, lengths, and types of fixtures and connections given represent generally accepted practice. In this edition a chapter on septic tanks has been added.

MATTHIAS, ARTHUR J.

How to design and install plumbing; materials and methods of standard practice, with

self-help questions. Chicago: American Technical Society, 1941. 442 p. illus. 21 cm. \$3.00. 4633

Contents: Municipal and private sewage disposal. Materials used for sewer pipe and fittings. Joints in clay and iron sewer-waste and vent. House sewer, drain and drain appliances. Storm drainage. Soil and waste pipe. Traps. Ventilation. Inspection and test. Water supply. Joints on water supply systems. House service. Cold and hot water distribution systems. Pumps and lifts. Water closets. Lavatory. Bathtubs. Sinks. Laundry tubs, etc. Complete details on designing and installing a plumbing system in an actual house. Index.

Note: A practical explanation of the more common plumbing practices used in the design and installation of domestic plumbing. The volume deals not only with the installation of equipment within a building, but also discusses the problems of sewage disposal, the construction of septic tanks, and the laying of sewage and drainage pipes. With this edition a chapter has been added describing the design and installation of a plumbing system for a six-room and two-bath residence. Eight full-sized blueprints are provided. A collection of review questions is given at the end of the volume.

PLUM, SVEND MUNK

Plumbing practice and design. New York: John Wiley & Sons, Inc., 1943. 2 v. illus. 23 cm. Vol. I, \$4.50; Vol. II, \$4.50. 4634

Contents (abridged): Volume I: Corrosion. Materials. Pipes and fittings. Valves and controls. Fixtures and accessories. Pumps. Fire protection. Air piping and equipment. Appendix. Index. Volume II: Definitions of physical and chemical terms. Codes and regulations. Architectural practice. Pipe work. Water supply. Water piping. Drainage. Sewers. Sewage disposal and treatment. Gas piping and appliances. Water heating. Index.

Note: These two volumes consolidate the data on the subject of plumbing, and present in uniform terminology the technical material scattered through architectural, mechanical, sanitary, and civil engineering literature. The material is organized, terms defined, and the whole presented in handbook form. Definite procedure and information are given on design of various pipe systems, equipment hook-ups, etc. Specifications are included only where they aid in describing a particular mode of installation. Principles are thoroughly explained, and the data given are supplemented by numerous tables and drawings.

SPIELVOGEL, SIEGFRIED WERNER

Piping stress calculations simplified. New York: McGraw-Hill Book Company, Inc., 1943. 83 p. illus. 28 cm. \$2.50. 4635

Contents: Determining pipe thickness. The allowable combined stress. Single-plane piping. 90° bend, both ends fixed. The case of moving anchors. Thrust line. 90° bend, one end hinged. 90° bend, both ends hinged. Pipe line with varying cross section. Offset U bend with tangents. Pipe line with inclined branch: Curved branches. The stress coefficient. Pipe line with curved branches: Three-dimensional piping. Three-dimensional pipe containing straight branches only: Simplified solution of equations. Combining moments in three-dimensional problems. Method of combining stresses. Pipe lines containing circular quarter bends. Examples for computing products of inertia. Three-dimensional pipe containing quarter bends: Three-dimensional pipe lines of variable flexibility. Three-dimensional line containing corrugated sections.

Note: Gives simple arithmetical calculations for estimating stresses in high temperature piping systems, which serve as "pattern" forms with specific directions by which any competent draftsman can figure piping stresses. The practical pipe designer can refer his problems to these typical calculations for form and method of computation and exact numerical solutions. Computation forms are arranged to permit sharing of labor on three-dimensional piping systems by allocating parts of the work to several persons.

WALKER, JAMES HERBERT, AND SABIN CROCKER

Piping handbook. Third edition. New York: McGraw-Hill Book Company, Inc., 1939. 897 p. illus. 18 cm. \$6.00. 4636

Contents: Definitions, formulas and tables. Fluids; properties of fluids. Metallurgy of piping materials. Pipes, valves and fittings. Heat insulation. Hangers and supports. Expansion and

flexibility. Steam power plant piping. Building heating systems. Plumbing systems. Underground steam piping. Water-supply piping. Fire-protection piping. Oil piping. Gas piping.

Note: Authoritative and accessible data for the engineer interested in piping work. The book covers fundamental principles of design, materials, and the following major fields of piping: power plant piping, gas piping, oil piping, water distribution and fire-protection piping, underground steam piping, plumbing systems, and building heating systems.

Railroad Operation

ASSOCIATION OF AMERICAN RAILROADS

The standard code of the Association of American Railroads. Operating rules, block signal rules, interlocking rules. Authorized edition as revised November 15, 1938. New York: Association of American Railroads, 1940. 854 p. illus. 15 cm. Price ? 4636a

Contents (abridged): Block signal and interlocking rules. Block signal rules. Decisions of committee—operating rules. Definitions. Form of order putting rules in effect. Operating rules. Diagrams—hand, flag and lamp signals. Train signals. Clearance; train orders. Movement by train orders. Operating rules as approved November, 1938. Original and amended readings of rules, forms, etc. Color signals. Communicating signals. Engine whistle signals. Standard time. Train order blanks. Watch inspector's certificate. Block signal rules as approved November, 1938. Original and amended readings of rules. Interlocking rules, as approved November, 1938. For engine and train crews. For signalmen. Signal (fixed) aspects.

ASSOCIATION OF AMERICAN RAILROADS. OPERATIONS AND MAINTENANCE DEPARTMENT. ENGINEERING DIVISION. SIGNAL SECTION

Manual of recommended practice, specifications, etc., complete to October, 1943. New York: Published by the Association, 1943. 3 v. illus. 24 cm. Price ? 4636b

Contents: Index. Manual, 208 parts. Drawings complete to October, 1943.

ASSOCIATION OF AMERICAN RAILROADS. OPERATIONS AND MAINTENANCE DEPARTMENT. MECHANICAL DIVISION

Manual of standard and recommended practice. Issue of 1944, complete to March 1, 1944. Compiled under the direction of the various committees responsible for the practices shown herein. Chicago: Published by the Association of American Railroads, May, 1944. v.p. illus. 23 cm. Price ? 4636c

Contents: Index of contents. Specifications for materials. Gages and testing devices. Car construction—fundamentals and details. Truck and truck details. Brakes and brake equipment. Locomotive wheels, tires and miscellaneous locomotive standards. Rules for fuel economy on locomotives. Specification for tank cars. Miscellaneous standards and recommended practices. Appendix.

ASSOCIATION OF AMERICAN RAILROADS. OPERATIONS AND MAINTENANCE DEPARTMENT. MECHANICAL DIVISION. ELECTRICAL SECTION

Manual of standard and recommended practice, issue of 1941, complete to October 1, 1942, compiled under the direction of the various committees responsible for the practices shown herein. Chicago: Published by the Association

of American Railroads, November, 1942. v.p. illus. 23 cm. Price ? 4636d

Contents: General index. Car electrical equipment. Locomotive electrical equipment. Car air conditioning equipment. Motors and control. Illumination of rolling stock. Electric welding. Automotive and electric rolling stock.

Note: The above titles represent a selection of the codes and manuals issued by the Association of American Railroads and its various sections. They represent standard and recommended practices on railroads in the United States. Many of them are issued in sections perforated for loose-leaf binders and revised pages and parts are issued at frequent intervals. A complete list of the publications together with their prices is obtainable from the Association.

DRANEY, JOHN

Diesel locomotives, electrical equipment; a practical treatise on the operation and maintenance of railway Diesel locomotives. Chicago: American Technical Society, 1944. 388 p. illus. 21 cm. \$3.75. 4637

Contents: Current electricity. Principles of a generator. Ohm's law. Electrical power measurements. Transmission equipment. General Electric light weight Diesel locomotive. Baldwin-Westinghouse equipment for switching locomotives. Electromotive equipment. Alco-G.E. 660 H.P. and 1000 H.P. Diesel-electric locomotives. Alco-G.E. Diesel electric road locomotive 2000 H.P. equipment. Index.

Note: This companion volume to the author's *Diesel locomotives, mechanical equipment*, described below, follows the same method of presentation. The general electrical equipment of Diesel engines, particularly those for railway use, is discussed, followed by specific instructions for the operation and maintenance of the electrical equipment of various makes of Diesel locomotives. The book is intended for students of Diesel engineering and railway engineers, and represents the collaboration of seven experts in the field.

DRANEY, JOHN

Diesel locomotives, mechanical equipment; a practical treatise on the operation and maintenance of railway Diesel locomotives. Chicago: American Technical Society, 1943. 472 p. illus. 21 cm. \$4.00. 4638

Contents: Characteristics of engine cycles. Combustion principles in modern Diesel and high-speed Diesels. Fuel-injection nozzles and pumps. Lubrication and cooling systems. Governors. Supercharging and turbocharging. Air filtration. Caterpillar Diesel. Cummins Diesel. Hercules Diesel. Cooper-Bessemer Diesel. American Locomotive (McIntosh and Seymour). Baldwin Locomotive Diesel (De La Vergne). General Motors Diesel Electro-motive Division. Fairbanks-Morse high speed Diesel. Description and operation of mechanical equipment. Maintenance instructions. Trucks. Auxiliary equipment. Vapor-Clarkson steam generating units. Index.

Note: This practical text for students of Diesel engineering and railway engineers, prepared by seven experts in the field, deals with the construction, operation, servicing, and general maintenance of Diesel engines, particularly those for railway use. Specific types of Diesel locomotives are described together with operating instructions. A companion volume to the author's *Diesel locomotives, electrical equipment*, described above.

HENRY, ROBERT SELPH

This fascinating railroad business. Second edition, revised. New York: The Bobbs-Merrill Company, 1943. 520 p. illus. 22 cm. \$3.75. 4638a

Contents: The road of rails. Evolution of track. Laying out the line. Beneath the rails. Rails of steel. Behavior of track. Above valley, stream, and road. Under mountain and river. Structures along the way. Carriers of the word. Guardians of the way. The first hundred years of steam. Steam—second century. Oil, "gas," and "juice." Train cars. Houses on wheels. Keeping them running. Terminals and trains. Service of supply. Growth of the service. Selling the service. "The Company." The company's business. Railroad men. The iron war horse. The business

of railroading. An "anatomy" of American railroads. Acknowledgments. Index.

Note: An historical work, written mainly for the general reader. Although considerable emphasis is placed on the development of railroads as a business, construction, equipment, and railroad organization are also treated.

JOHNSON, RALPH PAINE

The steam locomotive, its theory, operation and economics, including comparisons with Diesel-electric locomotives. Second edition, revised and enlarged. New York: Simmons-Boardman Publishing Corporation, 1944. 564 p. illus. 24 cm. U.S. and Canada, \$5.00; other countries, \$5.25. 4639

Contents: Locomotive classification. Locomotive fuels. Combustion. Front ends. Locomotive cinders. Water for boiler use. Evaporation. Superheat. Steam utilization. Tractive force. Horsepower. Resistance. Tonnage rating. Curves. Valve gears and valve setting. Counterbalancing. Acceleration. Torque diagrams. Distribution of locomotive weight. Braking. Locomotive testing. Dynamometer cars. High speed trains. Streamlined and light weight trains. Motive power for high speed service. Motive power for switching service. The relation of locomotive operating expense to net operating income. Locomotive repair costs. Economic life. Appendixes: Locomotive testing apparatus. Derivation of economic life formula. Typical locomotive dimensions. Index.

Note: Theory, operation, and economics, including comparisons with Diesel-electric locomotives, are discussed from the standpoint of recent research and current practice. The second edition contains three new chapters on steam utilization, braking, and distribution of locomotive weight. A good introduction to a complex subject.

RAYMOND, WILLIAM GALT, AND OTHERS

The elements of railroad engineering. By William G. Raymond; revised by Henry E. Riggs and Walter C. Sadler. Fifth edition, rewritten and enlarged. New York: John Wiley & Sons, Inc., 1937. 406 p. illus. 23 cm. \$4.25. 4640

Contents: Part I, The railroad industry: Growth of the American railroad system and development of regulation. Competing transportation agencies. Interior waterway transportation of the United States. The present-day problem of transportation. The organization and administration of the railroads. Railroad valuation. Part II, Permanent way: Alignment. Rails. Rail fastenings. Crossties. Ballast and roadbed. Culverts, bridges and minor structures. Turnouts. Side tracks and yards. Elevation of the outer rail. Signaling. Part III, The locomotive and its work: The locomotive. The work of the locomotive. Locomotive and grade problems. Railroad expenditures. Effect on operating expenses of change in the number of trains, tonnage remaining constant. Discussion of the effect of distance, rise and fall, and curvature, on train-mile costs. Part IV, Railroad location, construction and betterment surveys: Reconnaissance. Preliminary survey. The location survey. Construction surveys. Betterment surveys. Appendix. Index.

Note: A standard work on the subject of railroad engineering. First published in 1908, it has been revised and modernized. The first chapters, dealing with the railroad industry and its relation to other forms of transportation, have been revised to include the historic growth of the railroad industry; the development of government regulation; and discussion of competitive transportation agencies and the new problems resulting from this.

SILLCOX, LEWIS KETCHAM

Mastering momentum; a discussion of modern transport trends and their influence upon the equipment of American railways. New York: Simmons-Boardman Publishing Corporation, 1941. 274 p. illus. 23 cm. U.S. and Canada, \$2.50; other countries, \$2.75. 4641

Contents: The mechanics of train operation and train braking. Railway car wheels. Railway car axles. Locomotive and car truck design. Rail reactions and riding qualities. Draft gear. Conclusion. Appendix. Index.

Note: Based upon a series of lectures delivered at the Massachusetts Institute of Technology on modern trends in steam railway service and the development of equipment. The theory and practice of train braking are explained with the aid of worked examples illustrative of typical procedure in train retardation calculations. Important features of high speed operation are explained from the engineering standpoint.

VAN METRE, THURMAN WILLIAM

Trains, track and travel. Sixth edition. New York: Simmons-Boardman Publishing Corporation, 1944. 417 p. illus. 24 cm. U.S. and Canada, \$3.50; other countries, \$3.75. 4642

Contents: Clearing the way. Our steam railroads. The railroad track. The steam locomotive. Electric locomotives; gasoline and oil motors. Freight cars. Passenger train cars. Streamliners on parade. Passenger stations and terminals. Freight terminals. The operation of trains. How our railroads went to war. Index.

Note: A book for railroad fans and general readers, written expertly but simply. New illustrations have been added, and four chapters rewritten for this sixth edition. A new chapter describes railroading in wartime, including entraining of troops. Famous streamlined steam, electric, and Diesel powered trains are pictured; functions of equipment and personnel are explained.

Refractories

NORTON, FREDERIC HARWOOD

Refractories. Second edition. New York: McGraw-Hill Book Company, Inc., 1942. 798 p. illus. (part col.) 23 cm. \$7.50. 4643

Contents: Part I, Introduction: Scope of the refractories industry in the United States. Literature on refractories. History of refractory development in the United States. Some fundamental concepts of matter in the solid state. Part II, Manufacture: Refractory raw materials. The mining and preliminary treatment of refractory materials. Molding methods. Drying. The firing of clay and other refractory materials. Kilns for burning refractories. Refractory mortars, plastics, concretes, and coatings. Part III, Properties: The fusion point of refractory materials and their equilibrium diagrams. Load bearing capacity of refractories. Spalling. The reaction between refractories and slags or glasses. Expansion and shrinkage. Heat transmission by refractories. Sizes and tolerances. Miscellaneous properties of refractories. Part IV, Use: Refractories in the iron and steel industries. Refractories in the nonferrous-metal industry. Refractories in the generation of power. Use of refractories in miscellaneous industries. Brickwork construction.

Note: This treatise deals mainly with the fundamental processes involved in the manufacture and use of refractories. The present edition contains new treatments of the nature of clay, the mechanism of plastic flow, deflocculation of slips, and reactions in firing. Bibliographical references are included.

Salvage

BULLARD, ROBINSON D., AND FRED P. PETERS, EDITORS

Salvage manual for industry. Published by Technical Service Section, Industrial Salvage Branch, Salvage Division, War Production Board. Washington, D.C.: Government Printing Office, 1943. 243 p. illus. 23 cm. Paper, \$0.50. 4643a

Contents: Organizing and planning. Administrative factors. Salvage practice: Metal scrap. Nonmetallic waste. Case histories. Waste materials hints—a classified list of scrap items. Index.

Note: This work was prepared as a guide to industrial plant salvage managers. It contains instructions regarding efficient salvage methods and practices for segregating and preparing secondary waste materials.

THOMPSON, FRANK E., JR.

Diving, cutting and welding in underwater salvage operations. New York: Cornell Maritime Press, 1944. 224 p. illus. 19 cm. \$2.00. 4644

Contents: Training the diver. Physics of diving. Diver's air supply. Preparation and descent. Tending the diver. Ascent. Diving accidents. Compressed air illness. Shallow-water diving helmets. Working on the bottom. Underwater salvage operations. Cutting under water with oxy-hydrogen—with oxy-acetylene—with oxygen arc lance—with oxygen arc torch—with metal arc. Underwater electric arc welding. Surface welding and cutting methods. Gases. Useful data and definitions. Index.

Note: Practical information covering the techniques of diving, underwater cutting and welding, and the equipment used in these operations is given in this guide and handbook for new operators and experienced divers. Improvements learned while raising and repairing ships in Pearl Harbor have been included.

Sound Apparatus

ACADEMY OF MOTION PICTURE ARTS AND SCIENCES. RESEARCH COUNCIL

Motion picture sound engineering; a series of lectures presented to the classes enrolled in the courses in sound engineering given by the Research Council of the Academy of Motion Picture Arts and Sciences, Hollywood, California. New York: D. Van Nostrand Company, Inc., 1938. 547 p. illus. 23 cm. \$6.50. 4645

Contents: Basis of motion picture sound. The nature of sound. Types of film recording. Noise reduction. Re-recording and preparation for release. Microphones. Headphones and loudspeakers. Film drive. Film processing. Reproducing systems. Sound circuits. Measurements in sound circuits. Phase distortion. Transformers for sound circuits. General network theory. Attenuation equalizers. Equalizer design. Wave filter theory. Low-pass and high-pass filters. Dividing networks for loud-speaker systems. Vacuum tubes. Amplifier circuits. Rectifiers. Volume indicators. Part II. Elementary considerations. Static electricity. Direct currents. Electrical power and energy. Magnetism. Electromagnetism and the magnetic circuit. Electro-magnetic induction. The decibel. Resistance attenuation networks. Generators and motors. Alternating currents. Vector notation. Resonant circuits. Vacuum tubes. Triode amplifiers. Index.

Note: The lectures presented in this text and reference book for motion picture sound engineers and students are intended to present the latest available theory and technical data as of 1938. Several chapters not presented originally to the sound course classes have been included in the present volume, and the material of the original lectures has been edited and revised. The treatment presupposes a knowledge of the fundamentals of engineering, including a familiarity with college mathematics. While there is considerable emphasis on practical applications to studio recording equipment, there is also a large body of mathematical and physical theory incorporated in the presentation. There are numerous diagrams and illustrations of theoretical and experimental performance curves and circuits.

CAMERON, JAMES ROSS

Motion picture projection and sound pictures. New 1944 edition, 29th year of publication. Woodmont, Conn.: Cameron Publishing Company, 1944. 586 p. illus. 20 cm. \$8.50. 4646

Contents (abridged): Early attempts at projection. Rotating shutters. Working principle of projectors. Special purpose projectors. Auto drive-in theaters. Motion picture electricity. Transformers. Rectifiers. Loudspeakers. Electric motors. Motion picture generators. Carbons. Commercial arc lamps. Light. Theory of image formation. Sound-picture projection. Motiograph mechanism adjustments. Screens. Speakers and acoustics. Index.

Note: A practical guide to the installation, operation, and care of motion picture projectors and other equipment, including commercial sound reproducing systems. This ninth edition represents a revision of chapters dealing with rotating shutters, the

working principle of projectors, auto drive-in theaters, light, images, the R.C.A. fantasound system, the Simpless E7 projectors, and the Brenkert projector. New chapters on screens and on speakers and acoustics have been added. The tabular material in the eighth edition on the care and servicing of projectors of various types has been incorporated in the text. Earlier editions had variant titles.

CAMERON, JAMES ROSS

Servicing sound equipment. Trouble-shooters manual. Public-address systems. Fifth edition. Woodmont, Conn.: Cameron Publishing Company, 1944. 609 p. illus. 21 cm. \$8.50. 4647

Note: A text and reference book covering the care, operation, and servicing of all types of sound-reproducing equipment, including sound motion pictures, public address systems, radio, and television. The treatment is simple and practical, no formal knowledge of electricity or mathematics being assumed. Useful in home-study courses and adult training programs. There is an index but no table of contents. Lithoprinted. The work is based partly on the author's *Sound pictures and trouble shooter's manual*, New York, 1930, and *Public address systems*, Woodmont, Conn., 1935.

CAMERON, JAMES ROSS

Sound motion pictures, recording and reproducing. Cinematography and talkies. Fifth edition. Coral Gables, Fla.: Cameron Publishing Company, 1944. 322 p. illus. 19 cm. \$8.50. 4648

Note: A handbook and reference guide for the practical motion picture sound recorder and projection room operator. An outline of the development of motion picture sound recording and reproducing is presented and is followed by descriptions of present-day methods and techniques. There is an index but no table of contents.

MASSA, FRANK

Acoustic design charts. Philadelphia: The Blakiston Company, 1942. 228 p. illus. 23 cm. \$4.00. 4649

Contents (abridged): Fundamental relations in plane and spherical sound waves. Attenuation of sound and vibrations. Mechanical vibrating systems. Radiation of sound from pistons (direct radiator loud speakers). Directional radiation characteristics. Reverberation and sound reproduction. Exponential horn loud speakers. Electro-magnetic design data. Miscellaneous data.

Note: This book presents comprehensive acoustic engineering data for use in the construction or design of electro-acoustic apparatus. It converts basic acoustic theory into practical charts of quantitative value which may be used without laborious computations and interpretations. The scales used have been chosen with a view to obtaining constant precision in reading the large range of values plotted. By providing families of curves on many of the charts it is possible to see immediately the quantitative effect of varying the parameters of a system. The subjects covered include the design of acoustic, mechanical, and electro-acoustic apparatus, vibrating mechanical systems, isolation of machinery, noise reduction, electromagnetic and permanent magnet design, electric circuit, and other data. There are 107 full-page charts showing over 750 curves.

OLSON, HARRY FERDINAND

Elements of acoustical engineering. New York: D. Van Nostrand Company, Inc., 1940. 344 p. illus. 23 cm. \$6.00. 4650

Contents: Sound waves. Acoustical radiating systems. Mechanical vibrating systems. Electrical, mechanical and acoustical analogies. Acoustical elements. Driving systems. Direct radiator loud speakers. Horn loud speakers. Microphones. Miscellaneous transducers. Measurements. Architectural acoustics and the collection and dispersion of sound. Speech, music and hearing. Index.

Note: This reference book explains the principles of sound waves, and their applications to acoustical systems, by means of electrical analogies. The author demonstrates how complex sound equipment may be analyzed and understood by comparing it to simple electrical circuits. These methods are then applied to

solve the problems in the design of loud speakers, microphones, musical instruments, theaters and halls, and other installations and equipment important to the acoustical engineer.

RICHARDSON, FRANK HERBERT

Bluebook of projection; edited by Aaron Naddell. Seventh edition. New York: Quigley Publishing Company, Inc., 1942. 716 p. illus. 23 cm. \$7.25. 4651

Contents: Preface. Dedication. Electrical action. Action of alternating current. Practical electrical calculations. Electrical apparatus components. Line power supply circuits. Rectifiers. Generators and motors. Batteries. Lenses and mirrors. Screens. The film. The motion picture projector. The projection room. The light source. Sound equipment and sound. Recording and reproduction. The A. C. transmission line. Component parts of a sound system. Power supply for sound systems. Sources of sound current. Theory and wiring of amplifiers. Speakers. Drives. Control tracks and stereophonic sound. The operation of sound equipment. Maintenance of sound equipment. Television and radio components. Television and radio transmission. Television and radio receivers. Some television details. Supplement (Sound trouble charts).

Note: A manual covering the operation of motion picture projection and sound reproduction apparatus in theatres. It is meant for practical use by projectionists, and is equipped with long lists of questions designed to facilitate the use of the book for self-instruction.

Textiles

AMERICAN SOCIETY FOR TESTING MATERIALS

American Society for Testing Materials standards on textile materials (with related information). Prepared by the American Society for Testing Materials, Committee D-13 on textile materials. Specifications, tolerances, methods of testing, definition of terms. October, 1944. Issued annually. Philadelphia: The American Society for Testing Materials, 1944. 473 p. illus. 23 cm. Paper, \$2.75. 4652

Contents (abridged): Standards and tentative standards: General. Asbestos. Bast and leaf fibers. Cotton. Glass. Rayon and silk. Wool. Miscellaneous. Appendixes. Index.

Note: This book contains the definition and terms, methods of testing, and specifications for textile and related material developed by the A.S.T.M. Additional material in the appendixes includes basic properties of fibers, yarn number conversion, proposed yarn numbering system and designation of construction, and psychrometric table for relative humidity.

DENNY, GRACE GOLDENA

Fabrics. Fifth edition, revised and reset. Edited by Benjamin R. Andrews. Chicago: J. B. Lippincott Company, 1942. 202 p. illus. 20 cm. \$2.50. 4653

Contents: Fabric identification. Textile terms or definitions. Classification of fabrics: Structure. Trade names. Textile tests. Labeling and its control: Legislation. Federal Trade Commission. The Better Business Bureaus. Labeling. Specifications. References.

Note: This is a completely revised and reset volume based on the author's earlier work, *Fabrics and how to know them*, Philadelphia, 1928. The present work constitutes a brief handbook and reference manual for textile engineers, designers, and other specialists in the fabrics and textile industry. The material is presented in dictionary form, and there are numerous photomicrographs and drawings. The fifth edition incorporates new changes in textile products, the trade practice rules of the Federal Trade Commission, and new manufactured products.

DOOLEY, WILLIAM HENRY

Textiles; authoritative source of textile information for mill executives, selling agents, de-

signers, interior decorators, stylists, advertisers, and salespeople. Also adapted to meet the educational needs of classes in dressmaking, clothing, costume design, and interior decoration. New revised edition, with experiments. Boston: D. C. Heath and Company, 1943. 790 p. illus. 20 cm. \$4.00. 4654

Contents (abridged): Value of fibers. Wool sorting. Wool, reprocessed wool, and reused wool. The manufacture of woolen and worsted yarns. Woven fabrics. Color. Woolen and worsted fabrics. Manufacture of cotton yarn. Cotton fabrics. Silk. Linen. Classification of fabrics. Stitches and ornamentation. Care of textiles. Costume design. Furs. Upholstery or decorative fabrics. Floor coverings. The selling of textiles. Testing textile fabrics. Index.

Note: An elementary textbook written in non-technical terminology. This edition contains new material on synthetic fibers, new finishes, costume design, and textile selling.

EVANS, MARY, AND ELLEN BEERS MCGOWAN
A guide to textiles. New York: John Wiley & Sons, Inc., 1939. 233 p. illus. 23 cm. \$2.50. 4655

Note: In this book are compiled the basic facts concerning textiles which are in common and constant use in the household and in clothing, so that the average consumer and student of textiles may be informed of the characteristics of the various fibers, their manufacture, and finish which render them satisfactory for certain uses, as well as the care which they require. A topical and dictionary-like arrangement is used in the book, following an alphabetical order. Cleansing agents are thoroughly explained and specific treatments given for stain removal.

HAVEN, GEORGE BARTHOLOMEW

Industrial fabrics; a handbook for engineers, purchasing agents and salesmen. Third edition, revised and enlarged. New York: Wellington Sears Company, 1941. 789 p. illus. 20 cm. \$2.00. 4656

Contents: Types of cotton. Manufacturing processes for the cotton fiber. Cotton yarn. Uses of industrial fabrics. Organization and properties of industrial fabrics. Laboratory design and practice. The slide rule, logarithm and nomograph. Specifications and test methods. Appendixes. Bibliography of U.S. government publications relating to textiles. Index.

Note: This work presents a summary of manufacturing and laboratory technique related to the textile industry, together with information on the marketing and the uses of the various fabrics. The heavy cotton fabrics are treated in considerable detail, with descriptions of their uses in the marine industry, tent and awning manufacture, filtration, buffing and polishing, pyroclon, oilcloth, soundproofing, webbing and tapes, aeroplane wing fabric, balloon fabrics, clothing, draperies, brake lining, and other applications. The appendix contains a compilation of standards of the American Society for Testing Materials, standards of the U.S. Federal Specifications Board, several tables of data, and a reading list of 212 books compiled by the U.S. Department of Agriculture. The third edition contains new data on mechanical stapling of cotton, moisture apparatus, refined balances, new statistics, and new illustrations.

HAVEN, GEORGE BARTHOLOMEW

Mechanical fabrics; a treatise upon their manufacture, construction, testing and specification. New York: John Wiley & Sons, Inc., 1932. 905 p. illus. 24 cm. \$10.00. 4657

Contents: Types of mechanical fabrics. Desirable characteristics of fabric materials. Physical characteristics of various fibers. Manipulation of cotton fiber in manufacture. Character of yarn. Fabric. Design and equipment of laboratories. Textile laboratory practice. Specifications and tolerances. Textile microscopy. Textile mill organization. Arrangement and driving of textile machinery. Index.

Note: A treatise for textile research and laboratory workers, and for textile manufacturers. The book discusses methods of testing important fabrics, the mechanical apparatus best suited, and the method of procedure. In addition, it covers textile re-

search, control and testing laboratory organization, equipment, and practice. The researches on moisture effects in most types of fibers are extensive and thorough, and as a summary there are added many tables whereby fabrics may be corrected to known and standard degrees of moisture regain. Actual drawings are presented for many types of apparatus, as well as laboratory floor plans and materials. An extensive chapter discusses the organization of typical textile processes. This is carried out from actual data and is rated with mathematical precision.

HESS, KATHARINE (PADDOCK)

Textile fibers and their use. Third edition. Chicago: J. B. Lippincott Company, 1941. 530 p. illus. 21 cm. \$3.00. 4658

Contents (abridged): Introduction. Section one, Textile construction, finish and design: How fabrics are constructed. How yarn is constructed. How finishing makes cloth salable. How colors are applied to textiles. How design is obtained in fabrics. Section two, The textile fibers: Textile fibers—their classification and essential properties. Wool—its suitabilities for use in fabrics. The history and value of silk. Cotton: its importance and use. The position of linen as a textile fiber. Synthetic fibers—science in competition with nature. Section three, Textiles and the consumer: Factors influencing textile consumption. How to select fabrics for clothing and household use. The care of fabrics. Appendix. Index.

Note: A textbook intended for use in college home economics courses, but also suitable for the layman and consumer. This third edition has material on nylon and additional synthetic fibers not found in earlier editions.

HOYE, JOHN

Staple cotton fabrics; names, descriptions, finishes, and uses of unbleached, converted, and mill finished fabrics. New York: McGraw-Hill Book Co., Inc., 1942. 241 p. illus. 23 cm. \$3.50. 4659

Contents: Gray plain-woven fabrics and their derivatives. Gray leno-woven fabrics. Gray twill-woven fabrics. Gray satin-woven fabrics. Staple and specialty dobby-woven gray cloths. Towelings. Colored-yarn fabrics. Tickings. Flannels. Seat-cover and awning fabrics. Drapery, slip-covers, and upholstery fabrics. Table-cover fabrics. Corset fabrics. Bedspread fabrics. Cut-pile fabrics. Filled and coated fabrics. Descriptions and names of converted cloths (not basic fabrics).

Note: A reference manual of staple American cotton fabrics that gives the various constructions of each cloth, an illustration of each, data on yarn sizes needed for making the fabric, types of finishes employed, and uses to which the goods are put. It covers all types of cotton fabrics—unbleached, converted, and mill finished—used in the garment manufacturing and industrial trades, for use by all concerned with the manufacture, sales, and use of these goods.

JACOBSEN, EDA AUGUSTA, AND HELEN E. McCULLOUGH

Fundamentals of textiles, a workbook. Second edition. New York: John Wiley & Sons, Inc., 1941. 175 p. 28 cm. \$1.50. 4660

Contents: Introductory exercise. Unit I, Serviceability of fabrics: A study of representative household textiles. A study of staple fabrics. Tests for serviceability: closeness of weave; strength; color fastness; shrinkage; dressings; weightings; yarn slippage; absorption; weight per square yard; thickness. Unit II, Textile fibers and substances used in making cloth: General study. Tests for fiber content; appearance and feel; microscopic study; burning; chemical. Unit III, Study of yarns and threads. Unit IV, Study of cloth construction: weaving; knitting; felting; netting. Unit V, Textile design. Unit VI, Cloth finishes. Unit VII, Buying of textiles. Unit VIII, Household textiles: bedding, blankets, comforters, mattresses, pillows, sheets, pillow-cases; curtains and draperies; domestic rugs and carpets; table linens; towels, bath, plain or hand, dish; upholstery material. Unit IX, Laundering; dry cleaning; stain removal; moth control.

Note: An approach to the study of textiles via the readers' own experiences and an expansion of the subject matter to include newer textile information are major changes in this second edition. The book includes sets of simple chemical tests to determine the fiber content of various materials. Recent information is given about synthetic fibers and cloth finishes. Its main use is as a laboratory manual in college courses.

MILLER, MAX C.

Principles of knitting. New York: McGraw-Hill Book Company, Inc., 1931. 234 p. illus. 24 cm. \$4.00. 4661

Contents: Early machines and knitting principles. Yarn measuring and sinking. A comparison of circular and flat spring-needle machines. Flat and circular needle-beard pressing. Spring-beard sinkerless knitting. Correct spring-beard needle-sinker knitting. Spring-needle knocking over and finishing. Latch-needle knitting principles. Latch-needle loop-forming mechanics. Circular machines constructed to eliminate robbing while loop-forming. Two-bed straight or lamb machines. Fashioning mechanisms. Various types of stockings. Drop-stitch prevention. Warp fabrics. Construction and operation of flat horizontal needle warp-knitting machines. Vertical-needle warp machine construction and operation. Raschel and circular warp machines. Production of welt design fabrics. Index.

Note: This volume discusses the fundamental principles of knitting, analyzes the methods of producing the various types of fabrics, and describes the machines used in their production. The knitting of hosiery is emphasized. Detailed drawings are included for the essential parts of many machines. The book is based on articles that appeared in the periodical *Textile world* from 1926 through 1929.

MOBERG, IVAR

Cotton loomfixers' manual. New York: McGraw-Hill Book Company, Inc., 1942. 197 p. illus. 23 cm. \$2.50. 4662

Contents: Loom construction. Take-up motions. Loom driving and brake motions. Let-off motions. Harness motions. Picking motions. Warp stop motions. Filling stop motions. Protector motions. Automatic filling motions. Filling feelers. Filling cutters. Whiproll motions. Temples. Box motions. Box multipliers. Shuttles.

Note: Presents practical, step-by-step instructions on all phases of cotton loomfixing. Covers the setting, adjusting, and timing of modern looms and the latest loom motions as applied on older looms. The material is so presented that the book can serve as a textbook for courses in loomfixing or as a self-study manual for those who wish to learn the art of loomfixing.

SCHWARZ, EDWARD ROBINSON

Textiles and the microscope. New York: McGraw-Hill Book Company, Inc., 1934. 329 p. illus. 23 cm. \$4.00. 4663

Contents: Introductory. Microscopes for textile research. Manipulation of the microscope. Illumination for the microscope. Accessory equipment. Micrometry. Specimen mounting. Preparation of cross sections. Recording data. Photomicrographic apparatus. Photomicrographic technique. Stereoscopic photomicrography. Polarized light. Applications of polarized light. Fabric analysis. Yarn analysis. Fiber analysis. Appendix.

Note: A comprehensive manual on the use of the microscope in analyzing textiles. The book describes the available equipment as to its advantages and limitations and its application, including the preparation of specimens, new and improved techniques, fabric, yarn, and fiber analysis, etc.

VON BERGEN, WERNER, AND WALTER KRAUSS

Textile fiber atlas; a collection of photomicrographs of common textile fibers. New York: Textile Book Publishers, Inc., 1942. 38 p. illus. 31 cm. U.S. and Canada, \$3.00; other countries, \$4.00. 4664

Contents: Natural animal fibers: Wool. Specialty hair fibers. Minor hair fibers. Fur fibers. Silks. Natural vegetable fibers: Cotton and minor seed hairs. Bast fibers. Structural fibers. Rayon and synthetic fibers. Cellulosic, protein and mineral fibers. Bibliography.

Note: This atlas presents a set of photomicrographs (longitudinally and in cross section) of all the important textile fibers, with a descriptive text limited to the properties which can be established microscopically. Special emphasis is placed upon the discussion of the methods suitable for analyzing fabrics contain-

ing reprocessed and reworked wool, and there is a detailed description of the improved technique in the measurement of fiber dimensions as employed by the authors in the present volume. The bibliography contains 138 references to pertinent literature in English and German.

WINGATE, ISABEL BARNUM

Textile fabrics and their selection. Revised edition. New York: Prentice-Hall, Inc., 1942. 624 p. illus. 23 cm. (Retailing series) \$5.35. 4665

Contents (abridged): Why study textiles? Customer demand for textile fabrics. Classification and recognition of textile fabrics. Importance of cotton to the consumer. Importance of linen to the consumer. Importance of rayon and nylon to the consumer. Importance of silk to the consumer. Importance of wool to the consumer. The weaves: plain, twill, and satin. Fance weaves: pile, Jacquard, dobby, and gauze. Knitted cloth. Finishing cloth. Dyeing and printing. Women's, girl's, and infant's wear. Men's and boy's wear. Domestic. Period styles in home furnishings and rugs. Draperies, curtains, and upholstery. Appendix. Bibliography. Index.

Note: This book treats comprehensively the question of textiles from the consumer point of view. This revision of the 1935 edition has been rewritten and brought up to date. Material on new fibers and fabrics has been included. The bibliography has been expanded by the addition of new references. Useful to store executives and to students of retailing and home economics.

WOOLMAN, MARY SCHENCK, AND ELLEN BEERS MCGOWAN

Textiles: a handbook for the student and the consumer. Third edition. New York: The Macmillan Company, 1943. 388 p. illus. 21 cm. \$3.50. 4666

Contents: Beginning of the textile industries. Carding and spinning. Hand weaving. Power weaving and design. Knit goods. Cotton. Wool. Silk. Linen. Minor fibers. Rayon. New fibers and finishes. Dyes. Selection and care. Hygiene of clothing. Microscopic study of textile fibers. Textile testing. Reagents. Bibliography. Index.

Note: Primarily an introductory textbook for home economics students. It is suitable also as a book of reference for housewives and those laymen interested in the subject. This third edition has been rewritten in order to incorporate information on the new synthetic fabrics, new textile finishes, etc.

Upholstery

STEPHENSON, JOHN WESLEY

Practical upholstering, a complete handbook for the upholsterer. Fifth edition revised and enlarged. Approximately twelve hundred illustrations with descriptive text. New York: Clifford and Lawton, Inc., 1944. 291 p. illus. 24 cm. \$9.00. 4667

Contents (abridged): Tools and accessories. Slip coverings. Mattresses. Essentials of quality in frames. Springing-up. Building edges without stitching. Blind-stitched pad seats. The stitched edge. The pillow edge. Circular-backed pieces. Pad back and arms. Springbacked pieces. Double-stuffed pad backs. Overstuffed pad upholstering. Barrel and shell back chairs. The spring pillow. Buttoning circular backs. Tufting spring backs. Tufted spring seats. The handling of leather. The loose down-cushion seat. Deep spring and double-deck seats. Built-up down cushioned seats. Down pads as top stuffing. Divided cushion backs and seats. The chaise lounge. Trimming over-stuffed pieces. Repairing and polishing. The status of rubber in upholstering. How many yards to cover?

Note: A handbook and guide to standard methods of upholstering. It is designed primarily for use by persons in the business. Illustrations are used to depict different steps in the various procedures.

Woodworking

HJORTH, HERMAN

Machine woodworking. Milwaukee, Wis.: The Bruce Publishing Company, 1937. 371 p. illus. 23 cm. (The Hjorth series of woodworking texts) \$3.25. 4667a

Contents: Preface. Historical development of woodworking machinery. Circular saws. Operations performed on a universal or variety circular saw. Band saws and jig saws. Planing and scraping machines. Shapers and routers. Mortisers, borers, and tenoners. Wood-turning lathes. Sanding machines. Glue-room machinery and equipment. Installation and maintenance. References. Index.

Note: A textbook for technical, trade, and vocational schools, useful also as a handbook for the practical trade-trained shopman and for the largely self-trained home craftsman. Review questions are given at the ends of the chapters. The author has also written *Principles of woodworking* (described below).

HJORTH, HERMAN

Principles of woodworking. Milwaukee, Wis.: The Bruce Publishing Company, 1930. 307 p. illus. 23 cm. \$2.00. 4667b

Contents: Preface. Hand tools. Machine tools. The sharpening of tools. Planing and squaring to dimensions. Grooved joints.

Dowel joints. Lap or halving joints. Mortise-and-tenon joints. Dovetail joints. Miscellaneous constructions. Gluing and clamping. Application of hardware. Wood turning. Surface decoration. Upholstery. Wood finishing. Wood. Applied projects. Index.

Note: A manual of woodworking intended not only for the use of students in secondary and vocational schools but also for adults who have taken up the study and practice of woodworking as a hobby. The main emphasis is upon cabinetmaking because of its universal interest and appeal. The book contains questions for review at the end of each chapter and a series of furniture projects. The author has also written *Machine woodworking* (described above).

SHEA, JOHN GERALD, AND PAUL NOLT WENGER

Woodworking for everybody. Scranton, Pa.: International Textbook Company, 1944. 187 p. illus. (part col.) 28 cm. (The Arts and industries series) \$2.00. 4668

Contents: The story of wood. Shop equipment. Processes. Joinery. Woodworking machinery. Tool sharpening. Wood finishing. Safety first. Index.

Note: Written primarily as a manual of information on woodworking techniques for junior and senior high school industrial arts classes. Others who will be interested in this book are: adult woodworking hobbyists and home craftsmen with workshops in their cellars; primary and elementary school teachers supervising classroom construction of projects in woodworking; and the average householder interested in woodworking. Full consideration is given to background and basic information regarding tool techniques and practices of woodworking needed by students and inexperienced laymen.

INDUSTRIAL MANAGEMENT

ALFORD, LEON PRATT, AND JOHN R. BANGS,
EDITORS

Production handbook. Staff editor: George E. Hagemann. New York: The Ronald Press Company, 1944. 1676 p. illus. 19 cm. \$7.50. 4668a

Contents: Plant organization. Production planning and control. Production control systems. Purchasing. Materials control and standardization. Storeskeeping. Time study and operation analysis. Motion study—work simplification. Inspection. Quality control. Plant layout. Machinery. Tools, jigs and fixtures. Materials handling. Job estimating. Job evaluation. Merit rating. Wage plans. Plant maintenance. Classifications and symbols. Principles of management. Measures of performance. Manufacturing costs. Factory budgets. Plant personnel. Index.

Note: This manual covers intensively the problems of directing the men, materials, and machines of a manufacturing establishment. It deals with more effective turning out of product, living up to time schedules, working under the requirements of budgets, and other factors entering into the planning and control of efficient production under present-day conditions. It is designed to be of practical daily use to the manufacturing men for whom it is primarily intended, and also to be readily understandable and helpful to others beside those with specialized technical background. Eighty-nine executives and professional men are listed as its contributing and consulting editors.

ANDERSON, ARTHUR G., AND OTHERS

Industrial management, by Arthur G. Anderson, Merten Joseph Mandeville and John Mueller Anderson. A revision of "Industrial engineering and factory management." New York: The Ronald Press Company, 1942. 612 p. illus. 24 cm. \$4.50. 4669

Contents: Public relations. Distribution and research. Industrial progress. Scientific management. Ownership in relation to management. Organization for management. Charting the organization. Selecting a location. Planning the factory building. Construction of the factory building. Power and heating. Maintenance. Materials handling. Plant layout. Industrial lighting. Air conditioning. Standardization and simplification. Human relations. The personnel department—employment and economic security. The personnel department—other personnel relations. Fatigue among workers. Motion and time study—job standardization and motion study. Taking time studies. Putting standardized methods into practice. Wages—the problem of equitable compensation. Wages—comparison of wage plans. Budgets. Purchasing. Quality control. Materials control. Tool control. Production control. Industrial costs. Index.

Note: A textbook for students of organization and management, not only in the manufacturing industries but in any type of business endeavor. Case applications are used to point up the abstract theory discussed. The book is a revision of Arthur G. Anderson's *Industrial engineering and factory management*, New York, 1928. The revision consists mainly of an increased emphasis upon the importance of the relations existing between industry and society as a whole, and attention to the means by which the service of industry to the community may be made effective.

ANDERSON, EDWARD HUTCHINGS, AND G. T. SCHWENNING

The science of production organization. New York: John Wiley and Sons, Inc., 1938. 282 p. 22 cm. \$3.50. 4670

Contents: Introduction and definitions. Environment and evolution of the theory of organization. The organization of work. Organization structure. Types of organization. Comparison of organization types. Organization principles and laws. Broader aspects of organization. Recapitulation. Selected bibliography. Index.

Note: This book consists of a brief outline and description of the fundamentals underlying the process of organization for effective production. The sources used consist mainly of the writings of professional consultants in organization and management, business executives, and teachers and students of economics and of business organizations. It begins with the study of the small unit and culminates in units of tremendous size, harmonizing the philosophy of scientific management and economic theory.

BALDERSTON, CALEB CANBY, AND OTHERS

Management of an enterprise, by C. Canby Balderston, Victor S. Karabasz, and Robert P. Brecht. New York: Prentice-Hall, Inc., 1935. 470 p. illus. 23 cm. \$5.35. 4671

Contents: Preface. Business management: its place and nature. Profits and the factors underlying management decisions. Product design. Setting of selling prices. Provision of physical facilities. Power, heat, light, and ventilation. Output and operating standards. Incentives. Inspection to maintain standards of quality. Maintenance of standards of plant and equipment. Purchasing. Control of inventories. Planning and control of production, clerical, and sales operations. Uses of budget and cost data to secure control. Organization as a means of direction and control. Personnel management. Selected bibliography. Index.

Note: The purpose of this textbook is to provide for students and business executives a balanced treatment of management essentials. The sequence of development, beginning with product and physical facilities and ending with organization and personnel relations, proceeds from the tangible to the intangible. Questions, problems, and cases are introduced in order to demonstrate the application of principles to concrete situations. The book contains tables, diagrams, forms, charts, and photographs as illustrative material.

BARNES, RALPH MOSSER

Industrial engineering and management, problems and policies. New York: McGraw-Hill Book Company, Inc., 1931. 366 p. illus. 23 cm. (McGraw-Hill industrial management series, D. S. Kimball, consulting editor) \$3.50. 4672

Contents (abridged): Part I, Industrial plant design and equipment: The design and construction of factory buildings. The selection of equipment. Plant layout. Materials handling. Industrial lighting. Part II, Time and motion study, wages, and manufacturing costs: Stop-watch time study. The motion-picture camera and micromotion study. Wages—base rate determination—the point plan. Manufacturing costs. Problems. Appendices: General statement of the problem. Determination of economic lot sizes. Depreciation data. The design of printed forms. Selected bibliography. Index.

Note: A study of principles of industrial engineering and management based upon concrete cases from successful manufacturing and business concerns. The design and equipment of the factory are considered, and the measurement and compensation of human effort are discussed.

BENGE, EUGENE JACKSON

Breaking the skilled labor bottleneck; how to subdivide labor skills to gain maximum pro-

duction. New York: The National Foremen's Institute, 1942. 47 p. illus. 26 cm. Paper, \$2.00.
4673

Contents: List of illustrations. Foreword. A case history. Part I, The nature of skill: What is "skill"? Muscular skill. Sensory skills. Thinking skills. Practical example. How skill is acquired. Analyzing skill. Some training principles. Part II, Overcoming shortages. Four principal ways. 1. Selection: Inventory the present force. 2. Training: Work analysis; case study; using job descriptions; time study analysis; upgrading setup work; carrying out the training; how effective is quick training?; apprentice training should continue. 3. Motivation. 4. Supervision. Appendix: Time taken to learn jobs.

Note: A study of a survey made by the author to determine ways in which labor shortage may be avoided or overcome. The most promising method discovered was subdivision of skill, coupled with intensive training, and this is the main subject of this manual. The appendix contains a table giving the approximate times required for learning various trades, reprinted from Charles S. Slocombe, *Skilled workers for defense industries*, New York: Personnel Research Federation, 1940, 79 p.

BENGE, EUGENE JACKSON

Job evaluation and merit rating; a manual of procedures. New York: National Foremen's Institute, Inc., 1941. 73 p. illus. 29 cm. \$3.00.
4674

Contents: Part I, Job evaluation: New solutions to an old problem. Job evaluation methods. The factor comparison method. Using the job comparison scale. Checking the results. Applying the findings. Bibliography. Part II, Merit rating: History of merit rating. Constructing a rating scale. Man-job rating. Uses in transfer and promotion. Rating performance. Bibliography. Part III, Charts: Table of charts. Charts. Index.

Note: The author of this volume believes that one of the most vexatious problems in the employer-employee relationship can be solved by the use of job evaluation and merit ratings as a basis for wages. The book has a profusion of graphs and charts demonstrating job evaluation and merit rating and includes sample instructions to interviewers who make job analyses.

BUCKINGHAM, EARLE

Production engineering. New York: John Wiley & Sons, Inc., 1942. 268 p. 23 cm. \$2.50.
4675

Contents: Introduction. Section I, Preparation for production: Production design. Planning the equipment. Tool design. Proving the design and equipment. Section II, Production operation and control: Planning and operating for production. Selecting, training, and direction of operators. Quality control. Cost reduction. Section III, Supporting activities: Standardization. Factory costs for the engineer. Process development. Product development. Summary. Index.

Note: Descriptive in character, this work discusses the problem of production from an engineer's viewpoint. It clearly shows the engineer's position in an industrial organization and gives the relation which he bears to other functional groups within a large company. It shows the objective of production engineering and its relationship to the many other activities of an industrial organization, and describes how the work of production is the coordinated result of the efforts of many individuals.

CONNELLY, JOHN ROBERT

Technique of production processes. New York: McGraw-Hill Book Company, Inc., 1943. 430 p. illus. 23 cm. \$4.00.
4676

Contents: Part I, Basic operations: Casting. Forming. Material removal. Joining. Part II, Auxiliary activities: Material handling. Stores. Plant services. Product standardization and gaging. Methods study and job study. Equipment operation. New equipment. Appendix: Problems. Projects. Bibliography. Glossary. Index.

Note: A practical aid for the understanding of industrial engineering problems. Outlines industry's basic operations—casting, forming, material removal, joining—and covers auxiliary activities—materials handling, stores, plant services, product standardization, etc. Deals especially with that part of industry concerned with manufacture of durable goods.

DAVIS, RALPH CURRIER

Industrial organization and management. Revised edition. New York: Harper & Brothers, 1940. 636 p. illus. 24 cm. \$5.00.
4676a

Contents: The development of modern management. Basic factors in organization and operation. Functions and the division of responsibility. Organization structure and morale. Business control and procedure. The industrial organization. Plant location. The plant and its equipment. Materials handling. Lighting and air conditioning. Product and process planning. Fundamental considerations in production control. Production control in intermittent manufacturing. Production control in the shop. Production control with continuous manufacturing. Quality control. Time and motion study. The maintenance of plant and equipment. Materials and the function of supply. Materials standards and inventory control. Purchasing, and the function of supply. The stores and salvage functions of supply. The personnel organization. Personnel procurement and organization maintenance. Industrial health and medical supervision. Labor relations and employee morale. Employee education and training. Personnel research, standards and control. Office management. Cost and budgetary control. Bibliography. Index.

Note: This volume is primarily intended for the elementary student of the subject although the author believes experienced executives might profit from it in so far as the book records some of the more advanced management practices and the more important trends in modern management. The illustrative material in the revised edition has been greatly increased in an attempt to compensate partially for the student's lack of practical contact with industrial conditions. Important industrial changes since the first edition have been noted and efforts have been made to show their effect on operating problems.

DAVIS, RALPH CURRIER

Shop management for the shop supervisor. New York: Harper & Brothers, 1941. 333 p. illus. 21 cm. \$2.50.
4676b

Contents: Management and the industrial organization. Plant and equipment. Production control. The control of job-shop production. The foreman's responsibility for production control. Production control in mass-production shops. Quality control. Motion and time study. Plant maintenance. Materials control. Stores and salvage. Labor management and the shop supervisor. Index.

Note: Since the shop supervisor is the key executive in industrial organizations, the training of such supervisors becomes of paramount importance. This book is designed to serve as a text for such training courses. The illustrative material consists of figures showing shop organization as well as other items intended to help supervisors in more efficient lay-out of work. There is included an outline showing the principal phases of supervision in on-the-job training of workers.

DIEMER, HUGO

Factory organization and administration. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1935. 412 p. illus. 23 cm. \$4.00.
4677

Contents: The field of factory management. Management science. Management principles. Organization and control. Typical factory organizations. Financial control. The corporate structure. Centralized planning. Bills of material. The drafting department. The pattern department. Stores and stock department. Aids in taking inventory. The purchasing department. Control of operations. Time and motion studies. Wage systems. Time taking and pay rolls. Inspection. Shipping and receiving. Maintenance and tools. Foundry systems. Cost accounting. Personnel work. Office management. Executive reports. Factory layout and design. Factory location. Management as a profession. Index.

Note: A reference book for officials in manufacturing corporations, works managers, superintendents, and department heads who desire a knowledge of factory management and administrative science. The work may also be used as a text in engineering colleges or schools of commerce. The forms and methods described are intended as typical of the best modern practice and exemplify the coordination of departments, accounts, and systems, although some methods have since been superseded and there is no mention, for example, of the punched card system now widely used for personnel records, accounting, and general statistics. The fifth edition contains some changes in arrangement and new developments in technique from 1925 to 1935.

FERNSTROM, KARL DICKSON, AND OTHERS

Organization and management of a business enterprise, by Karl D. Fernstrom, Robert F. Elder, Wyman P. Fiske, Albert A. Schaefer, and B. Alden Thresher. New York: Harper & Brothers, 1935. 703 p. illus. 22 cm. \$4.25. 4677a

Contents: The nature of business. The initiation of an enterprise. The organization of an enterprise: Financial organization. Operating organization. Marketing organization. Accounting organization. Planning for the enterprise. The operation of an enterprise: Manufacturing the product. Selling the product. Financing current operations. Control of the enterprise: Control of manufacturing operations. Control of sales operations. Control of finances. Problems of readjustment. Index.

Note: This volume is the result of the experience gained in courses given by the several authors over a considerable period of time in the Department of Business and Engineering Administration in the Massachusetts Institute of Technology. Although designed for use in giving an introductory course in business management in educational institutions, the authors believe it can be used profitably by those already engaged in business. Primary consideration in the book is given to management of manufacturing enterprises and the authors believe their approach to the subject unique in that the interrelated aspects of management are developed by approaching the subject from the point of view of the problems of entrance upon new ventures.

HALSEY, GEORGE D.

Making and using industrial service ratings: practical suggestions for measuring and rating individual performance of executives and employees; including how to use these ratings in improving performance. Foreword by Samuel W. Reyburn. New York: Harper & Brothers, 1944. 149 p. illus. 22 cm. \$2.50. 4677b

Contents: Definition and importance of service ratings. Fundamental requirements for a successful service rating program. Rating forms for nonsupervisory employees. Rating forms for supervisory employees. A rating for top-flight executives. Using self-ratings as a part of the service rating program. The efficiency rating system of the Federal government. Steps in installing or revising a service rating program. Administration of the service rating program. Typical statement from an employee's handbook. Using service ratings in training and correction. The supervisor's problem cases.

Note: Intended primarily for operating and personnel executives who are interested in the practical aspects of service rating. Basic principles are discussed, but only as they elucidate the author's choice of method in a particular instance. The book is arranged so that it may be used as a text in supervisor training courses in shop and office or as a reference book in college courses in personnel administration. The foreword is an account of the beginning of the use of rating sheets for department store training as it was initiated by Lord and Taylor in the city of New York.

KIMBALL, DEXTER SIMPSON, AND DEXTER S. KIMBALL, JR.

Principles of industrial organization. Fifth edition. New York: McGraw-Hill Book Company, Inc., 1939. 478 p. illus. 23 cm. (McGraw-Hill industrial management series. D. S. Kimball, consulting editor) \$4.00. 4678

Contents: The background of industry. The industrial revolution. The economic and social effects of inventions. The growth of industrial enterprises. Other industrial tendencies. Formation and maintenance of policies. Industrial ownership. Location, arrangement, and construction of industrial plants. Principles of organization. Coordination and executive control; system. Operation standardization; time and motion studies. Purchasing. Stores and stock. Standards and standardization. Attainment of standards; inspection. Principles of cost finding. The depreciation of wasting assets. Equipment policies. The compensation of labor. Measurements of management. The mechanization of industry. Industrial relations. Industrial democracy. Science in industry. Index.

Note: A textbook for college courses in industrial management, written primarily for students of industrial engineering but useful also as a reference book for the practicing engineer, or for the manager interested in the fundamental principles of scientific organization without regard to any specific system. General principles only are dealt with and no attempt is made to offer any specific remedy for industrial evils. The origin and development of our industrial system is outlined, followed by a detailed study of the principles of scientific management and organization. A chapter is devoted to an appraisal of various employee payment plans. Bibliographic references appear throughout the text. The fifth edition represents no marked change in the general plan of the previous editions, but contains more recent statistics and some new material on Federal legislation.

KNOEPEL, CHARLES EDWARD

Managing for profit; working methods for profit planning and control. With the collaboration of Edgar G. Seybold. New York: McGraw-Hill Book Co., Inc., 1937. 343 p. illus. 23 cm. \$3.50. 4678a

Note: The purpose of this book is to explain to executives the use of advanced tools and methods and to stress management's relation to profit. The book is also useful to accountants as a basic text explaining the engineering side of costing, budgeting, trend determination, and profit making.

KNOWLES, ASA SMALLIDGE, AND ROBERT D. THOMSON

Industrial management. New York: The Macmillan Company, 1944. 791 p. illus. 22 cm. \$4.50. 4679

Contents (abridged): Part I, Introduction: The study of management. Budgeting, an over-all view of management questions. Problems. Part II, Management of physical property: Principles of selecting physical property. Selecting the site. Plant location. Selection of machinery and equipment. Selection of factory services and buildings. Maintenance management. Part III, Organization of the physical plant: Plant layout and management. Techniques of plant layout. Motion study and plant layout. Material handling. Organization and layout for storeskeeping. Plant layout and safety. Part IV, Management of manpower: Organization and morale. Safety and health. Selection and training. Motion study and the worker. Time study. Job evaluation. Merit rating. Measuring manpower performance. Employee compensation. Questions. Problems. Part V, Production control: Introduction to production control. Nomenclature. Storeskeeping control. Development and engineering. Planning procedure. Type 1 control. Type 2 control. Type 3 control. Type 4 control. Part VI, Cost control: Distribution of overhead expense. Control of variable costs. The cost diagram and its ratios. The triangle diagram. Questions. Problems. Bibliography. Index.

Note: For industrial executives, supervisors, and foremen, and for college students of industrial management or industrial engineering. The subject matter is drawn from actual management and consulting experience, and is confined to topics of immediate concern to persons who must direct the work of others in manufacturing enterprises.

KOEPKE, CHARLES AUGUSTUS

Plant production control. New York: John Wiley and Sons, Inc., 1941. 509 p. illus. 23 cm. \$4.00. 4680

Contents (abridged): The production of goods before the industrial revolution. Manufacturing problems during James Watt's time. The development of industry during the nineteenth century. An analysis of some of the factors which aid modern productivity. Coordination of sales and manufacturing. Scope of production control and its organization. Research, product design, and nomenclature. Production and expense budgets. Materials—their classification and selection. Purchasing, receiving, inspection, and storing of materials. Inventory control and waste elimination. Plant capacity, maintenance and repair, depreciation and obsolescence. Machine replacement. Methods and standards in the plant. Small tools and tool cribs. Product analysis, planning and routing production. Estimating production requirements and costs for factory jobs. Economic lot sizes. Preparing and distributing manufacturing orders. Dispatching, and internal transportation of materials and tools. Centralized control of production. Inspection. Measures of factory performance. Index.

Note: A text- and reference book for the industrial engineer and student, as well as for the efficiency engineer and industrial executive, which deals with the maximum production of goods with the minimum confusion and expense. The problems involved in planning for the production of goods in a modern factory are outlined and discussed, with detailed descriptions of modern methods of controlling the flow of goods through the plant, based on studies made by the author in fifteen well-organized plants in the United States. Bibliographies follow each chapter.

LANSBURGH, RICHARD HINES, AND WILLIAM R. SPRIEGEL

Industrial management. Third edition, rewritten and reset. New York: John Wiley and Sons, Inc., 1940. 666 p. illus. 23 cm. \$4.50. 4681

Contents (abridged): Part I, Introduction: Administrative policies and management as business factors. The management movement. Part II, Fundamental considerations in industrial management: Basic management decisions. Plant location. Organization developments and types. Morale building as a factor in organization. Part III, The plant as a tool of management: The factory building and plant layout. Industrial air conditioning. Factory power. Part IV, The product: Product development and research. Machines and equipment. Inspection. Part V, Personnel relations: Organized labor and management. Employee participation in management. Employee service activities. Employee training methods. Industrial safety. Part VI, Wage payment—basic relations of employer and employee: The basis of industrial wages. Taking time studies. Special forms of wage payment. Part VII, Managerial controls and operating procedures: Control through the use of the budget. Control of sales. Production planning—routing, scheduling, dispatching. Governmental influences on management. Part VIII: Appendix. Details of standard nomenclature. Use of standard practice instructions. Bibliography. Index.

Note: A treatment of the problems, ideals, and methods of successful industrial management. Stress is placed on general organization problems, and the idea of a management which inspires faith is emphasized. The third edition is revised to place emphasis upon the social and personnel aspects of industrial organization and management. A chapter has been added which summarizes briefly some of the governmental influences upon management.

MAYNARD, HAROLD BRIGHT, AND G. J. STEGEMERTEN

Guide to methods improvement. New York: McGraw-Hill Book Company, Inc., 1944. 85 p. 19 cm. \$1.00. 4682

Contents: The way to plenty. The questioning attitude. Breaking down the job. Purpose of operation. Design. Process analysis. Inspection requirements. Material. Material handling. Setup or workplace layout. Tools and equipment. Working conditions.

Note: A short manual showing how by applying a systematic questioning attitude many improvements in methods and production may be made. It explains how to analyze an industrial operation, how to break it down into the major factors to be considered, and for each factor it gives a list of specific practical questions. Typical examples of the actual improvements resulting from these questions are included.

MITCHELL, WILLIAM NORMAN

Organization and management of production. New York: McGraw-Hill Book Company, Inc., 1939. 417 p. illus. 23 cm. (Business and economic publications, William Hobart Spencer, editor) \$4.00. 4683

Contents: Preface. Editor's foreword. Nature and scope of the production process. Economic organization of production. Technological organization of production. Regional organization of production. Managerial organization of production. Product design and control. Plant design and layout. Problems of procurement. Control of the plant investment. Control of the working capital investment. Control of labor costs. Planning of production operations. Appendix. Index.

Note: A textbook for an introductory course in production management for university students of business. Emphasis is placed upon the organization of production and the problems faced by the production executive. The appendix provides ref-

erences for each chapter and exercises consisting of practical problems for class discussion.

MOONEY, JAMES DAVID, AND ALAN C. REILEY

The principles of organization. New York: Harper and Brothers, 1939. 223 p. 22 cm. \$3.00. 4683a

Contents: Organization. The coordinative principles. The scalar principles. The functional principle. The staff phase of functionalism. The principles of organization as revealed in history. Governmental organization in antiquity. Feudal organization in the Middle Ages. The evolution of modern forms of constitutional government. The principle of functionalism illustrated in constitutional government. Governmental organization and the economic state. General features of Catholic Church organization. Functionalism in Catholic Church organization. The staff principle in Catholic Church organization. The character of military organization. The scalar and functional principles in military organization. The evolution of the general staff. The organization of a general staff. The historical background of modern industry. The rise of modern industrial organization. Internal problems of modern industrial organization. The administrative problems of modern industry. The labor problem. The external problems of industry. The present challenge to leadership.

Note: The authors believe that industrial organizations because of pressure from the social orders, communism, socialism and fascism, should be well informed on the structural as well as the psychic phases of all kinds of organization. This volume is a history and discussion to satisfy that need.

MUTHER, RICHARD

Production-line technique. With a foreword by Erwin Haskell Schell. New York: McGraw-Hill Book Company, Inc., 1944. 320 p. illus. 23 cm. \$3.50. 4684

Contents: Part I, Line production: Introduction. Line production. Advantages and limitations. Part II, Establishing the line: Methods and equipment. Movement of material. Layout. Balance. Installation. Part III, Operating the line: Organization and planning. Materials control. Production control. Quality. Maintenance. Personnel. Part IV, Diversification in line production: Flexibility. Modifications of line production. Problems. Index.

Note: A practical, simply-written introduction to the use and technique of production lines in manufacturing. The book is based on notes and other material assembled in the teaching of classes in the subject at the Massachusetts Institute of Technology. Most of the chapters are supplemented by short reading lists.

PERRY, RAYMOND S., AND OTHERS

Lowering costs through better factory design, by Raymond S. Perry, Albert Kahn, H. K. Ferguson, W. J. Austin, L. J. Jordan, R. D. Frick, Stanley M. Brown. New York: American Management Association, 1940. 67 p. illus. 23 cm. (American Management Association. Production series. No. 117) Price ? 4684a

Contents: Are you ready for expansion? Building design and production efficiency. How can plant engineering reduce unit costs? Designing a "plant of tomorrow." A modern plant for continuous production of viscose rayon yarn. Campana's controlled-process plant. Planning and constructing a modern plant.

Note: Papers presented at the A.M.A. Production Conference held in Chicago, November 15-16, 1939. Each paper describes a development in plant engineering as instituted by a particular organization. The information is directed to presidents, general managers, and plant engineers. Brief biographical notes accompany each paper.

RAUTENSTRAUCH, WALTER

The design of manufacturing enterprises; a study in applied industrial economics. New York: Pitman Publishing Corporation, 1941. 298 p. illus. 23 cm. \$3.50. 4684b

Contents (abridged): The business as a whole: Introduction—the nature of the problem. The elements of the problem. Principles and methods of procedure. Redesign of an established business. The design of the system of distribution. Estimating the

financial requirements. The economics of process-plant design. The design of a new business based on a standardized plant. Selected problems: The design of the products of manufacture. Selecting the machinery for manufacture. Plant layout for the integration of manufacturing operations. Layout of industrial plant—process plant. Layout of the factory—mechanical manufacture. Bibliography.

Note: A text for engineers and students in engineering which encompasses the essential principles and methods of cost calculations used in designing and redesigning manufacturing enterprises. The bibliography consists of 121 references.

RAUTENSTRAUCH, WALTER

Principles of modern industrial organization. New York: Pitman Publishing Corporation, 1943. 312 p. illus. 23 cm. \$3.75. 4685

Contents: Introduction. Organizing unit operations. Unit operations and supporting services. The economics of unit operations. Organizing the flow of work. From policies to jobs. Outlining the major organizational procedures. Planning, scheduling, dispatching. The design function. The storekeeping function. The sales function. The purchasing function. The plant engineering and maintenance function. The economics of total operations. The measurement and control of total operations. Procedure in reorganization. Index.

Note: An elementary textbook for college students of industrial organization and for executives who wish to review the principles of organization as applied to manufacture. Besides the problems of the integration of total operations, attention is given to the problem of organizing the unit operations themselves and several supporting services with respect to function, economy, and time. Particular emphasis is placed on methods of analysis of departmental activities. Bibliographies follow each chapter.

ROETHLISBERGER, FRITZ JULES, AND WILLIAM J. DICKSON

Management and the worker; an account of a research program conducted by the Western Electric Company, Hawthorne Works, Chicago, with the assistance and collaboration of Harold A. Wright. Cambridge, Mass.: Harvard University Press, 1939. 615 p. illus. 24 cm. \$4.50. 4685a

Contents: Part I, Working conditions and employee efficiency: Introduction. Planning the relay assembly test room. Experiment with rest pauses. Experiment with shorter working days and weeks. Testing the fatigue and monotony hypotheses. Testing the effects of wage incentive. The test room operators. The relay assembly test room supervision. Part II, A plan for the improvement of employee relations: Growth and development of the interviewing program. The practical operation of the plan. The urgency and tone of industrial topics. Part III, A conceptual scheme for the understanding of employee dissatisfaction: The analysis of complaints. The interviewing method. Complaints and personal equilibrium. Attitudes within the supervisory organization. Complaints and social equilibrium. Part IV, Social organization of employees: Method and procedure in studying a shop department. The output situation in the bank wiring observation room. The supervisory situation in the bank wiring observation room. Interemployee relations in the bank wiring observation room. The internal organization of the group in the bank wiring observation room. Social control of work behavior. Formal vs. informal organization. Part V, Applications to practice of research results: An industrial organization as a social system. A restatement of the human problems of management. Implications for personnel practice. Index.

Note: A continuous, chronological history of a series of experiments carried on over a five-year period among industrial workers. The experiments were designed to disclose the causes of poor morale and inefficiency and to help determine methods of improvement. The book includes detailed records of many personal interviews of workers by investigators.

SIMONS, ALGIE MARTIN

Production management. Reviewed by Henry Post Dutton. Chicago: American Technical Society, 1940. 588 p. illus. 21 cm. \$3.50. 4685b

Contents: Locating an industry. Fixing standards. Purchasing and stores department. Scheduling production. Control of production. Drafting, tool room and inspection. Shipping and packing. Wages. Training methods. Working conditions. Trans-

fer. Promotion. Rating and personal records. Executives' authority and responsibility, etc. Index.

Note: This book of nearly 600 pages deals with the details of plant management—location, planning, organization, control of production, purchasing, good will, wages, personnel, training, working conditions and fatigue, qualifications for leadership, and the like. Published in two volumes in 1922, it now appears as a revised edition in a single volume. The chapter on good will in industry has been entirely rewritten, while the final section, comprising forty-seven pages, on business organization is new.

STARR, RICHARD B., EDITOR

Foremanship training. Foreword by John I. Yellott. New York: Prentice-Hall, Inc., 1943. 191 p. illus. 19 cm. \$2.65. 4685c

Contents: The foreman's status in present-day industrial organization. Human and physical factors in the foreman's job. The worker. How people learn. Job training. Job evaluation. Time and motion study. Wages and wage-payment systems. Industrial safety. Federal law affecting foremen. The sources and handling of grievances.

Note: The chapters in this book were prepared by members of the Engineering Defense Training Program which in 1940 began to prepare Chicago industries for the war effort. Positive suggestions for handling the foreman's daily problems are made from actual cases to illustrate techniques and are presented in conference style.

UNITED STATES. BUREAU OF MANPOWER UTILIZATION

Training and reference manual for job analysis. Washington, D.C.: War Manpower Commission, Bureau of Manpower Utilization, Division of Occupational Analysis and Manning Tables, 1944. 103 p. illus. 23 cm. Paper, \$0.20. 4686

Contents: Introduction. Job analysis. Job analysis in the Division. Jobs to be analyzed. The job analysis schedule. Steps in analyzing jobs in a plant. The narrative report. Verification of job analysis. The job specification. Suggestions for studying the manual. Appendices: Examples of completed job analysis schedules. Narrative report.

Note: This manual is devoted to an explanation of the procedures for analyzing jobs and recording the analyses according to the format of the job analysis schedule employed by the Division of Occupational Analysis and Manning Tables. The expanded procedures explained were designed to secure precise and discriminating job information to meet the needs of most job analysis programs. The manual is not the result of a single study to produce a training and reference volume on job analysis; rather it is a product evolved from the many experiences encountered during ten years of investigation, by trial, to determine the best methods of obtaining accurate and discriminating information about jobs.

YOUNGER, JOHN, AND JOSEPH GESCHELIN

Work routing, scheduling and dispatching in production. Revised edition of "Work routing in production". New York: The Ronald Press Company, 1942. 160 p. illus. 22 cm. \$3.25. 4687

Contents: Work routing. Blueprints. The instruction form. Material. Analysis of operations. Importance of the machine. Economic considerations. Lot sizes. Interrelation of work routing. Standardization, and cost accounting. Cost accounting for planning. Job shop planning. The Gantt chart in work routing. Centralized versus decentralized planning. Company policies. Quality control. Simulation. Tools, jigs, and fixtures. Planning from the sales curve. Material handling. Production personnel. Planning the new building. Planning for accelerating or freezing production. Rhythm in manufacturing. Sundry problems.

Note: A book written for two groups of users: executives and others concerned with daily problems in industry, and students of industrial management and engineering in college classrooms interested in the science underlying manufacturing that attains maximum accomplishment and lowest cost. The treatment states plainly the underlying principle or law for each step in the control of the work routing program, and at the same time shows how these fundamentals are put into everyday practice. The experience of representative manufacturing concerns is drawn upon freely through examples, cases, allusions.

TIME AND MOTION STUDY

BAILEY, NORMAN R.

Motion study for the supervisor. New York: McGraw-Hill Book Company, Inc., 1942. 111 p. illus. 19 cm. \$1.25. 4688

Contents (abridged): The why of motion study. Motions. The analysis sheet. Occasional motions. Combining "work elements" for timing purposes. Training the operator in the new methods.

Note: This book was written primarily as a textbook for the supervisor in order to give him full understanding of motion-study observations made in his department from time to time.

BARNES, RALPH MOSSER

Motion and time study. Second edition. New York: John Wiley & Sons, Inc., 1940. 390 p. illus. 23 cm. \$3.75. 4688a

Contents: Definition and scope of motion and time study. History of motion and time study. Extent to which motion and time study may be profitably used. Process and operation analysis. The use of micromotion study. Definition of therbligs. Micromotion study equipment. Making the motion pictures. Film analysis. The use of the therbligs. Fatigue. Principles of motion economy as related to the use of the human body. Principles of motion economy as related to the work place. Principles of motion economy as related to the design of tools and equipment. Standardization—written standard practice. The relation of time standards to wage incentives. Making the stop-watch study. Determining rating factor, allowances, and time standard. Determining time standards from elemental time data and formulas. The use of elemental time data and formulas—two cases: gear hobbing and soldering cans. Determining time standards for die and tool work. Determining time standards for assembly operations—classification and definition of motions—determination of time values. Determining time standards for assembly operations—an application. Training the operator. Problems. Bibliography. Index.

Note: A detailed study of the technique of micromotion study. The principles and findings here are presented for the use of those supervising work and for use as a textbook and a handbook for industry. This edition amplifies the material on process charts, operation analysis, and visual direction and includes more illustrative material. Problems for each chapter are collected at the end of the volume.

BARNES, RALPH MOSSER

Work methods manual. New York: John Wiley & Sons, Inc., 1944. 136 p. illus. 22 cm. \$1.75. 4689

Contents: Introduction. Developing a better method. The job breakdown. Process charts—flow diagrams. Activity charts—man and machine charts. Operation analysis—right- and left-hand charts. Fundamental hand motions—motion analysis—Simo charts. Ten principles of motion economy. Putting the new method into effect. Index.

Note: A compact yet complete and practical presentation of the principles of work organization and motion economy. The style is non-technical, and the material is suitable for use by supervisors, foremen, and workers. Motions and methods used in performing various manual jobs are analyzed. The text is supplemented by clear pertinent illustrations.

CARROLL, PHIL, JR.

Timestudy for cost control. Second edition. Foreword by C. D. Dyer, Jr. New York: McGraw-Hill Book Company, Inc., 1943. 301 p. illus. 23 cm. \$3.00. 4690

Contents: Timestudy for control. Standard data. Management initiates control. The standards department. Type of man. Beginning the timestudy. Element timestudy. Rating the timestudy. Element standards. Planning the solution. Comparison sheet. Setup standards. Treatment of variables. Working data. Typical working data. Standardizing specifications. The standard data write-up. Setting and recording the standard. Application of measurement. Direct results of measurement. Maintaining the measure. Basis for control. Manual of reference data. Index.

Note: A text and reference book for students of industrial engineering and practicing engineers, outlining the fundamentals of procuring the correct time allowances for every operation which comes within the scope of the wage-incentive plan, together with a study of the various practical methods in current use which permit rapid determination of correct standard times. The work indicates how timestudy furnishes an intimate knowledge of the product, equipment, and methods of manufacture, and improves the powers of observation, analysis, and salesmanship as well, at the same time developing a sense of proportion for weighing the cost to effect gains. The second edition contains minor revisions and additions.

CHANE, GEORGE W.

Motion and time study. New York: Harper & Brothers, 1942. 88 p. illus. 24 cm. (Rochester technical series) \$1.40. 4691

Contents: Introduction to motion and time study. The order of study. Process charts. General treatment of process charts. Man and machine process charts. Hand motions. The fine tool of measurement "to find a better method." Job standardization using photography. Therblig analysis. The laws of motion and motion analysis principles. The human factor in job standardization. Wages and wage incentives. Computing the standard of performance. The use of performance standards. Performance reports. Index.

Note: A textbook prepared for use in evening schools for adults and designed to serve as a guide to management personnel in the solution of various problems of waste motion in industry. Engineering methods are introduced to establish the best time and sequence of industrial operations. An elementary study which does not attempt to cover the complete field of industrial management.

HOLMES, WALTER G.

Applied time and motion study. New York: The Ronald Press Company, 1938. 335 p. illus. 22 cm. \$3.75. 4692

Contents: The economy problem in industrial operation. What to study in improving operations. Economic conditions and methods. Qualifications and senses of the operator. Work habits, skill and rhythm. Fatigue from work. Qualifications and equipment of the analyst. Recording the time study. Time study methods. Leveling the time study. Time study allowances. The twenty-four therbligs. Body member movements and times. The process chart. The motion chart. Motion analysis. Analysis of motion pictures.

Note: A practical book which combines time and motion study into a unified whole, giving complete practice for making studies, interpreting and setting rates. Features are: operating conditions for 24 therbligs; author's time values for fundamental movements, each from 1,000 observations tested in practice; economic work place stock containers; food cost allowances; worked-out examples solving time study and efficiency problems of an operator or factory; allowance application; determining intervals shorter than .01 minute; and motion charts comparing untrained and trained operators.

LOWRY, STEWARD MCKINLEY, AND OTHERS

Time and motion study and formulas for wage incentives, by Steward M. Lowry, Harold B. Maynard, and G. J. Stegemerten. Third edition. New York: McGraw-Hill Book Company, Inc., 1940. 432 p. illus. 23 cm. (McGraw-Hill industrial management series; D. S. Kimball, consulting editor) \$5.00. 4693

Contents: Preface. Economic necessity for measurement of labor. Aims, fundamentals, and development of time study. Qualifications of a successful time-study man. Elements of time study. Use and construction of process charts. Operation analysis. The basic divisions of accomplishment. Laws of motion economy and their corollaries. Characteristics of motions. Taking sound pictures for motion study. Film analysis procedure. Standardizing the job. Time-study equipment. Observations. Information. Skill. Effort. Computations and summary. Determination of standard times by leveling. Allowances. Allowed time. Studying existing conditions. Using the time study. Principles of formula construction. General analysis and survey. Collecting and tabulating data. Classifying operations and determining constants and variables. Formula expression. Testing and selling the formula. The formula report. Clerical routine. Formula-revision procedure. Formula for panel mounting. Formula for engine lathe. Formula for alloy castings molded on bench. Index.

Note: A guide to the reduction of cost in industry through improvement of production methods. In this third edition the material relating to the study of methods has been expanded. Accordingly some of the formula examples and descriptions of wage-payment subjects have been omitted.

MAYNARD, HAROLD BRIGHT, AND G. J. STEGEMERTEN

Operation analysis. New York: McGraw-Hill Book Company, Inc., 1939. 298 p. illus. 23 cm. \$3.00. 4694

Contents: Preface. The function of methods engineering in industry. Approach to operation analysis. Limitations of operation analysis. Types of methods study. Field of application of six types of methods study. Process charts. The operation process chart. Flow process charts. The analysis sheet. Use of the analysis sheet. Operation analysis: purpose of operation. Complete list of all operations performed on part: inspection requirements—material—material handling—set-up and tool equipment—ten common possibilities for operation improvement. Man and machine process charts. Plant-layout practices. Operation analysis—working conditions and methods. Operation-analysis check sheet. Progress process charts. Index.

Note: A description of the procedure for conducting operation analysis. It is designed for students of methods engineering procedure and other men connected with the producing activities of any industrial enterprise. The authors have tried to make operation analysis a specific, systematic procedure which would give results in the form of methods improvements.

MYERS, HERBERT J.

Simplified time study, for factory supervisors, shop stewards and cost men. New York: The Ronald Press Company, 1944. 140 p. illus. 22 cm. \$2.50. 4694a

Contents: A need for brief and simple instructions. Who should know about time study. The time study equipment. First steps in a time study. Another simple step. Leveling factors. Allowances. Making the time study—hand operation. Time study of

machine operation. Time study calculations. Accumulating basic data for future use. Making use of basic time standards. Some further considerations. Other methods and a goal. Index.

Note: A guide for the factory supervisor, foreman, shop steward, or cost man, rather than for the professional time study engineer. The object is to simplify the subject of time study for the layman. There are numerous photographs, drawings, charts, diagrams, and examples of time study sheets.

SAMPTER, HERBERT C.

Motion study. New York: Pitman Publishing Company, 1941. 152 p. illus. 21 cm. \$1.75. 4695

Contents: Introduction. Over-all motion study. Applying over-all motion study. General motion study. Working area. Operation charts. Therbligs. Laws and principles. Micromotion study. Motion study applied to design. Safety and fatigue. Cleanliness and order. Conclusion. Index.

Note: A brief statement of the principles of motion study, with particular application to the study of a process as a whole. The author emphasizes the use of flow process charts and points out the value of motion study not only as applied to existing jobs, but also in the planning of new jobs.

SCHUTT, WILLIAM H.

Time study engineering. New York: McGraw-Hill Book Company, Inc., 1943. 426 p. illus. 23 cm. \$5.00. 4696

Contents: The time-study engineer. Time-study equipment. Motion analysis. Analyzing the operation and watch reading. Decimal problems. Determination of task and price. Efficiency rating. Studies with special or foreign elements. Studies on press operations. Drill presses. Milling machines. Lathe operations. Spot and projection welding. Butt welding. Roll forming machines. Power bending machines. Dieing machine. Turret lathes. Automatic screw machines. Grinding. Polishing. Line task (no conveyor). Plain assemblies. Progressive assemblies. Slide-rule reading. Spraying. Enameling. Cadmium plating. Nickel plating (still-tank setup). Group bonus and standard hours. Budget control. Process charts or flow charts.

Note: Designed for practical use by men beginning a study of the subject and by men already concerned with the application of time study methods in industry. No previous technical training is required to understand the discussion.

SHUMARD, FREDERICK WARREN

A primer of time study. New York: McGraw-Hill Book Company, Inc., 1940. 519 p. illus. 23 cm. \$5.00. 4697

Contents: Introduction. Outlook and requisites for time study: time-study possibilities—qualifications for time-study men. The stop watch. The slide rule. The rating method. Analysis of labor. Analysis of operation and establishment of elements. The shop observation sheet and the timing of manual operations. Building standards on manual operations. Building standards on machine operations. Variables and incidentals. Preparation and setups. Available idle time, attention and interference. Rest factors. Unusual time studies. Establishing wage scales. Making an application. Modified basis of performance. The checking card. Applying inspection operations. Group-piece and premium plans. Setting up overhead rates. Time-study standardization. Organizing a time-study department. Final examination. Index.

Note: A textbook for anyone interested in time-measurement procedure as applied to industrial operations. The approach is elementary and is concerned mainly with the use of the stop watch as a means of establishing standard time and energy values for manual and machine labor elements in these operations. Problems are provided in each chapter and answers are given for those who plan a home-study course.

SAFETY ENGINEERING

AMERICAN SOCIETY OF MECHANICAL ENGINEERS

A.S.M.E. boiler construction code. Sections I to VIII. New York: The American Society of Mechanical Engineers, 1940-41. 8 parts. illus. 22 cm. \$9.00. 4698a

Contents: Sections I, VI, and appendix, Rules for construction of power boilers, 254 p. Section II, Material specifications, 286 p. Section III, Rules for construction of boilers of locomotives, 31 p. Section IV, Rules for construction of low-pressure heating boilers, 51 p. Section V, Rules for construction of miniature boilers, 46 p. Section VII, Suggested rules for care of power boilers, 88 p. Section VIII, Rules for construction of unfired pressure vessels, 187 p. Section IX, Standard qualification for welding procedure and welding operator, 48 p.

Note: This work consists of eight paper-bound parts in a special cloth bound binder. It contains rules formulated by the Boiler Code Committee, and approved by the A.S.M.E. Council, covering boilers and unfired pressure vessels. The primary object of the code is safety. The rules, originally adopted in 1914 and in this volume revised for the ninth time, were formulated to afford reasonably certain protection of life and property and to provide a margin for deterioration in service so as to give a reasonably long and safe period of usefulness. The code is intended for the use of engineers, manufacturers, and government officials. Parts may also be purchased separately.

AMERICAN STANDARDS ASSOCIATION. SECTIONAL COMMITTEE ON CODE FOR PRESSURE PIPING.

American standard code for pressure piping: power, gas and air, oil, district heating, refrigeration, fabrication details, materials. Approved by American Standards Association, November, 1942. New York: The American Society of Mechanical Engineers, 1942. 227 p. illus. 20 cm. (American Standards Association. B31.1) \$2.00. 4698b

Contents: Introduction. Power piping systems. Gas and air piping. Oil piping systems. District heating piping systems. Refrigeration piping systems. Fabrication details. Materials—their specifications and identification. Index.

Note: This code is one of a series of safety codes on various subjects formulated under the general auspices of the American Standards Association. It was first issued in 1935 as an American Tentative Standard. The 1942 code is extensively revised and brought up to date, and the section on refrigeration piping systems is new. The code is intended to set minimum safety requirements expressed in language intelligible to all who design, manufacture, and erect piping systems. Its principal purpose is to serve as a guide to state and municipal authorities in the drafting of their regulations. The code is also intended to serve as a standard of reference for minimum safety requirements by equipment manufacturers, architects, engineers, erectors, and others concerned with pressure piping.

AMERICAN STANDARDS ASSOCIATION. SECTIONAL COMMITTEE ON A SAFETY CODE FOR ELEVATORS

American recommended practice for the inspection of elevators: inspectors' manual. Approved by American Standards Association, July, 1937. Sponsor organizations: National Bureau of Standards, American Institute of Architects, The American Society of Mechanical Engineers. New York: The American Society of

Mechanical Engineers, 1937. 80 p. illus. 20 cm. (American Standards Association. A17.2) \$0.75. 4698c

Contents: Preface. Introduction. Part I, Routine inspection: Inspection from inside of car. Inspection made outside of hoistway. Inspection made from top of car. Inspection made overhead. Machine inspection—electric. Machine inspection—belt drive. Machine inspection—hydraulic. Handrope mechanism. Slack-cable inspection. Inspection made in pit. Part II, Initial or data inspection. Appendix. Blank pages for data and notes. Index.

Note: This manual is intended to serve as a guide for the general use of elevator inspectors. It is based upon the requirements of the American standard safety code for elevators, dumbwaiters, and escalators.

AMERICAN STANDARDS ASSOCIATION. SECTIONAL COMMITTEE ON A SAFETY CODE FOR CRANES, DERRICKS, AND HOISTS

American standard safety code for cranes, derricks, and hoists. Approved by American Standards Association, January, 1943. New York: Published by The American Society of Mechanical Engineers, 1943. 91 p. illus. 19 cm. \$1.50. 4699

Contents (abridged): Part I, Construction and installation: General rules. Overhead and gantry cranes. Jib and pillar cranes. Locomotive crawler and motor-truck cranes. Derricks. Simple drum hoists. Overhead electric hoists and base-mounted electric hoists. Air hoists. Sheaves, pulleys, slings, chains, and ropes. Part II, Inspection, testing, and maintenance. Part III, Operation.

Note: The purpose of this code is to present a coordinated set of rules to serve as a guide for state and municipal authorities. The suggestions leading to accident prevention are given both as mandatory and as advisory provisions, and compliance with both types may be required of employees by their employers. The code also finds application in industry, serving as a guide to both manufacturers of equipment and to the purchasers and users of the equipment.

ASSOCIATION OF CASUALTY AND SURETY EXECUTIVES. NATIONAL CONSERVATION BUREAU

Handbook of industrial safety standards. Revised 1942 edition. Including supplement on wartime protection. New York: National Conservation Bureau, 1942. 190 p. illus. 19 cm. Paper, \$0.55; cloth, \$0.75. 4699a

Contents (abridged): Foreword. Supervision, inspection and employee education. First aid and hospital. Resuscitation. Personal protection. Housekeeping and storage of materials. Sanitation. Illumination. Building exits. Elevators. Steam boilers. Engines and turbines. Identification of piping. Electrical equipment. Mechanical power transmission equipment. Moving parts of machines. Guards for machines. Hand tools. Exhaust. Explosive vapors and gases. Spray coating. Tank operations. Acids and caustic liquids. Appendix. Index. Supplement: Duties of the defence coordinator. Fire protection. Incendiary bombs. Warden services. Prevention of sabotage. Medical services. Camouflage. Blackout methods and materials.

Note: This handbook for executives is a compilation of generally recognized industrial safety requirements. Wherever possible, the material is drawn from the safety codes adopted as national standards by the American Standards Association and the American Society of Mechanical Engineers; governmental and fire underwriters' codes and regulations; and recommendations of engineering and other organizations properly recognized as national authorities.

BERMAN, HARRY HOWARD, AND H. W. MC-CRONE

Applied safety engineering. New York: McGraw-Hill Book Company, Inc., 1943. 189 p. 21 cm. \$2.00. 4700

Contents: Basic considerations. Getting down to cases. How to make investigations. Investigation reports on the cases. How to write safety rules and regulations. Pattern safety rules and regulations. How to write safety messages. Safety messages on cases. How to hold safety conferences. Safety conferences on cases. How to make a safety talk. How to make a safety inspection. Appendixes. Index.

Note: A handbook and guide for the safety engineer, presented on a modified case basis and emphasizing the methods rather than the content of safety engineering. The handling of accident cases individually and collectively is shown to be an important factor for successful safety work. Specimen investigation reports and model rules and regulations are offered as patterns for guidance and there are numerous suggestions for increasing the scope and effectiveness of safety inspections.

BLAKE, ROLAND PATTON, EDITOR

Industrial safety, by T. O. Armstrong, Roland P. Blake, J. J. Bloomfield [and others]. Foreword by Henry T. Heald. New York: Prentice-Hall, Inc., 1943. 435 p. illus. 23 cm. \$5.00. 4700a

Contents: Introduction to safety engineering. Brief history of industrial safety in America. Accident costs. Appraising safety performance. Circumstances surrounding accidents. Analyzing causes of accidents. Fundamentals of accident prevention. Job safety analysis. Plant inspection. Accident investigation. Layout and arrangement. Purchasing for safety. Plant housekeeping. Maintenance. Handling material. Hand tools. Low-voltage electrical hazards. Fundamentals of machine guarding. Guarding of transmission machinery. Guarding of woodworking machines. Guarding of metal-working machines. The prevention of falls. Methods of promoting safe practice. The safety inventory. Safety organization. The new employee. Safety and health standards and rules. Accident records and reports. Fire prevention and protection. First aid. Personal protective equipment. Industrial health hazards. Bibliographies.

Note: A textbook for safety engineering classes and a reference book for those responsible for the operation of safety programs. All chapters were written by men with long experience in industrial safety. Each has encompassed in his discussion the developments made during World War II. The "Safety references" include 14 books, and "Industrial health hazard references," 18 books.

HEINRICH, HERBERT WILLIAM

Industrial accident prevention; a scientific approach. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 448 p. illus. 21 cm. \$3.00. 4701

Contents: Preface. Principles of accident prevention. Basic philosophy of accident prevention. Creating and maintaining interest in safety. Fact finding. Corrective action. Machine, prime-mover, and power-transmission guardings. Process and procedure revision. Safety psychology. Fatigue. Occupational disease. Illumination. Safety organization—first aid and hospital. Accident statistics. Education of employees. Summary. Appendixes: Chronology of industrial accident prevention. The background of industrial safety. A message to foremen. Primary causes of accident proneness. Standards for mechanical guarding. Industrial-accident statistics. Causes of compensated accidents. Relation of age to industrial injuries. Bibliography. Index.

Note: A textbook and guide to accident prevention in industry. This revised edition is prepared to give more information on the subject, and to this end changes have been made in the text in the interest of greater consistency, clarity, and better arrangement. Method is emphasized rather than detail, as it is the author's belief that satisfactory results will follow if the method is correct, regardless of the details of procedure used.

JUDSON, HARRY HARLOW, AND JAMES M. BROWN

Occupational accident prevention. New York:

John Wiley & Sons, Inc., 1944. 234 p. 21 cm. \$2.75. 4702

Contents (abridged): Section 2, Improvement of work procedures: Plant housekeeping. Handling materials. Maintenance problems. Prevention of falls. Personal protective equipment. Employee training. Maintaining interest. Section 3, Improvement of plant: Accident causes and sources. Layout and arrangement. Illumination. Guarding. Electrical conditions. Fire prevention and extinguishment. Section 4, Safety activities: Compensation laws. Safety organization. Plant inspections. Accident reports and records. Cause-of-accident code. First aid facilities. Artificial respiration. Psychology and safety. Standards and codes. American standard method of compiling industrial injury rates. Index.

Note: This work is designed for use as a textbook and as a reference manual. It is based on material used in courses given under the United States' Engineering, Science, and Management War Training Program.

KOSSORIS, MAX D., EDITOR

Shipyard injuries and their causes, 1941. Washington, D.C.: Government Printing Office, 1943. 34 p. 22 cm. (United States. Bureau of Labor Statistics. Bulletin no. 722) Paper, \$0.10. 4703

Contents (abridged): Summary. Scope and method of survey. The industry and its hazards. The industry record, 1941. Detailed section: Time of injury. Injuries and the age of workers. Kinds of injuries. Causes of injury. Typical shipyard accidents. Appendix.

Note: The general section of this study is based upon reports received from 93 shipyards which were in actual operation during the major part of 1941 working on vessels of 150 feet or more in length. Detailed tables of data are included.

REIGELUTH, RAY JOHN

Safety and economy in heavy construction. New York: McGraw-Hill Book Company, Inc., 1933. 237 p. illus. 19 cm. \$2.50. 4704

Contents: Safety organization. Setting portable boilers. Firing boilers. Care of boilers. Rigging. Wire rope and sheaves. Chains. Gin poles, derricks and cranes. Excavation. Pile driving. Explosives. Concrete forms. Gasoline equipment. Highway construction. Buildings, tools and miscellaneous. General safety rules. Index.

Note: A brief handbook of information on construction safety methods, emphasizing the interdependence of safe working practices and economy of construction. Safety and economy are shown to be thoroughly compatible in all types of heavy construction work. The book is intended to give superintendents and foremen more definite knowledge of the strength of construction materials and of the capacity of construction equipment as well as its proper care and maintenance. Data tables on safe loadings and capacities appear throughout the text.

SCHAEFER, VERNON G.

Safety supervision. Prepared under the direction of the Division of Engineering Extension, The Pennsylvania State College. New York: McGraw-Hill Book Company, Inc., 1941. 352 p. illus. 19 cm. (The Pennsylvania State College. Industrial series) \$2.50. 4704a

Contents: Preface. Management responsibility and safety promotion. Organization for safety. Personality and supervision. Accident causes and symptoms. Habits in relation to safety. Informing new men. Attention, interest, and attitude. Learning and safety. The worker's aptitude and ability. Training for safety. Emotion and safety. The maladjusted worker. The importance of suggestion. Fatigue, monotony, and accidents. Building morale. Discipline, reward, and punishment. Index.

Note: This book is not a discussion of the engineering problems of safety or of the conventional problems of keeping accident records and making accident reports. Its purpose is to discuss the human element involved in the problems of the supervisor who must promote the safety of the workers in his division and to point out the necessity for, and some of the techniques in, good safety supervision.

UNITED STATES. DIVISION OF LABOR STANDARDS

Safety subjects. Washington, D.C.: Government Printing Office, 1944. 152 p. illus. 23 cm. (United States. Division of Labor Standards. Bulletin no. 67) Paper, \$0.20. 4705

Contents: Introduction to industrial safety. Development of the industrial safety movement. Accident costs. Accident sources and causes. Safety a responsibility of management. Appraising safety performance. Finding and correcting the hazards. Safety inspection. Job safety analysis. Accident investigation. Planning layout and arrangement. Plant housekeeping. Maintenance and safety. Handling materials. Hand tools. Low voltage electrical hazards. Prevention of falls. Safeguarding machinery. Education, training, supervision, organization. Safety organization. Safety psychology. Accident reports and records. Safety standards. Common explosion hazards. Fire prevention and protection.

Note: This pamphlet is intended to serve as a source of basic information on industrial accident prevention. The topics listed in the table of contents are treated briefly, and review questions are included.

UNITED STATES. BUREAU OF LABOR STATISTICS

Safety codes for the prevention of dust explosions. Washington, D.C.: Government Printing Office, 1936. 29 p. illus. 23 cm. (United States. Bureau of Labor Statistics. Bulletin no. 617) \$0.50. 4706

Contents (abridged): Introduction. Safety codes for the prevention of dust explosions in woodworking plants, in starch fac-

ories, in flour and feed mills, in terminal grain elevators. Safety code for the installation of pulverized fuel systems.

Note: This pamphlet is a supplement to the Bureau's Bulletin no. 562, on the same subject, which is out of print. The present bulletin includes additional codes developed by the Dust and Explosions Hazards Committee of the National Fire Protection Association to cover industries not included in the scope of the earlier bulletin, together with revisions to some of the original codes.

WIECK, EDWARD A.

Preventing fatal explosions in coal mines; a study of recent major disasters in the United States as accompaniments of technological change. New York: Russell Sage Foundation, 1942. 156 p. illus. 23 cm. Paper, \$0.75. 4707

Contents: Introductory note by Mary van Kleeck. Recent disastrous explosions. Lessons from disasters of 1940. Explosion hazards and principles of safety in coal mines. Mechanical mining. Agencies for safety. Responsibility of managers. Joint action by management and union. Mining Investigation Commission of Illinois. Joint safety committee in mines in state of Washington. Appalachian agreement of 1941. State mining laws and state mining departments. United States Bureau of Mines. New Federal legislation. Suggested program for miners' safety. The need for workers' participation. Sources of information. Index.

Note: A study of recent major disasters in coal mines in the United States considered partly as a result of technological change and the sacrificing of safeguards for greater speed and uninterrupted production. The causes in each case are studied in detail and a program of prevention, which cooperates with the U.S. Bureau of Mines and other Federal agencies, is outlined.

AGRICULTURE

General

CASTETTER, EDWARD FRANKLIN, AND WILLIS H. BELL

Pima and Papago Indian agriculture. Albuquerque, N.M.: The University of New Mexico Press, 1942. 245 p. illus. 23 cm. (New Mexico. University. School of Inter-American Affairs. New Americana studies. 1) \$3.50. 4708

Contents (abridged): The Pimans. Land, climate and vegetation. Early basis of Piman subsistence. Piman cultivated crops. Selection, development, and ownership of land. Agricultural implements. Planting, irrigation and cultivation. Harvest, storage and seed selection. Cultivation and utilization of tobacco—a ceremonial crop. General ceremonial aspects of Piman agriculture. Bibliography. Index.

Note: The material presented in this monograph is based upon field studies made by the authors among the Pima-Papago in the falls of 1938, 1939, and 1940, supplemented by data from the relevant historical, ethnographical, and archaeological literature. The account of the history of Pima and Papago agriculture and of the general basis of subsistence of these people represents a composite of ethnography, archaeology, and the history of agriculture, with the latter perhaps predominating. The territory covered lies largely within the area known as the Sonoran desert, lying partly in southern Arizona and northwest Mexico. The bibliography contains about 150 references.

DURYEE, WILLIAM BUDINGTON

Farming for security. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1943. 250 p. illus. 21 cm. \$2.00. 4709

Contents: List of illustrations. Security in today's world. The kind of farm to buy. Where to look. This or that soil. What price land? What shall we use for money? Farm ownership security. Country conveniences. A living from poultry. Successful flock management. The simplest type of farming. Meat-animal production. Bees as income producers. Food from the garden. The family milk supply. Fruits that grow on trees and bushes. How to prune fruit trees. Ornamenting the country home. Marketing farm products. Index.

Note: An attempt to set forth a design for living in the country and to indicate how food, clothing, and shelter can be obtained in a rural setting. The work is based upon the experience of the author on his own farm and in agricultural teaching, farm demonstration work, and farm management advice, and as an executive officer in a state department of agriculture. Advice is given on the choice of a farm, telling what to look for and consider, and on the things which can be raised.

FORSTER, GARNET WOLSEY

Farm organization and management. New York: Prentice-Hall, Inc., 1938. 432 p. illus. 23 cm. \$4.00. 4710

Contents (abridged): The nature of modern farming. The nature of farm management. Selection and combination of farm enterprises. Specialized and diversified farming. The economics of farm practices. Farm layout. Selection and acquisition of the farm. Selection and acquisition of farm implements and machinery. New forms of management in agriculture. Economic reports as aids to management. The share rental contract. The cash rental contract. Credit for farm operation. Index.

Note: A textbook for agricultural colleges which integrates economic principles with sound farm practices.

FRASER, WILBER JOHN

Profitable farming and life management. With an introduction by Thomas Nixon Carver. Danville, Ill.: The Interstate Printers and Publishers, 1937. 416 p. illus. 24 cm. \$2.75. 4711

Contents (abridged): Part I, Profitable production: Fundamental considerations in farming and farm life. Better cooperation of factors needed for higher production and profit. Consider all essentials in choosing a farm. Right kind and variety of crops important to successful farming. Marketing the produce to advantage. Part II, Rational consumption: Must save to own home and farm. How to save in home and personal expenses. Investing is a problem. How investing in land pays out. Part III, Abundant living: Low cost but high standard of living. Agriculture needs well-educated thinker. The farm home.

Note: The purpose of this book is to point out to farm people a practical, economical method of making the improvements so sorely needed in farming and farm life and to illustrate the necessity and benefit of applying this method to production, rational consumption, and more abundant life. Questions on the reading matter are found at the end of each chapter with a list of references for further study.

GRAY, LEWIS CECIL, AND ESTHER KATHERINE THOMPSON

History of agriculture in the southern United States to 1860. With an introductory note by Henry Charles Taylor. New York: Peter Smith, 1941. 2 v. illus. 26 cm. (Reprinted from Carnegie Institution of Washington Publication no. 430, 1933) \$7.50 each volume. 4712

Contents (abridged): Volume I: Part I, Agricultural beginnings and geographic expansion: Agriculture before the coming of the English. The beginnings and development of agriculture in Virginia and Maryland. Beginnings of agriculture in the Carolinas. Agriculture in the lower Mississippi Valley and Gulf coastal plain in the eighteenth century. Further agricultural expansion in the colonial period. Part II, Agricultural industries in the colonial period: Pioneer stages of economic activity. Grain crops. Minor crops and general crop husbandry. Livestock husbandry. Growth of the colonial tobacco industry and conditions of production and exportation. The tobacco industry. Part III, Institutional development in the colonial period: Genesis of the plantation system. Development of the labor bases of the colonial plantation system. The colonial land system. Credit and marketing. Part IV, Economic evolution of the South: General tendencies. Economic efficiency and competitive advantages of Negro slavery under the plantation system. Economic types and social classes; the whites and the blacks. Extent and character of plantation organization in the post-colonial period. Volume II: Part V, The development of national economy: Agricultural conditions during the Revolutionary period. Agricultural readjustment, 1783–1795. Post-colonial land policy and tenure. Changes in the supply of slave labor. Part VI, Agricultural industries and husbandry in the post-colonial period: Beginnings of the cotton industry, 1785–1814. Short-staple cotton, 1815–1860. The tobacco industry, 1795–1860. Technical progress. General farm crops. Livestock husbandry. Part VII, Geographic expansion and regional development: Transmontane expansion of general farming. Expansion of the plantation system on the basis of cotton, 1815–1860. The attempted readjustment of southern economic life. Bibliography. Appendix. Index.

Note: This scholarly work covers the economic history, agricultural economics, technical agriculture, and the general social and political history of the southern states of the United States from earliest times up to the eve of the Civil War. Besides its obvious interest to historians, the work is of considerable value as a reference for agricultural economists, directors of experiment stations, and technical research men working on current problems of southern agriculture. There is an exceptional amount

of detail on all phases of agriculture and related economics, and the facts and data presented are copiously documented with footnote references to the pertinent literature. An extended treatment is given the operations of the plantation system and its effect on economics and social life. The work also contains a detailed record of land settlement of the colonists along the coast and later of the frontier pioneers. The history and causes of slavery and its relation to southern agriculture is also covered. The exhaustive bibliography contains nearly 5,000 references including general works, journals, newspapers, bibliographies, and unpublished material. Valuable tables of statistical data are presented in the appendix.

HEDRICK, ULYSSES PRENTISS

A history of agriculture in the state of New York. Illustrations selected by the author. Albany: Printed for the New York State Agricultural Society, 1933. 462 p. illus. 23 cm. \$3.00. For sale by the N.Y. State Agricultural Experiment Station, Geneva, N.Y. 4713

Contents: The forest. Indian agriculture. Land. The agricultural legacy of the colony. Migrations. Agricultural organizations. Sustaining industries. Turnpikes. Country life a hundred years ago. Country food and drink. Waterways. Railways. Some curious inter-relations of religion and agriculture. Human labor displaced by machinery. The printing press and the farmer. Farm crops. Livestock industries. Horticulture: "an elegant branch of husbandry." The state aids agriculture. Readjustments. Books helpful to the author. Index.

Note: A social history of New York agriculture, rather than an economic, scientific, or statistical record. The growth of farming communities and their influence is discussed, and the changes and developments in agriculture are depicted. The book covers the period from the first settlements to the close of the nineteenth century, no attempt being made to treat the problems, changes, and forces of the twentieth century.

HOPKINS, JOHN ABEL

Elements of farm management. Revised edition. New York: Prentice-Hall, Inc., 1940. 489 p. illus. 21 cm. \$2.95. 4714

Contents (abridged): Economic activity and choosing an occupation. Types of farming. Specialization or diversification? Obtaining the use of a farm. Organizing the farm and the farmer's resources. Budgeting and planning. The principle of diminishing physical output. The principle of diminishing economic returns. The crop system. The livestock system. The field layout. Selecting equipment to economize labor. Selecting the type of power—horses or tractor. Budgeting for general expenses. Records to check up on farm performance. Making efficient use of labor. Checking up on performance—use of records. Modifying the budget and allowing for price changes. Cooperation in current farm management. Financing the farm business. The farmer's market contacts. Index.

Note: The purpose of this book, which is a textbook for beginning students of farm operation, is to set forth some of the basic principles of agricultural production economics in a simple and realistic manner. The book, however, is organized primarily around practical problems that arise in farm management. The revised edition contains a more complete consideration of the major types of farming areas in the United States, together with new and more detailed maps than were in the first edition. Certain chapters have been rewritten in the light of information obtained by the National Research Project of the Works Project Administration in the investigation of farm technology and its effects upon employment.

HUDELSON, ROBERT R.

Farm management. New York: The Macmillan Company, 1939. 396 p. illus. 22 cm. \$2.00. 4715

Contents: Introduction—what farm management includes. Part I, Organizing the farm business: Choosing a farm. Deciding on the type of farming. Choosing the cropping system. Laying out fields and farmstead. The planning and arrangement of buildings. Planning the livestock enterprises. Planning the pasture system. Budgeting feed supplies. Choosing power and equipment for the farm. Part II, Operating the farm business: Controlling production hazards. The work program. Keeping in touch with market prospects. Adjusting production to demand. Pro-

ducing supplies for the home. Marketing as a part of farm management. Part III, Farm finances and farm accounts: Gaining ownership of the business. Tenancy as a means of financing the farm business. Insurance for the farm and farmer. Making a financial budget for the farm business. Farm records and accounts. Measuring farm efficiency and size of business. Index.

Note: A text and reference book dealing with this subject from the point of view of the individual farm operator. The book is designed also for use as a high-school or agricultural school textbook.

HUNT, ROBERT LEE

Farm management in the South. Danville, Ill.: The Interstate Printers and Publishers, 1942. 566 p. illus. 22 cm. \$2.20. 4716

Contents: Farming as a vocation. Some characteristics of present day farming. Some characteristics of southern agriculture. Determining the choice of farm enterprises. Differences in the efficiency of the factors of production. Combining the factors of production. Selecting farm power and equipment. Selecting a farm. Measuring the success of a farm. Specialized and diversified farming. Size of farms. The farm budget. Estimating livestock production under range conditions. Need for livestock in the farm program. Budgeting livestock enterprises. Keeping farm records. The farm layout. Financing the farm. Economic information as a guide to farm adjustments. Cooperation as a means of increasing farm profits. Conservation and farm management. Farm rental contracts. Planning farm home consumption. Appendix. Glossary of terms. Selected references. Index.

Note: A textbook that deals specifically with problems of farm management in the southern United States, and is designed primarily for use of students of vocational agriculture of technical and high school grade.

JESNESS, OSCAR BERNARD, AND REYNOLDS I. NOWELL

A program for land use in northern Minnesota; a type study in land utilization. Minneapolis: The University of Minnesota Press, 1935. 338 p. illus. 24 cm. \$2.50. 4717

Contents: Part I, The background: Description of the region. Present uses of land. Natural areas. The economic and social consequences of planless land use. Present policies and programs of adjustment. Part II, Land classification and zoning: Improved utilization of private forest lands. Acquisition and utilization of land for public purposes. Improved use of agricultural land. Problems involved in moving farm families. Adjustments in local government. Translating proposals into effective programs. Index.

Note: From a first-hand investigation under the joint auspices of the University of Minnesota and the Bureau of Agricultural Economics of the United States Department of Agriculture the authors have arrived at definite conclusions and a specific program for the utilization of cut-over regions. They describe concretely how desirable shifts in land use and changes in government can best be accomplished; what legislation should be enacted; how the cooperation of local officers, the settlers, and the general public can be won; and how in the process of readjustment the farmer can be saved from undue hardship and embarrassment. A volume for the legislator, the public official, the landowner, and the agricultural economist.

KAINS, MAURICE GRENVILLE

Five acres and independence. A practical guide to the selection and management of the small farm. Revised and enlarged edition. New York: Greenberg, 1940. 413 p. illus. 21 cm. \$2.50. 4718

Contents (abridged): City vs. country life. Tried and true ways to fail. Who is likely to succeed? The farm to choose. Where to locate. Essential factors of production. Renting vs. buying. Capital. Farm finance. Farm accounts. Water supply. Sewage disposal. Drainage. Irrigation. Live stock. Poultry. Bees. Greenhouses. Soils and their care. Cropping systems. Weeds. Tools. Re-making a neglected orchard. Fruit tree pruning. Vegetable crops to avoid and to choose. Seeds and seeding. Plants for sale. Something to sell every day. Strawberries. Grapes. Small farm fruit gardens. Selection of tree fruits. Storage of fruits and vegetables. Essentials of spraying and dusting. The farm library. Appendixes. Index.

Note: Tells how to select, finance, stock, and develop the small farm, pointing out common mistakes to avoid as well as tried methods of success. Based on the personal experiences of the author, the work covers nearly every type of problem the small-farm owner, particularly the novice, is likely to encounter. Useful for the practical farmer as well as for the prospective home-plot farmer. There are numerous useful drawings of farm management details and layout, together with 22 tables of miscellaneous data.

KLAGES, KARL HENRY WILLIAM

Ecological crop geography. New York: The Macmillan Company, 1942. 615 p. illus. 24 cm. \$4.50. 4719

Contents (abridged): Part I, The social environment of crop plants. Part II, The physiological environment of crop plants. Part III, The ecological factors. Part IV, The geographical distribution of crop plants. Author index. Subject index.

Note: This book attempts to place the many problems incident to the distribution of crop plants on a physiological basis. It is intended for college students of crop ecology and plant geography, and for agronomists in general, economists, geographers, and others. Bibliographies are given at the end of each chapter.

McGEE, ROGER VALENTINE

Mathematics in agriculture. New York: Prentice-Hall, Inc., 1942. 189 p. illus. 23 cm. (Prentice-Hall mathematics series; A. A. Bennett, editor) \$3.35. 4720

Contents (abridged): Mathematical operations. Percentage. Equations. Lengths, areas, and volumes. Ratio and proportion. The right triangle and trigonometry. Averages. Graphs. Special applications of practical measurements. Exponents; logarithms; the slide rule. Tables. Index.

Note: An elementary textbook of special interest to farmers and students of agriculture. Practical farm applications are used in the problems.

PLANT, LOUIS CLARK

Agricultural mathematics. New York: McGraw-Hill Book Company, Inc., 1930. 199 p. illus. 19 cm. \$2.50. 4721

Contents: Introduction. Graphing data. Numerical computation. Functions. Indices and radicals. Logarithms. Simultaneous equations. Quadratic functions and equations. Progressions. Permutations and combinations. Binomial theorem. Probability. Applications of probability to problems in heredity. Statistics. Fundamentals of trigonometry. Appendixes. Formulas. Index. Answers.

Note: A text for required courses in mathematics in agricultural colleges, with material chosen frequently from agricultural fields in which mathematics has been used as a tool. The fundamentals of algebra and trigonometry are briefly outlined and there is a rather detailed treatment of probability and statistics which the author believes is necessary for a comprehensive understanding of certain agricultural subjects, particularly in later college courses in agriculture. There is a large number of supplementary applied problems.

PRENTICE, EZRA PARMALEE

Food, war and the future. New York: Harper & Brothers, 1944. 164 p. illus. 24 cm. \$2.50. 4722

Contents: Feeding our future numbers. A century of grace. A new agriculture for the 20th century. Democracy in America. Conclusion. Index.

Note: This book deals with the question of food and its relationship to domestic and international principles. Self help through agricultural education is stressed as the only solution for each nation's economic ills after the war. How the solution of these problems will affect America in her plans for the future is fully discussed.

ROBERTSON, FRED

Manual of mathematics for students of agriculture. New York: The Dryden Press, Inc., 1941. 334 p. illus. 25 cm. (The Dryden Press

mathematics publications; general editor, E. R. Smith) \$1.95. 4723

Contents: Part I, Algebra: Graphical methods and formulas. Fundamental operations. Exponents and radicals. Linear equations with applications. Quadratic equations. Logarithms. Ratio, proportion, variation. Progressions. Interest and annuities. Maxima and minima. Permutations, combinations, and probability. Land location. Approximate measurement. Statistics. Review problems. Part II, Trigonometry: Trigonometric functions of positive acute angles. Simple applications. Trigonometric functions of general angles. Graphical methods. Trigonometric functions of two or more angles. Solutions of any triangle. Inverse trigonometric functions. Trigonometric equations. Appendix. Index.

Note: A loose-leaf, spiral-bound text in laboratory manual form, including exercises which are to be worked out in the space provided after each problem. As indicated in the title, the work is intended for students of agriculture and the problems are chosen with farm applications in mind.

SCOTT, WINFIELD, AND JOSEPH B. PAUL

Permanent agriculture, a textbook of general agriculture. New York: John Wiley & Sons, Inc., 1941. 614 p. illus. 21 cm. (The Wiley farm series, edited by A. K. Getman and C. E. Ladd) \$2.50. 4724

Contents: Unit I, The farmer's struggle for economic security: The farmer in a changing world. Marketing, methods and agencies. Marketing, the regular method and private agency. Marketing, the regular method and the cooperative agency. A Farm Board takes form. Unit II, Soil conservation and management: Drainage. Erosion. Rotation. Soil fertility. Unit III, Conservation and improvement of plants: Plant foods, their origin and use. Reproduction in plants. Insect enemies of crop plants. Weeds. Improvement of crop plants. Unit IV, The care and improvement of common field crops: Corn and corn production. Wheat and its production. Oats, barley, rye, rice, and flax. Grazing and hay lands of the United States. Cotton. Sorghum, sugar cane and sugar beets. Fruit production. Gardens. Unit V, Conservation and improvement of farm animals: Breeding and feeding farm animals. Horses. Beef cattle industry. Dairy cattle industry. Swine industry. Sheep. Poultry industry. Unit VI, The new economic era: Farm machinery and farm power. Farm finance. Unit VII, The rural way of life, a look forward: The rural home. Rural education. Appendix. Index.

Note: This volume synchronizes the human and industrial elements of agriculture. The subject matter is inclusive, presenting not only the problems of growing crops and breeding animals, but also important information on cooperation, credit, conservation, and education. The book is generously illustrated and contains an abundance of supplementary exercises.

TELLER, WALTER MAGNES

The farm primer; a manual for the beginner and part-time farmer. Philadelphia: David McKay Company, 1942. 266 p. illus. 21 cm. \$2.50. 4725

Contents: Land and water. Houses and outhouses. Tillage of the soil. Tools and the man. Subsistence livestock: dairy cow, dairy goat, sheep, swine, steer or calf, poultry, bees, rabbits, cavies and white rats, game, fur bearing animals, dog and cat, draft horse. Raising and buying feeds for subsistence livestock. Garden and orchard (and food notes). Other types of supplemental farming and farm products. Government and other agricultural agencies. Financing and planning. Appendixes. Bibliography (annotated). Index.

Note: An introduction to agriculture for those who set out to farm without the benefit of formal agricultural instruction. It assumes no theoretical knowledge on the part of the reader. The bibliography contains suggestions for the foundation books of a farm library.

UNITED STATES. DEPARTMENT OF AGRICULTURE

Atlas of American agriculture. Physical basis including land relief, climate, soils, and natural vegetation of the United States. Prepared under the supervision of O. E. Baker. Contributions from the Weather Bureau, Bureau of Chemistry

and Soils, Bureau of Plant Industry, Forest Service, Bureau of Agricultural Economics. Washington, D.C.: Government Printing Office, 1936. 6 v. in 1. illus. (part col.) 27 cm. \$17.00.

4726

Contents: Introduction. Land relief, by F. J. Marschner, 1936, 6 p. Climate: Temperature, sunshine, and wind, by Joseph B. Kincer, 1928, 34 p. Climate: Frost and the growing season, by William Gardner Reed, 1918, p. 29-40. Climate: Precipitation and humidity, by J. B. Kincer, 1922, 48 p. Part III: Soils of the United States, by C. F. Marbut, 1935, 98 p. The physical basis of agriculture: Natural vegetation: Grassland and desert shrub, by H. L. Shantz; Forests, by Raphael Zinn, 1924, 29 p.

Note: The series of colored maps of the United States published in this volume are accompanied by text, graphs, selected references, and, in the case of the last two parts, photographic illustrations. The publication is of permanent reference value to students of agriculture, of climate, soils, and natural vegetation of the United States. The maps would also be useful to persons considering farming from the commercial standpoint or seeking a home in the United States, and who wish information as to climatic, topographic, and soil conditions in any given section of the country. The various parts are also sold separately.

UNITED STATES. DEPARTMENT OF AGRICULTURE

Farmers in a changing world, edited by Gove Hambidge and Marion Julia Drown. Washington, D.C.: Government Printing Office, 1940. 1215 p. illus. 23 cm. (United States. Department of Agriculture. Yearbook of agriculture 1940) \$1.50.

4727

Contents: Foreword, by Claude R. Wickard, Henry A. Wallace. 1940 yearbook committee. Farmers in a changing world—a summary, by Gove Hambidge. Part 1, The farmer's changing world: The farmer's changing world. Old ideals versus new ideas in farm life. American agriculture—the first 300 years. Agriculture in the World War period. The development of agricultural policy since the end of the World War. Part 2, Agriculture and the national welfare: Agricultural surpluses and nutritional deficits. The farmer's stake in greater industrial production. The city man's stake in the land. Part 3, The farmer's problems today and the efforts to solve them: Agriculture today: an appraisal of the agricultural problem. Our major agricultural land use problems and suggested lines of action. The challenge of conservation. Our soil can be saved. The new range outlook. Forest-resource conservation. Farm management problems in an era of change. The influence of technical progress on agricultural production. The place of forests in the farm economy. Acreage allotments, marketing quotas, and commodity loans as means of agricultural adjustment. The meaning of foreign trade for agriculture. Reciprocal trade agreements—a new method of tariff making. Methods of increasing agricultural exports. The industrial market for farm products. Reducing the costs of food distribution. Marketing-agreement programs as a means of agricultural adjustment. Thirty million customers for the surplus. Barriers to internal trade in farm products. Standardization and inspection of farm products. Cooperative marketing by farmers. The growth of farm-city cooperative associations. The transportation problem of agriculture. Agricultural credit. Crop insurance. Rural taxation. Rural electrification. New conditions demand new opportunities. The rural people. Patterns of living of farm families. Overcrowded farms. Farm tenancy. Farm labor in an era of change. Beyond economics. Part 4, Farm organizations: Trends in national farm organizations. Part 5, What some social scientists have to say: Cultural anthropology and modern agriculture. Democracy in agriculture—why and how? The cultural setting of American agricultural problems. Education for rural life. The contribution of sociology to agriculture. A philosophy of life for the American farmer (and others). Part 6, Democracy and agricultural policy: Public information and the preservation of democracy. Science and agricultural policy. Schools of philosophy for farmers. Old and new in agricultural organization. Cooperative land use planning—a new development in democracy. Part 7, Essentials of agricultural policy: Some essentials of a good agricultural policy. Appendix: A brief chronology of American agricultural history. Index.

Note: This is a book on "the farm problem." About 70 writers, specialists in various phases of agricultural economics, collaborated to produce the volume, which is intended to sum up needs, methods, results, and at the same time indicate shortcomings along the social and economic frontiers of agriculture. References, where listed, are at the ends of chapters.

WARING, P. ALSTON, AND WALTER MAGNES
TELLER

Roots in the earth; the small farmer looks ahead. Foreword by Louis Bromfield. New York: Harper and Brothers, 1943. 202 p. illus. 21 cm. \$2.50.

4728

Contents (abridged): This book is written by farmers. Two Pennsylvania farms. You can't escape into farming. We can have a permanent agriculture. Farming for the family. The small farmer goes to market. Six farmers on an upland stream. The conflict between big and little farmers. Why they fight over the Farm Security Administration. The small farmer looks at the United States Department of Agriculture. The meaning of rural education. A new kind of individualism. New men on the land. Will the war take us deep enough?

Note: A popular discussion of the small farmer's economic position in the United States today and what he can do to make his type of farming more secure and profitable.

Soils and Fertilizers

BAVER, LEONARD DAVID

Soil physics. New York: John Wiley & Sons, Inc., 1940. 370 p. illus. 23 cm. \$4.00.

4729

Contents: Introduction. The mechanical composition of soils. Physical characteristics of soil colloids. Soil consistency. Soil structure. Soil water. Soil air. Soil temperature. Physical properties of soil and tillage. Physical properties of soils in relation to runoff and erosion. Index.

Note: Essentially a comprehensive review of carefully selected material from the extensive literature of soil physics research. Conclusions and the interpretation of results are stressed, with less attention being given to apparatus and methods. A liberal list of references is given at the end of each chapter. The book is written from the agronomic viewpoint, with little material upon the engineering aspects of soils other than those pertaining to soil conservation. Summaries of the important work of Russian, German, and French physicists are given. Quantitative concepts are introduced where they are helpful, and in general the mathematical treatment is kept at a suitably elementary level. Line drawings, mostly graphs showing experimental data, illustrate the text.

BEAR, FIRMAN EDWARD

Soils and fertilizers. Third edition. New York: John Wiley & Sons, Inc., 1942. 374 p. illus. 23 cm. \$3.50.

4730

Contents: Foreword. Factors affecting crop growth. Nitrogen and mineral requirements of crops. The water requirements of plants. The origin and classification of soils. Chemical composition of soils. Some biological processes in soils. Some physical properties of soils. The water in soils. The air in soils. The soil solution. The control of soil water. The mechanical improvement of soils. Supplying organic matter. Rotating crops. Nitrogen economy in soils. Mineral economy in soils. Limestone economy in soils. The livestock system of farming. Soil sanitation. Controlling the soil reaction. Nitrogen fertilizers. Phosphoric acid fertilizers. Potash fertilizers. Mixed fertilizers. The selection of fertilizers. The application of fertilizers. Index.

Note: This book formerly was entitled *Soil management*. It is intended for beginners in the study of soils and fertilizers, and for all farmers interested in soil improvement. Its purpose is to acquaint the reader with the application of those scientific facts and principles useful in planning constructive systems of soil management and increasing the productivity of soils. Five main problems receive major emphasis in this thoroughly revised edition. They are: the requirements of crops; the characteristics of soils; the utilization of soil resources; the conservation of soil resources; and means of supplementing soil resources. In developing the discussion modern concepts and terminology are introduced. Greater emphasis than heretofore is placed on the increasingly important problems of soil conservation and erosion control. The need for trace elements receives greater attention. Explanations are given of recent methods of manufacture of fertilizer materials and mixtures. Statistical tables and reference lists are included, as well as a modern soil map of the United States.

BEESON, KENNETH CREESE

The mineral composition of crops with particular reference to the soils in which they were grown; a review and compilation. Washington, D.C.: Government Printing Office, 1941. 164 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 369) \$0.20. 4731

Contents: Introduction. Some soil characteristics cited in relation to the occurrence of certain nutritional diseases of man and animals: Studies of the relation of soils to bone diseases. Studies of the relation of soils to the nutritional anemias. Studies of the relation of soils to "lecksucht." "Alkali disease" or selenium poisoning. Iodine. Other nutritional disorders associated with soils. Summary of sections on soil characteristics. Factors affecting the mineral composition of plants: Effect of soil composition on mineral composition of plants. Effect of soils on botanical composition of herbage of pastures. Summary of effects of soils. Effect of fertilizers on plant composition. Miscellaneous factors influencing the mineral composition of plants: Age of plant. Climate. Irrigation. Variety. Mineral content of different parts of the plant. Literature cited. Sources of unpublished material. Appendix: Tables of crop composition.

Note: The first 58 pages of this publication comprise a review and summary of the literature on the subject of the mineral composition of crops with particular reference to the soils in which they were grown. The next 32 pages list 607 references to the literature of the subject. The final 72 pages contain two tables, one showing the principal chemical elements in the important crops of the United States, the other showing the minor element content of the important crops. The publication is intended for nutritionists, agronomists, and others interested in the chemical composition of crops.

BENNETT, HUGH HAMMOND

Soil conservation. New York: McGraw-Hill Book Company, Inc., 1939. 993 p. illus. 23 cm. (McGraw-Hill series in geography) \$6.00. 4732

Contents (abridged): The problem in the United States. Erosion and civilization. Results of erosion. Processes and types of erosion. Climate and soil erosion. Relation of erosion to crop yields. Sedimentation. Geology and soil erosion. A national program of soil conservation. The place of forestry in soil and water conservation. Contouring. Terracing. Gully prevention and control. Control of erosion on highways. Wildlife and soil conservation. Soil conservation and flood control. Early efforts toward erosion control. Erosion problems in foreign countries. Soil conservation surveys.

Note: Describes land loss, due to soil erosion, and the progressive waste of productive earth under the wash of rain and the sweep of wind, with its broad implications of social and economic decline. The relationship between erosion, wasted rain, floods, and the increasingly serious problem of sedimentation is explored. Measures of soil defense are outlined in a program of national conservation action.

BROWN, IRVIN CECIL, AND HORACE G. BYERS

The chemical and physical properties of dry-land soils and of their colloids. Washington, D.C.: Government Printing Office, 1936. 56 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 502) \$0.10. 4733

Contents: Introduction. Description of the soils: Scobey series. Spearfish series. Badlands. Pierre series. Keith series. Hays series. Pullman series. Pecos series. Pima series. Rough stony land. Methods of examination. Analytical results. Hygroscopic relations. Carbon-nitrogen ratios. General discussion. Summary. Literature cited.

Note: The chief purpose of the study reported in this bulletin was the examination of the soil colloids in a series of soils in which the distinctive environmental condition was a difference of temperature. The data presented include mechanical and chemical analyses of the whole soils, as well as descriptions of the colloids. Pedocal soil profiles included are derived from

soils developed under a mean annual temperature range between 40° and 69° F. A field description is given of each soil series and of the particular profile examined.

BROWN, IRVIN CECIL, AND OTHERS

A study of claypan soils, by Irvin C. Brown, T.D. Rice, and Horace G. Byers. Washington, D.C.: Government Printing Office, 1933. 43 p. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 399) \$0.05. 4734

Contents: Introduction. Description of soils: Fillmore soils. Crete soils. Hastings soils. Holdrege soils. Keith soils. Phillips soils. Fargo soils. McLeansboro soils. Methods of examination. Analytical results. Hygroscopic relations. General discussion. Summary. Literature cited.

Note: This study in the relation between chemical characteristics of claypan soils and their classification throws light upon the processes of production of claypans and colloid constitution. Presented are detailed mechanical and chemical analyses of complete profiles of eight claypan soils in Nebraska, Montana, Minnesota, and Illinois, together with the analyses of their colloids.

BYERS, HORACE GREELEY, AND OTHERS

The composition and constitution of the colloids of certain of the great groups of soils, by Horace G. Byers, Lyle T. Alexander, and R. S. Holmes. Washington, D.C.: Government Printing Office, 1935. 39 p. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 484) \$0.05. 4735

Contents: Introduction. Methods of examination. The Barnes loam profile. The Carrington loam profile. The Miami silt loam profile. The Ruston loamy sand profile. The Cecil sandy clay loam profile. The Colombiana clay profile. The Podzol profiles. General discussion. Group distinctions. Summary. Literature cited.

Note: This bulletin presents a study of the colloids of six of the great groups of soils of North America as represented in samples characteristic of each group. The description of each soil profile is given. The detailed analytical data include mechanical and chemical analyses of the soils and chemical analyses of the colloids.

CHILEAN NITRATE EDUCATIONAL BUREAU, INC.

Bibliography of references to the literature on the minor elements and their relation to plant and animal nutrition. Third edition. Originally compiled by L. G. Willis. New York: Chilean Nitrate Educational Bureau, Inc., 1939. 488 p. 28 cm. \$5.00. 4736

Note: This annotated bibliography contains 4,628 abstracts and references to the books, publications, and articles issued up to January, 1939, and covers such elements as aluminum, arsenic, barium, boron, bromine, calcium, cerium, chlorine, chromium, copper, fluorine, gold, iodine, iron, lead, lithium, magnesium, manganese, mercury, radium, selenium, silicon, sodium, sulfur, thallium, tin, and zinc. There is an author index, an element index with complete direct and cross-references. As indicated in the title, only publications which refer to plant, animal, and human nutrition are listed. The abstracts vary from about 50 to 350 words in length. The present edition brings the literature up to 1939 and employs a changed type of format. There is a *Botanical index* published separately (24 p.) which lists references by common plant names, and there are five supplements to the original text, published at yearly intervals since 1940, which together bring the literature up to July, 1944.

COLLINGS, GILBEART HOOPER

Commercial fertilizers, their sources and use. Third edition. Philadelphia: The Blakiston Company, 1941. 480 p. illus. (part col.) 23 cm. (Blakiston books on agriculture; G. H. Collings, consulting editor) \$4.50. 4737

Contents (abridged): Origin and development of the use of commercial fertilizers. Source, production, use of sodium nitrate. Ammonium sulphate. Synthetic nitrogenous fertilizers. Organic nitrogenous fertilizers. Mineral phosphates. Bone phosphate and basic slag. Superphosphates. Ammonia solutions as sources of fertilizer nitrogen. The potash fertilizers. Fertilizers carrying the secondary essential elements, the rarer essential elements, elements not accepted as essential for plant growth. Adjusting soil reaction and fertilizer practice to crop requirement. Purchase of fertilizers. Application of fertilizers, influence of fertilizers on germination and seedling growth.

Note: An authoritative source of information on all problems concerning commercial fertilizers and their use in gaining larger yields of field and horticultural crops. The material is based upon the experience of the author as an experiment station agronomist and teacher. This edition includes information recently developed by agronomists, chemists, engineers, and fertilizer manufacturers.

EATON, FRANK MORRIS, AND L. V. WILCOX

The behavior of boron in soils. Washington, D.C.: Government Printing Office, 1939. 58 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 696) \$0.15.

4738

Contents: Introduction. Boron chemistry. Fixation of boron by soils. Boron in soil solutions. Soil solution concentrations and associated accumulation of boron in lemon leaves. Boron fixation in relation to soil texture. Boron fixation by materials other than soils. Availability to plants of boron in a tourmaline-quartz mineral. Effect of grinding soil and kaolin on boron fixation and exchange reactions. Displacement of boron from soil by phosphate, oxalate, and other anions. Discussion of the fixation of boron by soils. Summary. Literature cited.

Note: This bulletin presents descriptive and tabular data on the behavior of boron in soils used in agriculture.

FAULKNER, EDWARD H.

Plowman's folly. Norman: University of Oklahoma Press, 1943. 161 p. 20 cm. \$1.00.

4739

Contents: The margin of error. What is soil? Soil does not erode. Traditions of the plow. "Research": unsponsored . . . unconventional. Proof on a field scale. Soil by machine. King weather deposed. Tile treachery. What about soil types? Coals to Newcastle. Exit pests. Weedless farming. Mother earth can smile again.

Note: The author's thesis, based on his own successful experiments, is that farming without a plow means better crops and more of them, the end of soil erosion, no more artificial fertilizers and drainage systems, less damage from drought and bad weather, and easier control of weeds and insect pests. His arguments are at present considered to be controversial.

FRY, WILLIAM HENRY

Petrographic methods for soil laboratories. Washington, D.C.: Government Printing Office, 1933. 96 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 344) \$0.10.

4740

Contents: Introduction. Crystal form. Fundamental properties of light. The petrographic microscope and accessories. Optical methods. Application of methods. Appendix. Literature cited.

Note: It is the purpose of this publication to present in very brief form the crystallographic, optical, and manipulative principles absolutely necessary for the petrographic identification of crystals. Mathematical treatment has been eliminated so far as possible without loss of clarity.

GUSTAFSON, AXEL FERDINAND

Soils and soil management. New York: McGraw-Hill Book Company, Inc., 1941. 424 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences; L. J. Cole, consulting editor) \$3.00.

4741

Contents: The origin and placement of soil materials and soil formation. The physical properties of soils. Soil organisms. The organic matter of mineral soils. The relation of water to soils and

plants. The control of water in the soil. Tillage of the soil. Erosion of the soil. The control of soil erosion. Soil acidity and its control by liming. The management of alkali soils. Nitrogen and its importance to the farmer. The production, conservation, and utilization of farm manures. The production and utilization of green-manure crops. Fertilizer materials and their effects on soils and crops. Commercial fertilizers and their use. The rotation of crops. The fertilization and the long-term maintenance of the productivity of mineral soils. The origin of organic deposits and peat soils and their management. Appendixes: Common and scientific names of certain plants. Approximate equivalents and formulas. Index.

Note: In this book the author tells what to do in order to produce crops economically and at the same time to preserve the soil. Thus, while the book deals briefly with fundamental principles, particular emphasis is placed on their application in the field. Considerable space is devoted to the causes of soil erosion and its control. Each chapter is accompanied by discussion questions.

HAMBIDGE, GOVE, EDITOR

Hunger signs in crops, a symposium. Washington, D.C.: The American Society of Agronomy and the National Fertilizer Association, 1941. 327 p. illus. (part col.) 26 cm. \$2.10.

4741a

Contents: Foreword; what the book is about. Why do plants starve? by George D. Scarseth and Robert M. Salter. Plant-nutrient deficiency in tobacco, by J. E. McMurtrey, Jr. Deficiency symptoms of corn and small grains, by George N. Hoffer. Plant-nutrient deficiency symptoms in the potato, by H. A. Jones and B. E. Brown. Plant-nutrient deficiency symptoms in cotton, by H. P. Cooper. Plant-nutrient deficiencies in vegetable or truck-crop plants, by J. J. Skinner. Nutrient-deficiency symptoms in deciduous fruits, by O. W. Davidson. Plant-nutrient deficiency symptoms in legumes, by E. E. De Turk. Symptoms of citrus malnutrition, by A. F. Camp, H. D. Chapman, George M. Bahrt, and E. R. Parker.

Note: An important contribution to the study of plant nutrition. It is aimed at advanced students of agriculture, scientific farmers, and other persons concerned with the use of fertilizers. Colored plates and keys are used to aid in the interpretation of symptoms of nutrient deficiencies.

JENNY, HANS

Factors of soil formation; a system of quantitative pedology. New York: McGraw-Hill Book Company, Inc., 1941. 281 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences; L. J. Cole, consulting editor) \$3.50.

4742

Contents: Definitions and concepts. Methods of presentation of soil data. Time as a soil-forming factor. Parent material as a soil-forming factor. Topography as a soil-forming factor. Climate as a soil-forming factor. Organisms as a soil-forming factor.

Note: In this advanced treatise on theoretical soil science the author brings together the wealth of material available in many parts of the world and fits it into a logical frame to form a quantitative system of pedology. Soil characteristics and profile features are graphically correlated with climate, vegetation, parent material, topography, time, and human influences. Critical discussions of the fundamental concepts of formation classification and productivity of soils are included. Although emphasis is placed on soils of the United States, numerous illustrations from Europe and tropical regions enlarge the scope of the book.

JOFFE, JACOB SAMUEL

Pedology. With an introduction by the late Curtis F. Marbut. New Brunswick, N.J.: Rutgers University Press, 1936. 575 p. illus. 23 cm. \$5.25.

4743

Contents: Part I, Soil genesis: Pedology as a scientific discipline. Soil as a natural body. Soil defined, soil morphology and methods of studying it. Soil genesis: Weathering and soil formation. Soil formers. Soil forming processes. Part II, Soil systematics: Desert, semi-desert, and arid steppe types of soil formation; gray, brown, and chestnut brown soil zones. Chernozem type of soil formation. Podzol type of soil formation. Subtypes and transition types of soils in the podzol zone. Tundra

type of soil formation. Laterites and lateritic type of soil formation. Intrazonal soils: solonchak, solonetz, solodi, rendzina, etc. Bog and marsh soils. Mountain soils. Some pedological features of the soils of the United States. Appendixes. Indexes.

Note: Primarily a treatise on soils and their development, this text and reference book for student agronomists, horticulturists, foresters, and other representatives of applied agriculture deals with the study of phenomena as presented by the soil body in its natural position. Pedology as defined by the author has as its objective the elucidation of the natural laws governing the origin, formation, and distribution of soils. The work is not intended as a discussion of soil productivity but is rather primarily concerned with soil genesis and the intricate make-up of the various soil zones which make the soil both a product and factor of its geographic and climatic environment. The material is based largely on the published contributions of the Russian pedologists (particularly Zahkarov and Glinka) who developed the fundamental principles. There are 135 tables of statistical data and lengthy bibliographies, mainly of Russian works, following each chapter.

KELLOGG, CHARLES EDWIN

The soils that support us; an introduction to the study of soils and their use by men. New York: The Macmillan Company, 1941. 370 p. illus. 22 cm. \$3.50. 4744

Contents (abridged): Preface. In the first place. The building material for soils. Life and the soil. The parts of a soil. The rains come and go. Soils of little places and of big places. Soils of the grasslands, desert, forested lands (temperate), and forested lands (warm and tropical). Men use the soil. Soils for different crops. Plowing and digging. Fertilizers and lime. Control of water on the soil. When do soils "wear out?" Planning the use of the soil. Soil and our future. Appendix: Soil classification and soil maps. Descriptive outline of the great soil groups. Bibliography for further reading. Glossary. Index.

Note: An introduction to the study of soils and their use by men. Scientific information of the origin of soils, their formation, classification, and management is presented in non-technical language with emphasis on man's relation to the soil and the sociological factors in systems of agriculture and soil science.

LYON, THOMAS LYTTLETON, AND HARRY O. BUCKMAN

The nature and properties of soils; a college text of edaphology. Fourth edition, revised by Harry O. Buckman. New York: The Macmillan Company, 1943. 499 p. illus. 24 cm. (Agricultural science series, L. H. Bailey, editor) \$3.50. 4745

Contents: The soil in perspective. The supply and availability of plant nutrients in mineral soils. Some important physical properties of mineral soils. Inorganic soil colloids—their nature and practical significance. The organisms of the soil. The organic matter of mineral soils. Forms of soil water and plant relationships. Soil moisture control and related phases—run-off, erosion, and percolation. Soil moisture control—drainage, weeds, evaporation, and temperature. The origin, nature, and classification of soil materials. Soil formation, classification, and survey. The soil reaction—soil acidity and alkalinity. The nature and utilization of organic soils. Lime and its soil-plant relationships. The nitrogen economy of soils. Fertilizers and fertilizer effects. Farm manure and green manure. The fertility management of mineral soils. Author index. Subject index.

Note: Covers not only the nature and properties of soils from a scientific point of view, but also the practical applications of the principles of soil technology to crops and to the maintenance of the best soil conditions. Additional space has been given in this edition to the physics of soil moisture, the chemistry of the colloidal state, and soil genesis and classification. Footnote references to the literature appear throughout.

McKAIG, NELSON, JR., AND LEWIS A. HURST

Chemical composition of sugarcane juice as affected by fertilizers. Washington, D.C.: Government Printing Office, 1941. 64 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 754) \$0.10. 4746

Contents: Introduction. Materials and experimental procedure. Effect of fertilizer ratio on composition of juice. Effect of rate of application of fertilizers. Effect of source of nitrogen. Summary. Literature cited.

Note: Agronomic experiments with fertilizers conducted at Houma, Louisiana, provided an opportunity to study the effect of a wide variety of fertilizers on the composition of the juice of millable sugarcane under conditions that were as nearly as possible typical of plantation practices. The work reported in this bulletin, which was carried on between 1931 and 1933, had two objectives: to determine the influence of fertilizers on the composition of the juice over a representative range of the soil types devoted to sugarcane culture in Louisiana; and to determine the influence of the three common plant foods when used singly and in mixtures.

MILLAR, CHARLES ERNEST, AND L. M. TURK

Fundamentals of soil science. New York: John Wiley & Sons, Inc., 1943. 462 p. illus. 23 cm. \$3.75. 4747

Contents: Soil development. Classification of soils. Physical and chemical properties of soil. Soil reaction. Lime and its use. Soil moisture. Soil organisms—their relation to soils and soil productivity. Soil organic matter. Cover and green-manure crops. Farm manures. Nutrient requirement of plants. Fertilizers and fertilizer materials. Fertilizer practices. Soil fertility maintenance and productivity rating of soil. Soils and agriculture of arid regions. Irrigation. Fruit soils. Lawn soils. Soil resources. Glossary. Index.

Note: This book has a fourfold purpose: to give the reader the opportunity to become familiar with soils as natural units or entities and with their inherent characteristics; to develop an understanding of the significance of fundamental soil properties; to set forth basic relationships between soils and plants; to give the reader an understanding of the principles involved in the use of proved soil-management practices.

SENNER, ARTHUR HENRY

Application of steam in the sterilization of soils. Washington, D.C.: Government Printing Office, 1934. 20 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 443) \$0.05. 4748

Contents: Introduction. Common methods of steam sterilization. Physical principles involved in steam sterilization. Objects of investigation. Test layout. Method of test. Discussion of test results. Piping. Conclusions.

Note: The principal objects of the investigation described in this pamphlet were to find the effect of initial steam pressure on the final moisture content of the soil, the final temperature of the soil, and the quantity of steam needed. The test layout described was designed to yield certain data which would be of value in the design of steam piping systems for soil sterilization.

UNITED STATES. DEPARTMENT OF AGRICULTURE

Soils & men. Washington, D.C.: Government Printing Office, 1938. 1232 p. illus. 23 cm. (United States. Department of Agriculture. Yearbook of agriculture 1938) \$1.75. 4749

Contents: Foreword, by Henry A. Wallace. The Committee on Soils. Soils and men—a summary, by Gove Hambidge. Part I, The nation and the soil, edited by Bushrod W. Allin: Public purposes in soil use. The problem: land unfit for farming in the humid areas. The problem: subhumid areas. The problem: drained areas and wildlife habitats. The problem: the nation as a whole. The causes: traditional attitudes and institutions. The causes: defects in farming systems and farm tenancy. The causes: imperfections in agricultural finance. The causes: price relations and economic instability. The remedies: education and research. The remedies: policies for public lands. The remedies: policies for private lands. The remedies: changes in agricultural finance. The remedies: direct aid to farmers. The remedies: economic stabilization. The soil and the law. Part II, The farmer and the soil, edited by A. L. Patrick: Tillage. Tillage machinery. Loss of soil organic matter and its restoration. Soil nitrogen. Phosphorus deficiency and soil fertility. Soil potassium in relation to soil fertility. Crop rotation. The use of cover and green-manure crops. Farm manure. The nature and use of organic amendments. Determining the fertilizer requirements of soils. Fertilizer materials. Mixed fertilizers. Meth-

ods of applying fertilizers. Soil acidity and liming. General aspects of the soil-erosion problem. Forests for erosion control. Grass and other thick-growing vegetation in erosion control. Strip cropping. Mechanical measures of erosion control. The coordinated approach to soil-erosion control. Special dry-farming problems. Irrigation in the United States. Soil, water supply, and soil solution in irrigation agriculture. Drainage in arid regions. Drainage in the humid regions. Management of forest soils. Part III, Soil and plant relationships, edited by M. A. McCall: The soil requirements of economic plants. Some relationships of soil to plant and animal nutrition—the major elements. Neglected soil constituents that affect plant and animal development. Selenium in soils. Plants as soil indicators. Part IV, Fundamentals of soil science, edited by Charles E. Kellogg: Soil and society. The physical nature of soil. Water relations of soils. General chemistry of the soil. Soil organic matter and soil humus. Fauna and flora of the soil. Formation of soil. Soil classification. Soil maps and their use. Part V, Soils of the United States, edited by Charles E. Kellogg: Soils of the United States. A glossary of special terms used in the soils yearbook. Literature cited. Index. Map in colors: Soil associations of the United States, Alaska, Hawaii, Canal Zone, and Puerto Rico and Virgin Islands.

Note: This volume, prepared under the direction of the 11-man Committee on Soils of the United States Department of Agriculture, has as its aim the presentation of facts and interpretations to promote understanding of the soil and better land use in the United States. The articles included in the volume cover all phases of the soil problem and are the work of more than 100 authors, most of them specialists on the staff of the Department of Agriculture.

WAKSMAN, SELMAN ABRAHAM

Humus; origin, chemical composition, and importance in nature. Second edition, revised. Baltimore: The Williams and Wilkins Company, 1938. 526 p. illus. 23 cm. \$6.50. 4749a

Contents (abridged): Part I, Historical development of our knowledge of the chemical nature of humus, its formation, and its role in plant nutrition: Nature and characteristics of humus. Types of humus. The role of humus in plant nutrition. The changing conception concerning the chemical nature of "humus" and "humic acids." "Humification" of organic matter in soils and in composts and methods of humus determination. Part II, Origin and nature of humus: Origin of humus. Isolation of definite organic chemical compounds from humus. Chemical nature of humus as a whole. Humus formation in composts of stable manures and of plant residues; green manures. Humus in forest and heath soils. Humus in mineral soils. Humus in peat and coal. Part III, Decomposition of humus, its function and applications: Decomposition of humus in nature. Presence in humus of substances injurious and beneficial to the growth of higher plants. Soil humus and the science of pedology. Humus and soil conservation. Bibliography. Index.

Note: A summary in monographic form of the available information on humus and its importance in agriculture, with emphasis on the need for proper and exact definition of the chemical nature of humus and on the correct use of the terms involved. The exhaustive bibliography lists 1608 books, monographs, and journal articles appearing in all countries. The second edition incorporates the advances made in the science of pedology between 1936 and 1938 and corrects some minor errors of the first edition.

WAKSMAN, SELMAN ABRAHAM, AND ROBERT L. STARKEY

The soil and the microbe; an introduction to the study of the microscopic population of the soil and its role in soil processes and plant growth. New York: John Wiley & Sons, Inc., 1931. 260 p. illus. 24 cm. (The Wiley agricultural series, edited by J. G. Lipman) \$3.50.

4750

Contents: The soil and the plant. The microbe and its activities. The soil population and its distribution. Role of the microbes in the decomposition of organic substances in the soil. Transformation of nitrogen by soil microbes. Transformation of mineral substances in soil through the direct or indirect action of microorganisms. Interrelationships between higher plants and soil microorganisms. Modification of the soil population. Importance of microbes in soil fertility. Index.

Note: A general introduction to the study of the whole micro-

scopic population of the soil and its relations to soil processes and plant growth, including microscopic organisms of the soil other than bacteria. The book deals with the numerous aspects of the subject, from the weathering of the parent rock to the relationship of microbes to soil fertility. Particular stress is laid on the close dependence of higher plants and hence of man and animals upon the chemical processes brought about in the soil by bacterial activity.

WEIR, WILBERT WALTER

Productive soils: the fundamentals of successful soil management and profitable crop production. Edited by R. W. Gregory. Fourth edition. Philadelphia: J. B. Lippincott Company, 1938. 325 p. illus. (part col.) 21 cm. \$2.40.

4751

Contents (abridged): Soils, their origin and classification. Soils from a chemical point of view. Soil and plant relations. Crop production. Factors determining soil fertility. Crop production affected by systems of cropping and by soil erosion. Appendix. Index.

Note: A textbook for use in elementary courses in vocational agriculture and a reference and guide for the practical farm worker. Presents simple statements of facts about soils and soil fertility and relates them to the fundamental principles of soil science. Questions and problems are given at the end of each chapter. The fourth edition contains a new chapter on soil conservation and all tables and factual statements have been brought up to date as of 1937.

WEIR, WILBERT WALTER

Soil science: its principles and practice, including basic processes for managing soils and improving their fertility. Chicago: J. B. Lippincott Company, 1936. 615 p. illus. 21 cm. (Lippincott's agricultural science series) \$4.00.

4752

Contents (abridged): Physical constitution of soils. Chemical nature of soils. Microbial population of soils. The modern concept of soils. Soil classification. Soil and plant relationships. Crop production and soil fertility. Tillage and tillage. Soil water and soil fertility. Irrigation and land drainage. Aeration as a factor in soil fertility. Soil reaction and soil fertility. Soil acidity and soil alkalinity. Science and art of liming acid soils. Organic matter and soil fertility. Micro-organisms and soil fertility. Plant nutrient elements. Fertilizers, their effect on soils and plants. Fertilizing plants to meet their nutrient requirements. Crop rotation and soil fertility. Soil erosion. Interpreting results of fertilizer experiments. Index.

Note: This comprehensive textbook is intended for agricultural college students and all others who are interested in soil cultivation, land conservation, and plant growth. Charts and tables accompany the text, while "Suggested references for reading" at the end of each chapter provide additional sources of material.

WILLCOX, OSWIN WILLIAM

ABC of agrobiolgy; the quantitative science of plant life and plant nutrition for gardeners, farmers and general readers. New York: W. W. Norton & Company, Inc., 1937. 323 p. illus. 21 cm. \$2.75.

4753

Contents: Preface. What is agrobiolgy? The indivisible kingdom of plants. Thinking it out. The first agrobiologists at work. Setting up the scale of soil fertility. Graduating the scale of soil fertility. The fertility index. Using the scale of soil fertility. Sources of frustration. The agrobiologic evaluation of water. The stand of plants. The quantity of plant life. More about the formula 318/N. Looking at the limits. Public soil science in the United States. Review of the basal axioms. Agrobiologic equilibria or end-states. Mathematical details. Appendix: Hints on fertilizers. Index.

Note: In this book the author, who himself has made significant contributions to agrobiolgy, outlines for the layman the basic principles of the science and emphasizes both their scientific and their practical importance. The methods employed by agrobiologists in their work and the conclusions they have reached are explained in easily understood language.

WILLIAMS, KENNETH THURMAN, AND RICHARD R. WHETSTONE

Arsenic distribution in soils and its presence in certain plants. Washington, D.C.: Government Printing Office, 1940. 20 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 732) \$0.05. 4754

Contents: Introduction. Résumé of previous work. Methods of examination. Experimental results: Arsenic content of soils and vegetation. Soils contaminated with arsenicals. Arsenic in marine algae. General discussion. Summary. Literature cited.

Note: This bulletin presents the results of cross-section examinations of a large number of representative soils in order to determine the range of arsenic content of soils in general and to discover if any relation could be found between parent material, climatic conditions, or soil properties and the arsenic content. It also presents the results of studies made to determine the extent to which plants absorb arsenic under field conditions from soils of known arsenic content. The soils examined include not only virgin soils but also a number known to be affected by arsenic compounds added in the course of years for insecticidal purposes.

WORTHEN, EDMUND LOUIS

Farm soils, their management and fertilization. Third edition. New York: John Wiley and Sons, Inc., 1941. 515 p. illus. 21 cm. (The Wiley farm series, edited by A. K. Getman and C. E. Ladd) \$2.75. 4755

Contents: Selecting the soil and planning its management. Growing the crop. Controlling the water supply of the soil. Tilling the soil. Manuring. Liming. Fertilizing. Leguming and green manuring. Managing field soils. Managing pasture soils. Managing garden, greenhouse, and lawn soils. Managing fruit soils. Appendix. Reference books on management and fertilization of soils. Index.

Note: Presents, in not-too-technical language, an authoritative discussion of practical soil management. Not only does it tell the reader what methods should be used, but how and when to use them. Each chapter concludes with a section of general information, which includes an explanation of why certain practices are followed. Precise directions are given for draining and tilling soils, for the control of erosion, for dry-land farming as well as for irrigated land. Particular attention is given to manuring, liming, fertilizing, and growing soil-improving crops. Wherever possible the discussion links recommended soil practices with specific crop practices. The results of recent laboratory studies are incorporated in the third edition, along with changes in recommended practices brought about through field demonstrations and the experiences of successful farmers. Problems to be solved and many references to pertinent literature are given.

Conservation of Natural Resources

AYRES, QUINCY CLAUDE

Soil erosion and its control. New York: McGraw-Hill Book Company, Inc., 1936. 365 p. illus. 23 cm. (McGraw-Hill publications in agricultural engineering, Daniels Scoates, consulting editor) \$3.50. 4756

Contents: Introduction. Factors affecting rate of erosion. Methods of control. Rainfall and runoff. Terrace design. Terrace location—principles and practice. Terrace construction methods and machinery. Terrace construction costs and maintenance. Terrace outlets. Control of gullies. Temporary and semi-permanent check dams. Permanent or soil-saving dams. Special uses of vegetation. Soil conservation and land use. Appendix: Simple methods of calculating land areas. Partial list of soil conserving and depleting crops. Partial list of plants favorable to soil conservation and wild life. Two-thirds powers of numbers. Square roots of decimal numbers. Bibliography. Index.

Note: Provides data on the nature of erosion, the causes of excessive erosion, and the various ways in which excessive rates

may be coped with. Over half of the book is devoted to detailed directions on strip farming, tree planting and care, and on the design and construction of terraces, diversion ditches, and soil-saving dams, together with instructions on surveying instruments and their use as applied to the problem of erosion control.

BLUMENSTOCK, DAVID IRVING

Rainfall characteristics as related to soil erosion. Washington, D.C.: Government Printing Office, 1939. 44 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 698) \$0.10. 4757

Contents: Significance of the precipitation factor in soil erosion. The problem of analyzing precipitation data: Contrasts between local and general storms. Interpreting individual station records. Areas and stations selected for study. Types of analyses undertaken. Data utilized and methods of compilation. Analysis of monthly and annual rainfall amounts. Rainfall-intensity factor. Rainfall duration. Length of periods without precipitation. Diurnal variations in rainfall amounts. Regional rainfall characteristics and their relation to soil erosion. Extension of the present mode of inquiry to include other areas. Literature cited. Appendix.

Note: This study of the relationships between precipitation and erosion analyzes rainfall data collected from nine stations in three different parts of the south central United States in terms of intensity, duration, frequency, and area factors. The purpose is to demonstrate the feasibility of handling these data so as to yield pertinent information for estimating erosion hazards.

BUNCE, ARTHUR CYRIL

Economics of soil conservation. Ames, Iowa: The Iowa State College Press, 1942. 227 p. illus. 23 cm. \$3.00. 4758

Contents: Definitions of terms. Efficiency, capacity, elasticity, and intensity. The relationship of rent to the elasticity of production and intensity of land use. Exploitation of virgin fertility and the intensive and extensive margins. Price changes and conservation. The individual and fertility maintenance. The individual and conservation when exploitation induces erosion or soil deterioration. Society and conservation. Method of social control over land use. Problems of measurement in conservation planning. War and conservation. The formulation of public policy and action. Selected readings. Index.

Note: This book is concerned with production economics as applied to agriculture, the use of the land by the individual, and the various aspects of soil conservation as related to society. The need for more accurate methods of social accounting and the necessity of developing techniques of evaluating social gains and losses are stressed and related to specific problems in soil conservation.

BURGES, AUSTIN EARLE

Soil erosion control; a practical exposition of the new science of soil conservation for students, farmers, and the general public. Revised. Atlanta, Ga.: Turner E. Smith and Company, 1938. 221 p. illus. 20 cm. \$1.60. 4759

Contents: Menace of erosion. Economic and social effects of soil erosion. Wind erosion. Soil. Factors in soil erosion. Terracing. Terracing machinery. Running terrace lines. Terrace outlets and outlet channels. Gully control. Strip crops and contour farming. Pastures. Control of pocket gophers. Reforestation. Farm reorganization. Farm ponds. Roadside erosion. Appendix. Glossary. Index.

Note: A brief treatment of erosion control as an organized whole, developed as a new science based upon the related sciences of agronomy, forestry, pedology, animal husbandry, and soil mechanics. Intended primarily as a textbook for use in schools of vocational agriculture, the book is also useful to the practical farmer. The material is presented in a brief and simplified practical form.

BUTLER, OVID MCOUAT, EDITOR

American conservation in picture and story. With 254 illustrations. Fourth printing—revised edition. Washington, D.C.: The American For-

estry Association, 1941. 160 p. illus. 30 cm.
\$2.50. 4759a

Contents: The story of the ages. Finding the forests. Forest exploitation begins. The public domain. The age of wood. The story of lumbering. The dawn of conservation. National forests. The growth of state forestry. The war against forest fires. National talks. The story of state parks. Conservation of wildlife. Conservation of fish life. The spread of forest education. National monuments. Indian forests. National forests of the East. The wilderness movement. Forest research. Insect enemies of the trees. Forest tree diseases. Problems of water. Conservation of the soil. The Tennessee Valley Authority. The Civilian Conservation Corps. The W.P.A. in conservation. Conservation and forest industry. The last of a great domain. Planning for the future. Reading references.

Note: This book for the general reader uses the illustrated-magazine format to good advantage in presenting a picture of the organic natural resources of the United States, the part they have played in the development of the country, the manner and consequences of their use, and the spread of the conservation movement from its beginning in the United States down to the present time. A bibliography of about 400 books and a large number of magazine articles makes the work valuable to students and teachers of conservation. The revised edition incorporates minor changes in the text, some new photographs, and additions to the bibliography to bring the work up to date.

CHASE, STUART

Rich land, poor land; a study of waste in the natural resources of America. New York: McGraw-Hill Book Company, Inc., 1936. 361 p. illus. 21 cm. \$2.75. 4760

Contents: Between two oceans. The primeval continent. From Plymouth Rock to Ducktown. Nature's bookkeeping. The great wheel. Crop lands. Grass lands. Forest lands. Upstream. Downstream. Creatures of land and water. Below the surface. The resource base. Planning with nature. Tennessee Valley. With consent of the governed. Land guard. Five million jobs. To save a continent. Selected bibliography. Index.

Note: A study of soil erosion and recommended conservation programs, written in lively style for the layman. The factors of rainfall, underground waters, unplanned farming and harvesting, depletion of forest reserves and mineral resources, and the potentialities of planned river valleys are considered.

CHEYNEY, EDWARD GHEEN, AND THEODORE SCHANTZ-HANSEN

This is our land; the story of conservation in the United States. With a foreword by Jay N. Darling. St. Paul, Minn.: Webb Book Publishing Company, 1940. 337 p. illus. 23 cm. \$3.00. 4760a

Contents: Land with a promise. Opening up America. Soil conservation. Our water resource. Our forest wealth. Grass as a resource. Conserving wildlife. Minerals and mineral fuels. The human resource. Bibliography. Index.

Note: To supply information for the general reader and to meet the need for a comprehensive text for colleges and vocational agriculture schools is the purpose of this book. An attempt has been made to present the material in interesting form, as free as possible from dry statistics, and generously illustrated with photographs. Review questions, suggested activities, and topics for debate are given at the close of each chapter. Seventy references arranged by subject appear in the bibliography.

GAINES, STANLEY HARRY, COMPILER

Bibliography on soil erosion and soil and water conservation, compiled by Stanley H. Gaines, with abstracts by Francesca Vincent, Marion Bloom, and James F. Carter. Washington, D.C.: Government Printing Office, 1938. 651 p. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 312) \$0.60. 4760b

Contents: List of citations by geographic regions. Introduction. Erosion and conservation in general. Bibliographies. Climate and

physiography as related to soil erosion. Drought. Economic and farm management phases of soil conservation. Educational phases of soil conservation. Engineering in erosion control. Flood control and related subjects. Forest cover in soil and water conservation. Gullies. Land-use planning and surveys for soil and water conservation. Legislation. Pasture and range management. Run-off and soil loss. Soil structure, fertility, and moisture studies. Stream flow, sedimentation, and related subjects. Vegetative and tillage control in general. Wildlife management as related to soil conservation. Wind erosion, windbreaks, and shelterbelts. Wood lots. Author index.

Note: The purpose of this annotated bibliography is primarily to provide authors, scientific specialists, and students with a medium by which they may determine what others have written on the various phases of soil erosion and soil and water conservation. Four thousand three hundred eighty-eight references to both popular and scientific material are included. References to writings on erosion in foreign countries have been included only when they contained real historic interest or had a significant bearing on erosion conditions in the United States. For references to literature on erosion in foreign languages the reader is referred to a *Selected bibliography on erosion and silt movement* (United States. Geological Survey. Water supply paper no. 797).

GRAHAM, EDWARD HARRISON

Natural principles of land use. New York: Oxford University Press, 1944. 274 p. illus. 22 cm. \$3.50. 4761

Contents (abridged): Introduction, a fresh horizon. Living things and the land. The ceaseless change. Some other ideas. Study of living things. Study of the land. Farms. Forests. Range. Wildlife. Waters. Exotic things. Control. Land and human welfare. Bibliography. Index.

Note: In non-technical terms this volume deals with the ways in which a knowledge of living things can be profitably applied to the management of land. It discusses the factors affecting the distribution of plants and animals and practical schemes for determining the uses for which particular parcels of land are best adapted. There are numerous photographs showing the contrast between areas which have been intelligently used and those which have not. A twenty-nine-page bibliography is provided, and a list of scientific names of plants and animals mentioned in the text.

GUSTAFSON, AXEL FERDINAND

Conservation of the soil. New York: McGraw-Hill Book Company, Inc., 1937. 312 p. illus. 23 cm. (McGraw-Hill publications in the agricultural and botanical sciences, E. W. Sinnott, consulting editor) \$3.00. 4762

Contents: Introduction. Soil erosion. Results of soil erosion. Influence of precipitation and latitude on soil erosion. Influence of slope and soil on erosion. Influence of natural land cover on soil erosion. Effects of crops and tillage on erosion. Maintenance of organic matter and fertilization and rotation of crops. Contour tillage and planting essential. Contour strip cropping. Terraces. Meadows, pastures, and forests. Control and elimination of gullies. Control of wind erosion. Control of wave erosion. Control of erosion on public highways. The control of floods.

Note: A practical treatment of the problem of soil erosion, describing methods of control that involve in the main the use of inexpensive farm materials and are within the attainment of the individual land owner and operator. Includes data on soil losses under various conditions in different parts of the United States and on the relative success of control methods.

GUSTAFSON, AXEL FERDINAND, AND OTHERS

Conservation in the United States, by A. F. Gustafson, C. H. Guise, W. J. Hamilton, Jr., and H. Ries. Second edition. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1944. 477 p. illus. 24 cm. \$4.00. 4763

Contents: Part I, Conservation of soil and water resources: The soil. The uses and conservation of water. Soil depletion and erosion. Soil conservation. Part II, Conservation of forests, parks and grazing lands: The nation's forests. Forest utilization, destruction, depletion. Forest conservation and management. Parks (national and state). The western grazing lands. Part III, Conservation of wildlife: Fish and fisheries. Game and fur resources.

Conservation of other useful wildlife. Part iv, Conservation of mineral resources: Mineral resources. The metals. Coal. Petroleum and natural gas. The non-metallic minerals. Selections for supplementary reading. Index.

Note: A textbook for use in colleges and schools, but also of interest to adult readers, especially for its illustrations of the methods and the results of conservation practices. The authors have been careful to use simple language, and the book is therefore understandable for the general reader. The revised edition pays special attention to war-time conservation and its importance.

LORD, RUSSELL

Behold our land. Boston: Houghton Mifflin Company, 1938. 310 p. illus. 21 cm. \$3.00. 4764

Contents: Introduction by William Allen White. Body of land. Soil and stars. Time scale. The film of life. Elder lands. New land. First wests. A few years later. The midland is taken. The midland now. The high plains are taken. Last wests. 'Back of yonder.' Bibliography.

Note: A book for the general reader. The author's main interest is in the subject of soil conservation, but he has included some geological and historical material. The region described is the United States of America with emphasis on the Middle West and West.

PARKINS, ALMON ERNEST, AND J. R. WHITAKER, EDITORS

Our natural resources and their conservation. Second edition. New York: John Wiley & Sons, Inc., 1939. 647 p. illus. 23 cm. \$5.00. 4765

Contents (abridged): The conservation movement in America, by Wallace W. Atwood. The public domain and its disposal, by Stephen S. Visher. The soils of the United States, by Louis A. Wolfanger. Soil erosion and its prevention, by H. H. Bennett. Tree crops, by J. Russell Smith. Utilization and conservation of our arid and semiarid lands, by Ralph H. Brown. The problem of our grasslands, by V. E. Shelford and H. C. Hanson. Reclamation of wet and overflow lands, by George J. Miller. The agricultural prospect, by O. E. Baker. Our forests, past and present, by J. R. Whitaker. Essential measures in forest conservation, by J. R. Whitaker. Water supply for domestic and industrial uses, by Robert M. Brown. Water power and its conservation, by Frank Williams. Our waterways and their utilization, by A. E. Parkins. Floods and flood control, by Guy-Harold Smith. Our mineral treasures, by William H. Haas. The mineral fuels, by Nels A. Bengtson. Conservation of natural resources in relation to the manufacturing industry, by Helen M. Strong. Conservation of wildlife, by V. E. Shelford. Fisheries for the future, by H. H. Martin. Recreational resources, by Edward C. Prophet. The conservation of man, by Ellsworth Huntington. State and local planning, by Loyal Durand, Jr. National regional planning in resource use, by Geo. T. Renner. Appendix. Bibliography. Index.

Note: This volume is intended to present a comprehensive view of the entire field for the beginning student of conservation, as well as for the general reader. Particular attention is given throughout the book to the extent and distribution of our national resources and to their service in regional and national development. The central purpose is to present a balanced view of resources and problems in their actual setting as part of the organic units of regions, states, or the nation. The bibliography is extensive and is arranged by chapter subjects.

PENNSYLVANIA UNIVERSITY. BICENTENNIAL CONFERENCE

Conservation of renewable natural resources: some fundamental aspects of the problem. Philadelphia: University of Pennsylvania Press, 1941. 200 p. illus. 23 cm. (Morris Arboretum monographs. II) \$2.50. 4766

Contents: The natural vegetation of the United States as a guide to current agricultural and forestry practice: Natural vegetation as a key to conservation practices, by Raphael Zinn. Man's use and abuse of native vegetation, by William S. Cooper. What forest trees tell about climate and soil, by Gustaf A. Pearson. The original grassland and desert shrub vegetation of the United States as a guide to present day agricultural practice, by Homer L. Shantz. Climatic cycles in relation to the theory and practice of conservation: Dendrochronology and studies in "cyclics," by A. E. Douglass. Periodicities in solar variation reflected in

weather, by Charles G. Abbot. Conservation and changing environment, by Paul B. Sears. Climatic pulsations and an ozone hypothesis of libraries and history, by Ellsworth Huntington. The administrative task of conservation—private and public: On total conservation, by Morris L. Cooke. Natural resources and the states, by Samuel T. Dana. Federal responsibilities in total conservation, by Milton S. Eisenhower. The forest problem can be solved by increased production and use, by Julian F. McGowin.

Note: A collection of twelve short papers by academic and industrial specialists in the field covering various aspects of conservation. Bibliographies are included with the papers by Shantz and Huntington.

SEARS, PAUL BIGELOW

Deserts on the march. Norman: University of Oklahoma Press, 1935. 231 p. illus. 20 cm. \$2.50. 4767

Contents: Man, maker of wilderness. The wisdom of the ages. Hungry Europe. Poor Richard, poor Lo. The southland. From longhorn to combine. The great pattern. Cold figures. Only God can make a tree. Leaves of grass. Mud. Wet deserts. Dust. It must be the weather. Pests. The way through. Where is the sun?

Note: In a manner which will hold the attention of the general reader, the author tells of the series of events which have done much to reduce to deserts what were once fertile areas of the United States. He points out the mistakes which have been made in the treatment of forest and pasture land, and outlines the steps which can and are being taken to rectify these mistakes.

SVOBODA, LAWRENCE

An empire of dust. Caldwell, Idaho: The Caxton Printers, Ltd., 1940. 203 p. illus. 23 cm. \$3.00. 4768

Contents: Harvest a wheat crop. The land begins to blow. Enter the A.A.A. Winds of chance. A maize king abdicates. Black blizzard. Tragedies of dust. Blow dirt farming. A new menace strikes. Heat. Dust sickness. If I should leave the dust bowl. I fight for a harvest. Last stand. Exodus. Conclusion.

Note: In 1929, the author moved to Meade county, Kansas, where he lived for nine years. From his own experience he has written of the plight of the average farmer there when the soil began to blow. Photographs of the ruined countryside illustrate the text.

UNITED STATES. ENGINEER DEPARTMENT. BEACH EROSION BOARD

Manual of procedure in beach erosion studies. Washington, D.C.: Government Printing Office, 1939. 77 p. illus. 23 cm. (United States. Corps of Engineers, U.S. Army. Beach Erosion Board. Paper no. 2) Gratis. 4768a

Contents: Introduction. Development of a cooperative beach erosion study. Development of a Shore Protection Board study. The beach erosion study—general. The beach erosion study—past history. The beach erosion study—field investigation. Plan of improvement.

Note: A brief manual providing in convenient form for use by engineers and others interested in beach protection a summary of the legislation and regulations affecting beach erosion and shore protection studies in the United States, and indicating the procedure to be followed in securing cooperative studies, the field and office work considered desirable, and typical plans of improvement and their applications.

UNITED STATES. NATIONAL RESOURCES COMMITTEE

Energy resources and national policy. Report of the Energy Resources Committee to the National Resources Committee. January, 1939. Washington, D.C.: Government Printing Office, 1939. 435 p. illus. 30 cm. Paper, \$1.00. 4769

Contents: Summary: Findings and recommendations. The broader view. Sources of energy. Electric energy. The problem of conservation. Fields of remedy. The function of research in

a conservation program. Public policy toward the coal industry. Public policy toward the oil and gas industry. Undeveloped water power resources and public policy. The national defense. Toward an energy resources policy. Summary of conclusions. Staff studies: Introduction. Part I, The energy resources industries—economic analysis: The coal industry. The petroleum and natural gas industries. Potential water power in the United States. Part II, Energy reserves: Fuel reserves. Water power resources. Substitute fuels and marginal energy resources. Part III, Technology and conservation: Coal mining wastes and their prevention. Phases of technology in the petroleum industry. Conservation in use. Part IV, Evolving public policy: The conservation movement with special reference to the mineral fuels. The Connally Act—background. Experiences of the states in petroleum production-control and conservation measures. Regulatory measures in the coal industry. Toward a Federal power policy.

Note: This publication is a report on the energy resources of the United States with recommendations for their prudent utilization and conservation in relation to each other and to the national economic structure. The National Resources Committee prepared the report in consultation with all other interested Government agencies. It includes supporting papers by specialists from both inside and outside the Government, assembled and summarized by a staff under the direction of Dr. Ralph J. Watkins.

VAN DERSAL, WILLIAM R.

The American land; its history and its uses. New York: Oxford University Press, 1943. 215 p. illus. 24 cm. \$3.75. 4770

Contents: The land in the beginning. The land now. Grains on the land. The mystery and the mastery of corn. Cotton bolls and flaxseed. Sugar from soil. The land's orchards. Berry patch and vineyard. Vegetable gardens on a grand scale. The great family of legumes. Tobacco. Land for livestock. Forests and woodlands. Land for wildlife and recreation. Erosion. The new land pattern. Index.

Note: This book treats for the general reader the uses of land in the United States, with particular emphasis on agriculture and conservation.

VAN HISE, CHARLES RICHARD

Conservation of our natural resources, based on Van Hise's The conservation of natural resources in the United States, by Loomis Havemeyer, editor, and Gar A. Roush, Frederick H. Newell [and others]. New York: The Macmillan Company, 1930. 551 p. illus. 22 cm. \$4.50. 4771

Contents: Introduction, by Loomis Havemeyer. The mineral resources, by Gar A. Roush. Water, by Frederick Haynes Newell. Forests, by Henry Solon Graves. The land, by George Simon Wehrwein. Wild life, by Paul Goodwin Redington and Elmer Higgins. Conservation and mankind, by Loomis Havemeyer. Appendixes. Index.

Note: A revision and enlargement of Van Hise's *Conservation of natural resources in the United States*, New York, 1910, each section of which has been rewritten by a different specialist in the particular field. A considerable portion of the historical data of the original work has been retained and where methods and processes have not altered they have been reprinted verbatim. The most important changes, however, have been in the revision of statistical data on production of raw materials, the construction of new dams and waterways, the newer conservation methods and land policies developed between 1910 and 1930, and new bibliographic references. The work is useful mainly as a reference for students of conservation and conservation authorities.

WILLIAMS, GORDON RYERSON, AND OTHERS

Selected bibliography on erosion and silt movement. Prepared in cooperation with the Research and Statistical Division of the Works Progress Administration for New York City and the Soil Conservation Service, United States Department of Agriculture. Washington, D.C.: Government Printing Office, 1937. 91 p. 22 cm.

(United States. Geological Survey. Water-supply paper 797) Paper, \$0.15. 4772

Contents: Introduction: Administration and supervision. Acknowledgments. Descriptive and historical notes. Bibliography. Alphabetic list of publications. Abstracts. Vocabularies on soil erosion, silt, and related subjects: French-English. German-English. Russian-English. Subject index. Author index.

Note: This bibliography lists mainly material in foreign languages. It covers the foreign (non-American and non-British) literature on erosion and silt movement. Four hundred and fifty-five references are cited in about 150 different periodical and learned-society publications in Bulgarian, Dutch, English, French, German, Italian, Russian, Spanish, and Swedish, dated between 1753 and 1935. English translations are given for all the foreign titles; many of the entries are annotated, and 47 of the items are abstracted in some detail. In selecting entries the compilers chose material that would be useful not only to the scientist, the engineer, and the agronomist, but also to those concerned with public dissemination of information concerning erosion and silt movement.

Drainage and Irrigation

AYRES, QUINCY CLAUDE, AND DANIELS SCOATES

Land drainage and reclamation. Second edition. New York: McGraw-Hill Book Company, Inc., 1939. 496 p. illus. 23 cm. (McGraw-Hill publications in agricultural engineering, Daniels Scoates, consulting editor) \$4.00. 4773

Contents: Introduction. Measuring distances. Surveying with steel tape. Levels and level rods. Leveling. Adjusting levels. Lines and angles. Topographical surveying. Computing areas. Land surveying. Drainage properties of soils. Rainfall and runoff. Open-ditch design. Open-ditch location and construction. Open-ditch maintenance. Earth dams and levees. Drainage districts. Useful principles of law. Explosives and their use. Land clearing. Control of soil erosion. Terracing. Control of gullies. Subsurface drainage. Location of tile drains. Design of tile drains. Selection of tile. Installation of tile. Drain-tile accessories. Estimating cost of tile drainage. Special methods of drainage.

Note: This text deals with the problems of drainage, reclamation, and surveying that arise on the average farm and which the farmer himself can be expected to handle. The major change in this edition lies in the rewriting of the chapter on control of erosion and its expansion into three new chapters covering terracing and control of gullies.

BELL, HUGH STEVENS

Stratified flow in reservoirs and its use in prevention of silting. Washington, D.C.: Government Printing Office, 1942. 46 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 491) \$0.10. 4774

Contents: Introduction. What density currents are. Some density-current history. Stratified flows manifest themselves in many ways. The behavior of stratified flows. Some factors governing the withdrawal of layers. Some possible applications of stratified flow. The quantity of sediment carried by underflows. Density currents can prolong life of reservoirs. Conclusion.

Note: This publication presents new conceptions and new methods for protecting large reservoirs. It is intended for engineers, agronomists, and others concerned with the problem of sediment reducing the capacity of reservoirs.

BROWN, CARL BARRIER

The control of reservoir silting. Washington, D.C.: Government Printing Office, 1943. 166 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 521) Paper, \$0.25. 4775

Contents: Foreword, by Hugh H. Bennett, Chief, Soil Conservation Service. Introduction: Our reservoir developments. The problem of silting. Previous investigations. Studies by the Soil Conservation Service. Effects of silting on different types of

reservoirs. The magnitude of siltage damage. Methods of silting control: Selection of the reservoir site. Design of the reservoir. Control of sediment inflow. Control of sediment deposition. Removal of sediment deposits. Sluicing with hydraulic and mechanical agitation. Watershed erosion control. Planning for watershed control—an appraisal. Literature cited.

Note: This publication was prepared in response to numerous requests from those concerned with water-supply, irrigation, and power production for information on methods of controlling or reducing excessive silting in impounding reservoirs. All of the known methods of silting control as described in the literature of the subject have been analyzed and classified into six major categories. These groups are further subdivided into specific methods of control. Each method is briefly described. A few selected examples are given of the application, cost, and results obtained. The appraisal at the end of each method represents a generalization of the usefulness and applicability of the method. One hundred thirty-eight pieces of literature are cited.

EAKIN, HENRY MINER

Silting of reservoirs. Revised by Carl B. Brown. Washington, D.C.: Government Printing Office, 1939. 168 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 524. Issued July, 1936, revised August, 1939) \$1.00. 4776

Contents: Introduction: The project. Economic aspects of the problem. Physical aspects of the problem. Processes of reservoir silting. Previous investigations: Basin reservoirs. Channel and other reservoirs of small capacity—inflow ratio. Reservoir surveys by the Soil Conservation Service in 1934-36: Field work. Methods of survey. Surveys in southeastern United States. Surveys in south-central United States. Surveys in southwestern United States. General summary of results of the 1934-38 surveys. Reservoir reconnaissance investigations, 1934-37: Sediment measurements in other southeastern reservoirs. Completely filled Piedmont reservoirs. Silting of southern Appalachian Mountain reservoirs. Sediment measurements in other south-central reservoirs. Sediment measurements in reservoirs of the Pacific Southwest. Summary. Literature cited. Appendix: Instructions for reservoir sedimentation surveys.

Note: This bulletin is a progress report on reservoir surveys and investigations by the Soil Conservation Service in 1934-36 with notes on previous investigations of reservoir silting made by other agencies. The revised edition brings up to date information on reservoirs described in the first edition and is 27 pages longer. The bulletin is illustrated with 16 photographic plates, 23 tables, and 29 figures including 12 folding maps and a folding chart. The purpose of the surveys was a nation-wide investigation of the condition of American reservoirs with respect to reduction of storage by silting. The ultimate objectives of the studies reported in the bulletin were the accumulation of information on the factors involved in the silting of reservoirs, including rates of silting, and the correlation of the results with soil, slope, and climatic conditions and land use in watershed areas.

ETCHEVERRY, BERNARD ALFRED, AND S. T. HARDING

Irrigation practice and engineering: Volume 1, Use of irrigation water and irrigation practice. Second edition. New York: McGraw-Hill Book Company, Inc., 1933. 256 p. illus. 23 cm. \$2.50. 4777

Contents: Definitions and conditions affecting irrigation. Physical properties of soils. Disposal of irrigation water applied to the soil. Water requirements of irrigated crops. General water requirements. Preparation of land for irrigation and methods of application. Farm distribution systems. The selection and cost of small pumping plants. Index.

Note: This volume is the first of a three-volume series covering irrigation practice and engineering. Volumes II and III, which cover the engineering features of irrigation systems, are available from the same publisher in the first editions dated 1915 and 1916 respectively. The present book is limited almost wholly to irrigation practice in the United States, and includes new material regarding soil-moisture properties based on experimental work between the years 1915 and 1933, as well as new data on farm structures, the use of water on farms, types of equipment used in pumping, and new applications of irrigation to farm development. Results of individual experiments or local

practice have been used to illustrate the principles or practice without attempting to describe the conditions and practices of all localities. The treatment of irrigation practice is limited to the handling and use of water on the farm.

ETCHEVERRY, BERNARD ALFRED

Land drainage and flood protection. Stanford University: Stanford University Press, 1940. 327 p. illus. 22 cm. \$3.00. 4778

Contents: Introduction. Soil formation. Soil texture. Soil water. Harmful effects of lack of drainage. Effects of drainage. Natural drainage and required depth of drainage. Volume of drainage water. General operations for the drainage of large areas and drainage by open channels. Underdrainage. Special case of drainage problems. Properties of drain tile. Construction and maintenance of tile drains. Drainage of water-logged irrigated lands. Protection of lands from flood waters. Problems in the computation of flow in river channels. Reclamation of tidal lands. Drainage and reclamation districts. Index.

Note: This work deals with the surface drainage and underdrainage of agricultural lands affected by excessive water due to precipitation or irrigation; the protection of lands against flood and tide waters; and the methods of spreading assessments for the apportionment of the cost of the several classes of improvements to the areas benefited. It emphasizes fundamental theories and principles of design. Though intended primarily as a textbook for a college course in drainage, it has been planned to be useful to engineers interested in land drainage and the protection of overflow lands, also to trustees, directors, and other officials of reclamation and drainage districts, and to commissioners of assessment.

ISRAELSEN, ORSON WINSO

Irrigation principles and practices. New York: John Wiley & Sons, Inc., 1932. 422 p. illus. 23 cm. (Wiley agricultural engineering series) \$5.00. 4779

Contents: Introduction. Sources and conveyance of irrigation water. Measurement of irrigation water. Pumping water for irrigation. Irrigation methods. Farm irrigation implements and structures. Some properties of soils. Basic soil and water relations. Storage of water in soils. The movement of water in soils. Irrigation and alkali. Transpiration and evaporation. Time of irrigation. Consumptive use of water in irrigation. Relation of crop yield to water consumed. Social and administrative aspects of irrigation. Amounts of water used in irrigation. Efficiency and economy in irrigation. Irrigation of cereals. Irrigation of forage crops. Irrigation of sugar beets and potatoes. Irrigation of orchards. Irrigation in humid climates. The problems of irrigation.

Note: A description of modern irrigation methods and practices. The book discusses the principles of agriculture under irrigation; the conveyance and use of irrigation water; the properties of soils and the behavior of water in them; the efficient application of irrigation to various crops.

MITCHELSON, ALBERT THOMAS, AND DEAN C. MUCKEL

Spreading water for storage underground. Washington, D.C.: Government Printing Office, 1937. 80 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 578) \$0.20. 4780

Contents: Introduction: Sources of water supply. Diversion and storage of water supply. Spreading water for storage underground. Structure of debris fans. Selection of spreading areas. Methods of spreading. Ground-water conditions in southern California. Spreading systems in California. Natural spreading in river beds. Experimental work. Conclusions.

Note: This bulletin contains descriptions of engineering methods for spreading water for storage underground for irrigational purposes. Sixteen places in California where these methods are in use are described. The last 18 pages of the pamphlet give the results of certain experiments carried on between 1930 and 1937 to determine the best or most efficient method of spreading, the percolation rates obtained, the factors affecting the rates of percolation, and other problems encountered in the process of spreading. Aside from other illustrations, the publication contains 22 photographic plates.

PICKELS, GEORGE WELLINGTON

Drainage and flood-control engineering. Second edition. New York: McGraw-Hill Book Company, Inc., 1941. 476 p. illus. 23 cm. \$4.00. 4781

Contents: Introduction. Precipitation. Flood run-off. Stream discharge measurements. Flow of water in open channels. Flow of water in tile drains. Land drainage by open channels. Soil physics. Underdrainage. Pumping plants for drainage districts. Flood protection by channel improvement. Flood protection by levees. Flood protection by reservoirs. Drainage law. Index.

Note: Intended primarily as a textbook for college courses in land reclamation by drainage, this book treats of the improvement of small areas of cultivable land by underdrainage and also of the reclamation of large areas of wet and overflow lands by surface drainage and by flood control. The sciences of hydrology, hydraulics, and soil physics are discussed from the specialized viewpoint of the drainage and flood-control engineer. The second edition covers the improvement in drainage and flood control methods from 1925 to 1941, and includes new rainfall tables. The chapter on excavating machinery has been omitted in this edition.

POWERS, WILBUR LOUIS, AND T. A. H. TEETER

Land drainage. Second edition, revised and enlarged. New York: John Wiley & Sons, Inc., 1932. 353 p. illus. 21 cm. (The Wiley agricultural engineering series) \$3.25. 4782

Contents: Field drainage, development, importance and future of drainage. Benefits of drainage. Relation of soil to drainage. Relation of soil water to drainage. Types of drains and their location. Materials for covered drains. Depth and frequency of tiles. Measurement of drainage-water. Size and grade for tiles. Construction of underdrains. Costs and profits for tile-drainage. Development of wet land. Drainage districts and drainage laws. Assessment of drainage benefits and costs. Large tiles vs. open ditches. Design, construction and maintenance of open ditches. Flood control. Estimates of costs of large drainage systems. Special drainage problems, the drainage of tidal and overflowed marsh lands. The drainage of irrigated lands. Drainage by means of pumping from wells. Prevention and control of erosion, with special reference to terracing. Miscellaneous drainage problems. Drainage surveying, drainage surveying and practice. Appendix: Farm drainage laboratory exercises. Tables for use in Kutter's formula. U.S. census of drainage—1930.

Note: Devoted to discussion of drainage problems in the United States, and a thorough treatment of the methods necessary to solve those problems. Well drainage in an irrigated region is covered in this second edition, and a new chapter has been added on erosion. At the end of each chapter there is a series of questions covering the subject dealt with; a reference bibliography is included.

ROHWER, CARL

Design and operation of small irrigation pumping plants. Washington, D.C.: Government Printing Office, 1943. 78 p. illus. 23 cm. (United States. Department of Agriculture. Circular no. 678) \$0.15. 4783

Contents: Introduction. Water requirements of area to be irrigated. Capacity of well or surface water supply. Fitting equipment to conditions: Pumps. Motive power. Drives. Piping and auxiliary equipment. Bids and purchase agreements. Testing pumps, engines, and motors. Cost of pumping for irrigation. Summary. Literature cited.

Note: This circular presents the principles of pumping-plant design and operation. Its purpose is to help owners and operators of such pumps to keep them in service at high efficiency by proper replacements or repairs. The information which it contains is based upon observations of pumping plants, interviews with operators of small irrigation pumping plants in seven western states, and on data compiled from publications of state agricultural experiment stations and equipment manufacturing companies.

SCOBAY, FREDERICK CHARLES

The flow of water in irrigation and similar canals. Washington, D.C.: Government Printing

Office, 1939. 79 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 652) \$0.20. 4784

Contents (abridged): Introduction. Notation and nomenclature. Capacity formulas and attendant empirical data. Scope of experiments. Equipment and methods employed for collecting field data. Normal flow and departures therefrom. Elements of field tests to determine roughness coefficients. Description of canals. Practical uses of the experimental data. Regional characteristics influencing canal capacity. Hydraulic roughness. Channel surface roughness. Estimate diagram. Conclusions. Literature cited.

Note: This bulletin treats of flowing water in irrigation and similar canals. It is based on field tests made over a period of years to determine the retardation factors in several formulas applicable to the various conditions found in practice. It is offered for use by engineers in designing, measuring, and operating irrigation, power, municipal, and similar canals, and for courts and attorneys at law interested in cases involving the carrying capacities of open artificial canals. The bulletin contains 24 plates containing photographs of various kinds and aspects of such canals.

UNITED STATES. DEPARTMENT OF THE INTERIOR. BUREAU OF RECLAMATION

Measurement of irrigation water. Fifth edition. Washington, D.C.: Government Printing Office, 1940. 51 p. illus. 17 cm. Paper, \$0.50. 4785

Contents: Introductory statement. Weirs. Submerged orifices. Current meter gaging stations. Parshall flumes. Tables.

Note: The text of this pamphlet contains definitions and formulas needed in the measurement of irrigation water. Ten tables of computation figures occupy the latter half of the pamphlet.

Farm Buildings

CARTER, DEANE G., AND W. A. FOSTER

Farm buildings. Third edition, rewritten. New York: John Wiley & Sons, Inc., 1941. 404 p. illus. 23 cm. (Wiley agricultural engineering series, edited by J. B. Davidson) \$3.75. 4786

Contents: Introduction. Economics and costs of farm buildings. Building materials; lumber and logs. Concrete; other masonry. Miscellaneous building materials. Structural requirements. The structure of farm buildings. Cost and quantity calculation. Arrangement and location of farm buildings. Environmental conditions in farm buildings. Farm barns; general purpose barns. Dairy barns. Special purpose barns. Poultry housing. Swine housing. Silos. Grain and hay storage. Storage and service buildings. Farm housing conditions and needs. Farmhouse planning. Kitchens and storage equipment. House construction; general problems. Specifications; details of house construction. House remodeling. Appendices. Index.

Note: A compact, introductory treatment of the subject, of interest to the layman as well as to the architect. Emphasis is given to the information most directly applicable to farm building problems, the principles of planning and design and the adaptations necessary to meet the varied conditions that exist. In planning, the principle of basic or unit arrangement has been followed to enable the designer to fit plans to various needs. The third edition is a completely revised book. It places stress on the economic aspects of farm buildings, on analysis of rural housing problems, and on the basic or unit planning.

WOOLEY, JOHN COCHRAN

Farm buildings. New York: McGraw-Hill Book Company, Inc., 1941. 345 p. illus. 23 cm. (McGraw-Hill publications in agricultural engineering; Q. C. Ayres, consulting editor) \$3.00. 4787

Contents (abridged): General: The development of farm buildings in America. The contribution of buildings to the business of farming. Building materials: Wood. Concrete. Clay products. Cobblestone. Rammed earth, stabilized earth, and logs. Struc-

tural design: Barn frames. Design of beams and columns. Roof framing. Air conditioning farm buildings: Heat—its measurement and transmission. Heat and moisture relationships. Ventilation. Livestock and poultry buildings: Planning buildings for the dairy enterprise. Buildings for the poultry enterprise. Buildings for the hog enterprise. Beef cattle, sheep, and horse barns. Buildings for storage: Farm machinery storage buildings. Hay and grain storage buildings. The silo. Apple and potato storage. Care, repair, and remodeling. Appraisal. Locating and planning the farmstead. Fences and gates. The farm home. Drafting.

Note: A discussion of the problems involved in designing farm buildings that will be efficient and economical and homes that will furnish enjoyable and healthful places in which to live. Special attention is given to the environment needed in different kinds of buildings, and to methods of maintaining such environment under practical conditions.

Farm Machinery

COOK, GLEN CHARLES, AND OTHERS

Farm mechanics text and handbook, by G. C. Cook, L. L. Scranton and H. F. McColly. Revised and enlarged edition. Danville, Ill.: The Interstate Printers and Publishers, 1939. 558 p. illus. 23 cm. \$2.50. 4788

Contents: Introduction. Woodwork. Painting, finishing, glazing. Rope work. Belt work. Harness work. Concrete. Sheet metal work. Farm forge work. Farm home conveniences and sanitation. Farm motors. Farm machinery. Rural electrification. Appendix. Index.

Note: A textbook for students of vocational agriculture, emphasizing the selection and purchase of suitable farm equipment and supplies and the performance of appropriate farm-mechanics activities. Guiding principles are outlined, useful information and facts presented, and plans for the development of necessary skills are suggested. Each project in repair or construction is fully outlined in step-by-step procedure, illustrated with drawings or photographs, and accompanied by references to books and publications for further study. The revised edition contains new material on rural electrification and minor details of tool handling.

DAVIDSON, JAY BROWNLEE

Agricultural machinery. New York: John Wiley & Sons, Inc., 1931. 396 p. illus. 24 cm. (Wiley agricultural engineering series) \$3.50. 4789

Contents: The relation of agricultural machinery to agricultural progress. The function of machines and some mechanical principles. The elements of machines. Materials used in the construction of agricultural machines. The design of agricultural machines. Transmission of power. Measurement of power. Friction and lubrication. Tillage, plows. Plow operation and adjustment. Harrows, rollers and pulverizers. Cultivators. Seeding machines. Corn and cotton planters. Grain harvesting machines. Threshing machines. Combined harvesting and threshing machines. Corn harvesting machines. Mowers. Machines for making and handling hay. Special machines for growing and processing cotton. Special machines for growing potatoes. Index.

Note: This book is designed to meet the needs of those who expect to use and manage agricultural machinery. Certain phases of mechanics, mechanics of materials, materials used in the construction of machines, and the elements of machine design are presented in a clear and practical manner. The more important agricultural machines in general use in the United States are discussed. Photographs and drawings are used liberally.

JASNY, NAUM

Research methods on farm use of tractors. New York: Columbia University Press, 1938. 273 p. illus. 22 cm. (Columbia University studies in the history of American agriculture. No. 5) \$3.75. 4790

Contents: Editor's foreword. Types of tractors. Size of tractors. Grouping of farms according to the type of power. Methods of computing the cost of operating tractors. The procedures fol-

lowed in power investigations. The basis for comparison of the costs of farm power. Adjustments of the cost of power. The effect of farm size on the cost of power. Selecting the area. Summary. Appendixes: Rated and adjusted horsepower of tractors. The recommended method of computing the rate for depreciation of tractors, with comparisons. Some details of the application of the recommended method of computing the charge to depreciation. Derivation of depreciation formulae. Bibliography. Index.

Note: A summary of recent scientific studies concerning the tractor as a labor- and power-saving device. These studies are critically considered by the author, with notes of their strength and weaknesses. He also develops some standards for determining the usefulness of farm tractors in the United States.

JONES, MACK MARQUIS

Farm shop practice. New York: McGraw-Hill Book Company, Inc., 1939. 315 p. illus. 23 cm. (McGraw-Hill publications in agricultural engineering, Daniels Scoates, consulting editor) \$2.75. 4791

Contents (abridged): Part I, Farm woodwork and carpentry: Measuring and marking. Sawing. Planing and smoothing. Wood chisels and their use. Painting, finishing, glazing. Cutting common rafters. Part II, Tool sharpening and fitting: Grinding and sharpening equipment. Part III, Cold-metal work: Drilling tools and their use. Bolt-threading equipment and its use. Part IV, Pipework on the farm. Part V, Soldering and sheet-metal work. Part VI, Farm blacksmithing: Fundamental forging operations. Welding, plow sharpening; kinds of iron and steel. Part VII, Farm concrete work. Part VIII, Harness, belt, and rope work: Harness repair; belting; belt lacing. Rope work. Index.

Note: In this book the author deals simply and concisely with tools and basic tool processes used in the farm shop. Emphasis is placed upon a direct, realistic presentation of the fundamental principles of tools and their use. The author has written to be used with this work *Manual of farm shop practice*, New York: McGraw-Hill Book Company, Inc., 1940, 92 p., \$0.75.

MORRISON, IVAN GREGG

Repairing farm machinery. Danville, Ill.: The Interstate Printers and Publishers, 1940. 181 p. illus. 21 cm. \$1.80. 4792

Contents (abridged): Repairing the mower. Repairing the grain binder. Repairing the walking plow. Repairing and adjusting wheeled plows. Repairing the disk harrow. The spike tooth harrow. The spring tooth harrow. Repairing the cultivator. The corn planter. The grain drill. Repairing the side delivery rake. The corn binder. Painting farm machinery.

Note: A training manual for use in farm shop work courses in rural high schools or schools of vocational agriculture. The material is arranged in the form of job units, with step-by-step directions, illustrations of method, and related questions.

ROEHL, LOUIS MICHAEL

The farmer's shop book. Seventh edition, enlarged and revised. Milwaukee: The Bruce Publishing Company, 1942. 441 p. illus. 23 cm. \$2.48. 4793

Contents: Grinding the farm tools. Fitting saws. Carpentry and woodworking. The farm workshop. Community workshop. Shop and classroom for department of vocational agriculture. Painting, repairing, and refinishing furniture. Rope work. Harness repairing and belt lacing. Fitting farm-tool handles. Equipment and soldering. Working cold metal. Forging. Electricity for the farm and home. Appendix. Index.

Note: Intended for instruction and practical use by the farmer in his home workshop as well as for vocational instruction in schools. The material in this edition, the seventh, has been extensively revised to treat of new tools and appliances, and the number of illustrations has been considerably increased.

ROEHL, LOUIS MICHAEL

Fitting farm tools. Third edition—revised. Milwaukee: The Bruce Publishing Company, 1940. 120 p. illus. 23 cm. \$1.00. 4794

Contents: Grinding the farm tools. Small saws. Large saws. Farm-tool saws. Fitting miscellaneous tools. Index.

Note: A practical and well-illustrated manual for farmers and agricultural students. Directions for the sharpening of saws, grinding of farm tools, and fitting of handles to farm tools are given.

SCHAENZER, JOSEPH PETER

Rural electrification. Revised edition. New York: The Bruce Publishing Company, 1940. 266 p. illus. 23 cm. \$1.96. 4795

Contents: Electricity, the silent partner. How electricity is made and distributed. Serving the farm customer. Wiring materials. Wiring maintenance and repair. Wiring the farmstead. Wiring the home. Wiring the barn and outbuildings. Lights and lighting. Farm electric lighting plants. Electric motors. Fractional-horsepower motor applications. Ensilage cutters. Feed grinders. Wood sawing. Hay hoisting and bailing. Farm water supply. Poultry-house lighting. The electric incubator and brooder. The milking machine and cream separator. Dairy refrigeration. Other electrical equipment for the dairy. The electrical hotbed. Laundry and cleaning equipment. Kitchen and household equipment. Index.

Note: While primarily for use in vocational agricultural high schools, this book is also designed for study in state colleges of agriculture and for practical use by farmers. Practical problems are outlined and suggested readings are given. Listing of equipment needed and illustrations of equipment in use are helpful.

SMITH, HARRIS PEARSON

Farm machinery and equipment. Second edition. New York: McGraw-Hill Book Company, Inc., 1937. 460 p. illus. 23 cm. (McGraw-Hill publications in agricultural engineering. Daniel Scoates, consulting editor) \$3.25. 4796

Contents (abridged): Importance of farm machinery to agriculture. Principles of farm machinery. Soil preparation machinery. Seed-bed preparation machinery. Cultivating machinery. Dusting and spraying machinery. Harvesting machinery. Seed preparation machinery. Feed preparation machinery. Fertilizing machinery. Transportation equipment. Cleaning and grading machinery. Soil-and-water conservation machinery. Index.

Note: A comprehensive text for use in farm machinery classes and for use as an aid to farm equipment salesmen and dealers, agricultural extension workers, farmers, and others interested in the introduction and use of labor-saving equipment for the farm. The book covers the more important types of machines used in general farming, in the logical sequence in which they are applied to farm work. Several chapters have been added to the second edition covering new farm machinery and its relation to agriculture, dusting and spraying equipment, and terracing machinery. New illustrations show the latest equipment as of 1937.

STONE, ARCHIE AUGUSTUS

Farm machinery. Third edition. New York: John Wiley & Sons, Inc., 1942. 524 p. illus. 21 cm. (The Wiley farm series, edited by A. K. Getman and C. E. Ladd) \$3.25. 4797

Contents: Plows. Harrows. Grain-seeding machines. Row-crop seeders and planters. Cultivators. Mowers. Grain binders. Fertilizer-distributing implements. Threshers and combines. Potato planters and diggers. Tractors. Tractor engines. Carburetion system. Ignition system. Cooling systems. Transmission systems. Front axle, front wheels, and steering gear. Operation and maintenance. Index.

Note: Certain basic farm implements—their types and sizes, principal parts and mechanical construction—are considered, with specific directions for their repair and operation. There is considerable material on the care and maintenance of farm tractors. The emphasis is on practical repair procedures. The third edition offers a special chapter on planters and seeders for row crops; additional material on farm tractors; an improved collection of practical "shop jobs."

STONE, ARCHIE AUGUSTUS

Farm tractors. New York: John Wiley & Sons, Inc., 1932. 492 p. illus. 21 cm. (The Wiley farm

series, edited by A. K. Getman and C. E. Ladd) \$3.75. 4798

Contents: Part I, Construction: Development of farm tractors. The tractor factory. Tractor engines. Fuel systems and carburetors. Magnetos and ignition. Cooling systems. Lubrication. Clutches. Transmission of power. Front axle, front wheels and steering gear. Part II, Operation: Operating jobs and adjustments. Operating troubles. Loading the tractor. Belt work. Special equipment. Part III, Repairing: Repairs and supplies—repairing engine shafts and bearings. Repairing cylinders, pistons and wrist-pins. Valve timing, repairing valves, replacing gaskets. Repair of transmission system. Clutch repair, repair of front wheels, front axles, and steering gear. Index.

Note: A comprehensive presentation of factors involved in the construction, operation, and repairing of various types of tractors. More than one hundred pages cover the various repair jobs, such as valve timing, reconditioning cylinders, pistons and wrist-pins, grinding valves, repairing transmissions, clutches, adjusting and replacing bearings, and other repair work. This section not only diagnoses tractor troubles, but prescribes the remedy for each ailment and illustrates the proper procedure to be followed.

Agricultural Chemistry

ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS

Official and tentative methods of analysis of the Association of Official Agricultural Chemists; editorial board, W. W. Skinner, chairman; Committee on Editing Methods of Analysis: E. M. Bailey (chairman), L. E. Warren, J. W. Sale [and others]. Fifth edition, 1940. Washington, D.C.: Association of Official Agricultural Chemists, 1940. 757 p. illus. 24 cm. \$5.00. 4799

Contents (abridged): Soils. Fertilizers. Agricultural liming materials. Insecticides and fungicides. Caustic poisons. Naval stores. Paints, varnishes, and constituent materials. Leathers. Tanning materials. Plants. Beverages (non-alcoholic) and concentrates. Malt beverages. Wines. Distilled liquors. Baking powders and chemicals. Coffee and tea. Cacao bean. Cereal foods. Coloring matters. Dairy products. Eggs. Fish and other marine products. Flavoring extracts. Fruits and fruit products. Grain and stock feeds. Meat. Metals in foods. Nuts. Oils, fats, and waxes. Preservatives and artificial sweeteners. Spices and other condiments. Sugars and sugar products. Vitamins. Waters, brine and salt. Radioactivity. Drugs. Microbiological methods. Microchemical methods. Standard solutions. Tables. Appendix. General index.

Note: This handbook is intended for the working chemist and presents in summary form the analytic methods used in agricultural chemistry for qualitative and quantitative determination of the composition of food and food products, drugs, preservatives, leathers, fertilizers, and other substances. Methods are designated as official or tentative and most of the tests are documented with references to the publication in which the test was first described. There are numerous reference tables giving such pertinent information as strength solutions of common acids and alkalis, temperature corrections to readings of saccharimeters, sucrose determination tables, percentage of alcohol by volume, calculation of dextrose, levulose, radium emanation, and other data. This edition has been revised and is considerably expanded over the fourth edition.

BROWNE, CHARLES ALBERT

A source book of agricultural chemistry. Wal-tham, Mass.: The Chronica Botanica Company, 1944. 290 p. illus. 26 cm. (Chronica botanica. Vol. 8, no. 1, Spring, 1944) Paper, \$5.00. 4800

Contents: Agricultural chemistry in ancient times: Theories. Early Greek nature philosophers. Democritus. Aristotle. Experimental science in the later Greek epoch. Practices. Caius Plinius Secundus. Relations of medicine and pharmacy to agricultural chemistry. Dioscorides. Agricultural chemistry in the alchemical and iatrochemical periods: Paracelsus. Palissy. Duchesne. Bacon. Sala. Van Helmont. Glauber. Plattes. Agricultural chem-

istry in the time of the early Royal Society: Boyle, Redi, Hooke, Mayow, Grew, Winthrop, the younger, Clayton, Woodward, Hales, Tull. Agricultural chemistry in the early phlogiston period: Becher, Stahl, Boerhaave, Réaumur, Duhamel, Marggraf, Home, Wallerius. Agricultural chemistry in the late phlogiston period: Black, Priestley, Ingen-Housz, Senebier, Cavendish, Scheele. Agricultural chemistry during the chemical revolution: Lavoisier, Thaer and Einhof, Chaptal, Hermbstaedt, De Saussure, Davy, De Candolle. Agricultural chemistry at the beginning of the modern period: Wiegmann, Schuebler, Sprengel, Bous-singault, Mulder, Liebig, Indexes, Addendum.

Note: A history of developments in the application of chemistry to the theory and practice of agriculture from the time of Democritus to the period of Liebig. The book gives a chronological account of attempts to apply chemical principles to the interpretation of the phenomena of plant and animal life in some of their relations to agriculture. Brief accounts are included of the lives, researches, and publications of 50 different investigators with special stress upon the influences they exercised on subsequent developments. There are numerous quoted excerpts from the original writings and 32 illustrations of title pages and drawings from classic publications.

DUTCHER, RAYMOND ADAMS, AND DENNIS E. HALEY

Introduction to agricultural biochemistry. New York: John Wiley & Sons, Inc., 1932. 484 p. illus. 24 cm. \$4.50. 4801

Contents (abridged): The development of agricultural chemistry. Chemistry of living matter. The carbohydrates. The fats and related compounds. The proteins. The physical state of matter. Enzymes. Seed germination. The soil. Soil acidity. Farm manure. Fertilizers. The atmosphere. Insecticides, fungicides, and related materials. Absorption of mineral nutrients by plants. The plant carbohydrates. The plant lipids. The vegetable proteins and related compounds. Respiration. Foods and feeding stuffs. Digestion of foods. The body tissues. Metabolic changes in tissue. Energy metabolism. Biological response to foods. Protein quality. Vitamin A. Vitamin B complex. Vitamin C. Vitamin D and ultraviolet light. Vitamin E. Index.

Note: A textbook designed for agricultural college students who have a knowledge of basic inorganic and organic chemistry. References for general reading are provided at the end of most chapters.

HALE, WILLIAM J.

Farmward march; chemurgy takes command. New York: Coward-McCann, Inc., 1939. 222 p. 19 cm. \$2.00. 4802

Contents: The chemical age. Progress and poverty. Birth of chemurgy. Where there is by-product there is hope. Nature and her three musketeers. The exploits of Aramis. The exploits of Athos. The exploits of Porthos. Resistance to advance. Agricide alcohol supreme. The writing in the sky. Farm and factory in balance. Economic soothsayers. Passing of international trade. National self-sufficiency. National security.

Note: The author, who organized the Organic Chemical Research Division of the Dow Chemical Company, presents a possible solution of the farm problem through the three great classes of farm produce destined for industry: cellulose, vegetable oil, ethyl alcohol. This is the field of chemurgy.

HEDGES, CHARLES CLEVELAND, AND H. R. BRAYTON

The application of chemistry to agriculture. New York: D. Appleton-Century Company, Incorporated, 1938. 238 p. illus. 20 cm. (The Century chemistry series; J. Kendall, editor) \$2.50. 4803

Note: This concise presentation of the principal topics of the chemistry of agriculture is intended to show the relationship between water, seeds and their germination, plants, the atmosphere, soils, fertilizers, insecticides, and fungicides. It includes a summary of the general principles of organic chemistry and an adequate discussion of animal nutrition. It is intended for a one-semester course for students who have completed a year's course in general chemistry or its equivalent.

JACOBS, PAUL BURKE, AND HARRY P. NEWTON
Motor fuels from farm products. Washington, D.C.: Government Printing Office, 1938. 129 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 327) \$0.15. 4804

Contents: Introduction. Agricultural aspects: Crop distribution. Crop production. Crop classification. Crops in terms of alcohol. Location of raw materials. Cost of raising farm crops. Cost of collecting and transporting farm crops. Alcohol and the agricultural-crop situation. Technical aspects: Production of industrial alcohol. Production of motor-fuel alcohol. Ethyl alcohol as a motor fuel. Economic aspects: Raw materials other than agricultural products. Use of blended motor fuels abroad. Alcohol motor fuel experiments in the United States. Gasoline consumption on the farm. Alcohol plants on the farm. Sale and distribution of alcohol motor fuel. Conclusions. Summary. Literature cited.

Note: This publication presents statistics and other information on the annual production and geographic distribution of various farm crops suitable as raw material for use in motor-fuel blends and discusses the manufacture and use of replacement fuels in the United States and abroad.

WILSON, PERRY WILLIAM

The biochemistry of symbiotic nitrogen fixation. Madison: The University of Wisconsin Press, 1940. 302 p. illus. 23 cm. \$3.50. 4805

Contents: The nitrogen economy of man and nature. Leguminous plants in agricultural history. The biochemistry of the bacteria. The interaction of host and bacteria. Fixation of nitrogen by bacteria and plant. The carbohydrate-nitrogen relationship. Excretion of nitrogenous compounds by legumes. Chemical mechanism of the fixation process. Physical-chemical characteristics of the enzyme system. Some practical applications.

Note: The opening chapters deal with the role of nitrogen in the economy of man and nature, and the nineteenth-century experiments that provided the first insight into the biochemistry of leguminous plants and root nodule bacteria. In connection with the modern studies the following aspects of the problem are considered: the growth factors for the organism, the physiology of the bacteria, the biochemistry and cytology of nodule formation, the fixation of nitrogen by plant and bacteria in isolation, the importance of strain of bacteria and species of host plant in the fixation reaction of the host plant, and the excretion of nitrogenous compounds by legumes. The book is for biochemists, plant physiologists, agronomists, and soil scientists.

Economic Botany

AMES, OAKES

Economic annuals and human cultures. Cambridge, Mass.: Botanical Museum of Harvard University, 1939. 153 p. illus. 29 cm. Paper, \$4.00. 4805a

Contents: Preface. The significance of the angiosperm seed. Antiquity of economic plants. Economic plants through the Pleistocene. The more important economic annuals. Plants as measures of cultural time. Index. Errata.

Note: The author develops the theory that "man, evolving with his food plants, developed horticulture and agriculture in both hemispheres at a time which may well have reached far back into the Pleistocene." Tables on the descent of flowering plants and herbaceous annuals based on geologic records and economic annuals through the Pleistocene are included. The bulk of the book consists of the section devoted to the more important economic annuals. For these annuals the Linnaean identification, detailed history of economic use, and diagrammatic illustrations are given.

CLUTE, WILLARD NELSON

The useful plants of the world. Third edition. Indianapolis, Ind.: Willard N. Clute & Co., 1943. 219 p. 21 cm. \$3.75. 4806

Contents: Preface. Origin of the useful plants. Distribution of our food plants. The variety of food plants. List of food plants. Condiments and perfumes. List of condiments and perfumes. Beverages and masticatories. List of beverage plants. Masticatories. Textiles. List of fiber plants. Dyes, soaps and tannins. List of dyes, soaps and tannins. Gums, resins and rubbers. List of gums, resins and rubbers. Oils and fats. List of fatty oils and waxes. Drug plants. List of drug plants. Wood and wood products.

Note: Following a brief discussion of the various types of plants, grouped according to their uses, the different species are listed with their common, technical, and family names and such other information as may be of interest to the general reader. No attempt is made to discuss the geography, range, abundance, or commercial value of the various species. In this third edition, the author has added the names of some secondary species, mostly food plants, which are seldom seen in markets, but which may be utilized in times of scarcity.

HAYWARD, HERMAN ELIOT, AND E. M. LONG

The anatomy of the seedling and roots of the Valencia orange. Washington, D.C.: Government Printing Office, 1942. 32 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 786) \$0.10. 4807

Contents: Introduction. Materials and methods. Polyembryony. The embryo. Ontogeny of the primary root. The epidermis. The cortex. The stele. Lateral root formation. Secondary thickening of the root. The vascular transition. The first internode. The first foliage leaves. Summary. Literature cited.

Note: Prepared to serve as a basis for studies being made to determine the effect of salts on the growth and development of the Valencia orange seedling.

HAYWARD, HERMAN ELIOT

The structure of economic plants. New York: The Macmillan Company, 1938. 674 p. illus. 24 cm. \$4.90. 4808

Contents: Part I, General anatomy: Cells and tissues and their development. The anatomy of the root. The anatomy of the shoot. The anatomy of the flower and fruit. Part II, Economic plants: Gramineae, *Zea* (corn). *Triticum* (wheat). Liliaceae. *Allium* (onion). Moraceae. *Cannabis* (hemp). Chenopodiaceae. *Beta* (beet). Cruciferae. *Raphanus* (radish). Leguminosae. *Medicago* (alfalfa). *Pisum* (pea). Linaceae. *Linum* (flax). Malvaceae. *Gossypium* (cotton). Umbelliferae. *Apium* (celery). Convolvulaceae. *Ipomoea* (sweet potato). Solanaceae. *Solanum* (white potato). *Lycopersicum* (tomato). Cucurbitaceae. *Cucurbita* (squash). Compositae. *Lactuca* (lettuce). Glossary. Index.

Note: This survey of plant anatomy is based on courses given at the University of Chicago and is designed for the advanced student. It brings together much material previously scattered. Important fruit crops were omitted because a second volume, to include fruits, was contemplated. Contains selected bibliographies.

HILL, ALBERT FREDERICK

Economic botany; a textbook of useful plants and plant products. New York: McGraw-Hill Book Company, Inc., 1937. 592 p. illus. 23 cm. (McGraw-Hill publications in the agricultural and botanical sciences, E. W. Sinnott, consulting editor) \$4.00. 4809

Contents: Introduction: The importance and nature of plant products. Industrial plants and plant products: Fibers and fiber plants. Forest products: wood and cork. Forest resources. Tanning and dye materials. Rubber and other latex products. Gums and resins. Essential oils. Fatty oils and waxes. Sugars, starches, and cellulose products. Drug plants and drugs: Medicinal plants. Fumitories and masticatories. Food plants: The history and nature of food plants. The major cereals. The minor cereals and small grains. Legumes and nuts. Vegetables. Fruits of temperate regions. Tropical fruits. Food adjuncts: Spices and other flavoring materials. Beverage plants and beverages. Appendix: Systematic list of species discussed. Bibliography.

Note: With a view to emphasizing the influence which plants have had on history and civilization and their importance in the everyday life of mankind, this book presents a simple and interesting discussion of the major useful plants and plant

products of the world from the standpoint of their history, cultivation, preparation, and utilization. An extensive bibliography is included, and a systematic list of species discussed is given for those who are interested in the taxonomic phases of the subject.

HYLANDER, CLARENCE JOHN, AND ORAN B. STANLEY

Plants and man. Philadelphia: The Blakiston Company, 1941. 518 p. illus. 22 cm. \$3.00. 4809a

Contents: Part I, The nature of the plant world: Two patterns of life. The evolution of the plant body. The evolution of plant reproduction. The variety of plant life. The interrelations of plants and man. Part II, Plants as foods and beverages: Plant manufacture of food. The region of cultivated plants. Vegetable foods. The cereal fruits. Legumes, berries, and small fruits. The orchard fruits. Sugar-producing plants. Food accessories and spices. Beverage plants. Part III, Plants as sources of wood and fibers: The plant skeleton. The gymnosperm trees. The angiosperm trees. Wood and its uses. Conservation and management of American forests. Fiber-producing plants. Part IV, Plant secretions and excretions: Latex-producing plants. Drug plants. Industrial uses of plants. Part V, Plants as parasites: Bacteria and disease. Fungi and plant disease. Part VI, The enjoyment of plant life: American wild flowers. Ornamental plants. Glossary. Index.

Note: Botany presented as a vital cultural subject for general college students, with emphasis upon its economic aspects. Gives an approach to the fundamentals of taxonomy, leading to identification of common trees, shrubs, and flowers of the United States. The book is also useful to the general reader as an introduction to economic botany.

LAUFER, BERTHOLD

The American plant migration. Part I: The potato. Prepared for publication by C. Martin Wilbur. Chicago: Chicago Natural History Museum, 1938. 132 p. illus. 24 cm. (Chicago Natural History Museum. Anthropological series. Vol. 28, no. 1, July 28, 1938. Publication no. 418) \$1.50. 4810

Contents: Introduction. Botanical origin of the potato. Early history of the potato in South America. Spread of the potato: West Indies. North America. Spain, Italy, and central Europe. Great Britain. France. Germany. Scandinavia, and eastern Europe. China. Japan and Korea. Central Asia and Siberia. Persia, the Near East, and the Caucasus. Africa. India, Burma, Siam, and Indo-China. Malayan and Oceanic regions. Appendixes. Bibliography. Index.

Note: This monograph was originally intended as the first of a series of papers on individual American cultivated plants with the history of their diffusion, but the series was not completed before the author's death. A number of sections of the proposed volumes on the American plant migration were nearly complete, and the present paper is one of these. The migration of the potato is traced from its origin in the Andes of South and Central America to its widespread distribution all over the world. There is a good bibliography of world literature on the potato and additional references given in footnotes.

MUENSCHER, WALTER CONRAD LEOPOLD

Weeds. New York: The Macmillan Company, 1935. 577 p. illus. 22 cm. (The Rural science series, edited by L. H. Bailey) \$4.50. 4811

Contents (abridged): Weeds and their control. Dissemination and importance of weeds. Weeds of special habitats. The control of weeds. Chemical weed control. Weeds arranged according to family, together with key. Glossary. Ready reference data. Literature references. Index.

Note: A treatment of the weeds of the northern United States prepared for students of agriculture, farmers, and others interested in the identification and control of weeds. Keys, descriptions, and illustrations are provided for identification. The general habits, duration, methods of reproduction, habitat, and control methods are included for long-established weeds and for more recent arrivals. Two chapters on control methods include recent developments in chemical and other special methods of weed control.

RANGE PLANT HANDBOOK. Prepared by Forest Service, United States Department of Agriculture. Washington, D.C.: Government Printing Office, 1937. 844 p. illus. (part col.) 23 cm. \$3.00.

4812

Contents: Introduction. Grasses. Grasslike plants. Range weeds. Browse. Index.

Note: This manual is intended for men in the United States Forest Service engaged in field administration who are not specialists in botany. Its purpose is twofold: to evaluate for such persons the relative importance of some 300 or more of the outstanding "key" plants of western ranges as regards grazing, watershed protective cover, recreational, and other uses; and to enable the ready field identification of these plants in order to insure the correlation of the proper management data with each species. While the handbook is chiefly representative of mountain ranges typical of the western national forests, many of the genera and species discussed occur also on the enormous areas of other and lower ranges. Included are 339 generic and specific write-ups, together with notes on over 500 additional species. For each plant there is a page or two of written description accompanied by a full-page drawing or photograph of the plant.

ROBBINS, WILFRED WILLIAM

The botany of crop plants, a text and reference book. Third edition, revised, with two hundred sixty-nine illustrations. Philadelphia: The Blakiston Company, 1931. 639 p. illus. 22 cm. \$4.00.

4813

Contents: Part I: The seed plant body. Internal structure. Roots. Stems. Leaves. Flowers. Fruits, seed, and seedlings. Classification and naming of plants. Part II: Palmaceae. Gramineae. *Triticum*. *Avena*. *Hordeum*. *Secale cereale*. *Zea*. *Andropogon sorghum*. *Oryza sativa*. Millet. *Phleum pratense*. *Saccharum officinarum*. Lilaceae. Moraceae. Polygonaceae. Chenopodiaceae. Grossulariaceae. Cruciferae. Rosaceae. Pomaceae. Drupaceae. Leguminosae. Linaceae. Rutaceae. Vitaceae. Malvaceae. Umbelliferae. Vacciniaceae. Oleaceae. Convolvulaceae. Solanaceae. Cucurbitaceae. Compositae. Glossary. Index.

Note: This text and reference book presents organized material for study of the botany of common orchard, garden, and field crops, for non-agricultural as well as agricultural schools and colleges. Part I serves as a review of fundamentals. Part II is sufficient for a course of one-half year involving one recitation and two laboratory periods per week. A glossary and bibliographies are included. The contributions to the knowledge of common crop plants between the years 1924 and 1931 are incorporated in this third revised edition, which includes a new chapter on the Palmaceae, and new material on *Ficus*, Cruciferae, and Umbelliferae. The edition has eliminated earlier matter pertaining to the distribution and yields of crop plants as being outside the botanical scope.

ROBBINS, WILFRED WILLIAM, AND FRANCIS RAMALEY

Plants useful to man. Second edition. Philadelphia: The Blakiston Company, 1937. 422 p. illus. 22 cm. \$3.50.

4814

Contents: Sources of cultivated plants. Classification and naming of plants. The lower plant groups. Cereal grains. Palm and banana families. The lily family and some other monocotyledons. Ornamental plants. Goosefoot family. Mulberry and buckwheat families. Mallow and flax families. Mustard family. Rose and apple families. Plum family. Table fruits and nuts. Legumes. Spices and tropical fruits. Citrus fruits. Olive and morning glory families. Nightshade, or potato, family. Parsley and composite families. Tea, coffee, and chocolate. Medicinal plants. Industrial products of vegetable origin. General works for reading and reference. Index.

Note: This book furnishes a background of knowledge of the world's commercial plant products for students of botany and other sciences. Emphasis is placed on historical, ecological, and physiological aspects. New material has been added in this edition on alfalfa, flax, figs, potato, and various ornamental plants. A few of the drawings of the first edition have been replaced, and there are other minor changes.

ROBBINS, WILFRED WILLIAM, AND OTHERS

Weed control, a textbook and manual, by Wilfred W. Robbins, Alden S. Crafts, and Richard N. Raynor. New York: McGraw-Hill Book Company, Inc., 1942. 543 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences; L. J. Cole, consulting editor) \$5.00.

4815

Contents: Weeds and human affairs. Reproduction of weeds. Association of weeds with soils and crops. Methods of preventing the introduction and spread of weeds. Principles of weed control. Tillage methods of weed control. Competition between crop plants and weeds. Biological control of weeds. The use of chemicals in weed control. Nonselective contact sprays. Selective herbicides. Translocated sprays. Chemical soil sterilization—general principles. Temporary soil sterilants of a volatile nature. Sodium chlorate as a temporary soil sterilant. Boron compounds as soil sterilants. Arsenic compounds in soil sterilization. Thiocyanates and other soil sterilants. A comparison of arsenic, boron, thiocyanate, and chlorate. Combinations of herbicides. Comparison and application of weed-control methods. Machinery for applying herbicides. Special weed problems—weeds of grasslands and turf. Special weed problems—cropped areas. Special weed problems—uncropped areas. Special weeds.

Note: The authors of this volume give a critical review of the various methods of weed control, including the results of recent investigations. There is an adequate treatment of reproduction and dissemination of weeds, competition between crop plants and weeds, and association of weeds with soils and crops. The main emphasis is on practical weed control methods, their uses and limitations.

SPENCER, EDWIN ROLLIN

Just weeds. New York: Charles Scribner's Sons, 1940. 317 p. illus. 24 cm. \$2.75.

4816

Contents (abridged): Preface. The reasons for "just weeds." Habitat and seasonal indexes. Weeds that are grasslike. Weeds that are not grasslike.

Note: One hundred and two weeds are illustrated in this popular work and then described at length for the general reader.

STANFORD, ERNEST ELWOOD

Economic plants. New York: D. Appleton-Century Co., 1934. 571 p. illus. 23 cm. (The Century biological series, Robert Hegner, editor) \$5.50.

4817

Contents: The plant kingdom. Cells, tissues, and organs. Forest products: wood, timber, and lumber. Forest products: uses, distribution and kinds of wood. Forest products: resins, tanning materials, and cork. Forest products: rubber and other latex products. Textile plants and products. Paper and pulp. Food products: cereals and allied crops. Sugar and sugar plants. The fixed oils. Plants and nitrogen: protein products. Food products: certain fruits. Spices and other aromatic products. Beverage-yielding plants. Medicinal plants. Index.

Note: Planned as a textbook for college courses, this survey of economic botany is written for the general public as well. The two introductory chapters give orientation in the plant world and with regard to the structure of green plants. Characteristics, uses and distribution are discussed for each plant treated. References are given in a limited number of footnotes.

VESTAL, PAUL ANTHONY, AND RICHARD EVANS SCHULTES

The economic botany of the Kiowa Indians, as it relates to the history of the tribe. With a foreword by Clyde Kluckhohn. Cambridge, Mass.: Botanical Museum, 1939. 110 p. illus. 27 cm. \$2.00.

4818

Contents: Introduction. Historical notes. Materials and methods. Key to the pronunciation of Kiowa words. Economic plants of the Kiowa. Enumeration of Kiowa uses. Discussion of the foregoing botanical notes. A. Distribution studies. B. Borrowing. Conclusions. Summary. Bibliography. Explanation of the plates. Index.

Note: In this work the technique of geographical botany is

used to show relationship between the known history of Kiowa Indians and the geographical distribution of the plants used as foods, medicines, and symbolic plants. The uses of plants by the one-time nomadic, hunting Kiowa are correlated before, and after, settlement by the tribe on a reservation in Oklahoma. Many plants which are in use today are the same ones which were employed as far back as the actual and traditional history of the tribe can be traced. Other plants, some important, have been acquired since settlement on the reservation. The most important recent acquisition is peyote, which has brought numerous changes in ceremonies and medicines.

Plant Breeding and Propagation

ADRIANCE, GUY WEBB, AND FRED R. BRISON

Propagation of horticultural plants. New York: McGraw-Hill Book Company, Inc., 1939. 314 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences, L. J. Cole, consulting editor) \$3.00. 4819

Contents: Introduction. Seeds. Fruits and flowers. Germination of seeds. Forcing equipment. Asexual propagation. Bulbs and related structures. Layerage. Cuttage. Graftage. Grafting waxes, materials and tools. Methods of grafting. Methods of budding. Propagation of certain plants. The relation of propagation practice to diseases. Transplanting. Growing and handling of nursery stock.

Note: A detailed consideration of the common practices of plant propagation, including the use of seeds and the various asexual methods. Application of these methods to the propagation of species of commercial importance is stressed, and cultural operations and other problems in nursery management are included.

COOK, ORATOR FULLER

Cotton improvement through type selection, with special reference to the Acala variety. Washington, D.C.: Government Printing Office, 1932. 62 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 302) \$0.30. 4820

Contents: General problems of selection in cotton. Systems of selection defined and illustrated. Cotton variations underlying the application of selection. Field conditions and precautions in selection. Summary and conclusions. Literature cited.

Note: This pamphlet is a technical discussion of the problem of selection as applied to the breeding and preservation of varieties of cotton, especially of the Acala variety. It contains 26 plates containing photographic illustrations.

HARLAN, HARRY VAUGHN, AND OTHERS

A study of methods in barley breeding, by H. V. Harlan, M. L. Martini, and Harland Stevens. Washington, D.C.: Government Printing Office, 1940. 26 p. illus. 22 cm. (United States. Department of Agriculture. Technical bulletin no. 720) \$0.05. 4821

Contents: Introduction. Plan of the experiment. Evaluation of the parents used. Six-rowed X two-rowed crosses. Methods of selecting from pedigree populations. Comparison of selections made from pedigree crosses with those made from the composite. Plant characters. Validity of the test. Plans for further work. Summary and conclusions.

Note: An analysis of the yields of 5,842 plant selections made from the progenies of 379 barley crosses is presented in this bulletin. The crosses were all definite matings in a planned series.

HAYES, HERBERT KENDALL, AND FORREST RHINEHART IMMER

Methods of plant breeding. New York: McGraw-Hill Book Company, Inc., 1942. 432 p.

illus. 23 cm. (McGraw-Hill publications in the agricultural sciences; L. J. Cole, consulting editor) \$4.00. 4822

Contents: Preface. The role of plant breeding. The genetic and cytogenetic basis of plant breeding. Mode of reproduction in relation to breeding methods. Techniques in selfing and crossing. The pure-line method of breeding naturally self-pollinated plants. Hybridization as a method of improving self-pollinated plants. The back-cross method of plant breeding. Breeding for disease and insect resistance. Inheritance in wheat. Inheritance in oats. Inheritance in barley. Inheritance in flax. Methods of selection for special characters. Development of methods of corn breeding. Inheritance in maize. Controlled pollination methods of breeding cross-pollinated plants. Seed production. Some commonly used measures of type and variability. Field-plot technic. Randomized blocks, Latin squares, and χ^2 tests. Correlation and regression in relation to plant breeding. Multiple experiments, methods of testing a large number of varieties, and the analysis of data expressed as percentages. Literature citations. Glossary. Appendix. Index.

Note: A textbook in the science of plant breeding based upon courses given at the University of Minnesota for both undergraduate and graduate students. Emphasis is placed upon the mode of inheritance of important characters of the small grains, flax, and corn. It is expected that the student will use supplementary material covering inheritance in other crop plants. For this purpose a twenty-page bibliography is provided.

KAINS, MAURICE GRENVILLE, AND L. M. MCQUESTEN

Propagation of plants; a complete guide for professional and amateur growers of plants by seeds, layers, grafting and budding, with chapters on nursery and greenhouse management. Revised and enlarged edition. New York: Orange Judd Publishing Company, Inc., 1942. 639 p. illus. 23 cm. \$3.50. 4822a

Contents: Introduction. Germination. Seed testing. Vegetative propagation. Layerage, division, separation. Classes of cuttings. Root initiation on cuttings by "growth substances." Propagating structures. Transplanting. Greenhouse fumigation. Graftage—general considerations. Methods of grafting. After-treatment of grafts. Fruit tree stocks. Budding methods. Stock and scion handling. Nursery management. Pest control. Plant quarantine art and regulation. Planting orchard trees. Practicums. Appendix. Indexes.

Note: A standard American text on plant propagation for use by commercial and amateur plant propagators and by teachers in farm schools, agricultural and forestry colleges. Plant lists and condensed rules of propagation are provided for most types of familiar and unfamiliar plant material and there is information basic to the development of new plants. The index not only covers the entire text but lists the tables, section subjects, illustrations, variety names, institutions, and authors whose work has been cited. The revised edition incorporates the advances and discoveries in the art made between 1910 and 1938.

LAURIE, ALEXANDER, AND L. C. CHADWICK

The modern nursery; a guide to plant propagation, culture, and handling. New York: The Macmillan Company, 1931. 494 p. illus. 20 cm. \$5.00. 4822b

Contents: The nursery business. Status of the industry. The location and layout of the nursery. Tools. Structures for propagation. Soils. Fertilizers. Reproduction. Propagation by seed. Vegetative propagation. The propagation of special plants. Propagation of florist's crops. Propagation of herbaceous perennials. Cultural practices. Nursery pests. Storage, packing, and grading. Office management. Marketing. Nursery laws, quarantines, and plant patents. Index.

Note: A manual of nursery practice based upon personal experiences and experimental work and upon the study of current practices among nurserymen throughout the United States. The viewpoint is that of profit and loss, with emphasis upon the care, propagation, and marketing of ornamentals, which comprise the largest single item of the nursery trade. There are over 40 tables of statistics based on actual nursery records, plus numerous hints, remedies, and short-cuts for the practical nurseryman. Bibliographies are given at the end of each chapter.

QUISENBERRY, KARL SPANGLER

Inheritance of winter hardiness, growth habit, and stem-rust reaction in crosses between Minhardi winter and H-44 spring wheats. Washington, D.C.: Government Printing Office, 1931. 46 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 218) \$0.15. 4823

Contents: Research and breeding problems: Historical review. Materials and methods. Results: Winter hardiness. Growth habit. Relation between winter hardiness and growth habit. Stem-rust reaction. Heading period. Color of coleoptile. Awedness. Characters not associated. Discussion. Summary. Literature cited.

Note: The purpose of the study presented in this bulletin was to obtain more fundamental information on the inheritance of winter hardiness, winter-spring growth habit, and rust reaction, and the interrelations of these characters in a winter X spring wheat cross. The object was to increase the knowledge of the manner of inheritance of such characters with a view to helping plant breeders seeking improved varieties of wheat.

SHAMEL, ARCHIBALD DIXON, AND OTHERS

Bud selection in Eureka and Lisbon lemons and progeny tests of bud variations, by A. D. Shamel, C. S. Pomeroy, and R. E. Caryl. Washington, D.C.: Government Printing Office, 1936. 44 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 531) \$0.10. 4824

Contents: Introduction. Bud variations in Eureka and Lisbon varieties. Frequency and significance of bud variations. Variations of the Eureka variety. Variations of the Lisbon variety. Other striking variations. Progeny tests of lemon bud variations. Progeny performance records. Progeny data on Eureka strains. Progeny data on Lisbon strains. Perpetuation of variations in quantity of crop. Commercial quality of crops of different strains. Season of maximum production in different strains. Relative inherent stability of different trees. Isolation of inherently stable strains. Elimination of inherently inferior strain trees. Commercial importance of lemon bud selection. Summary. Literature cited.

Note: The investigations reported in this bulletin were undertaken for the purpose of determining the nature and frequency of the occurrence of bud variations in the fruits and foliage of trees of the Eureka and Lisbon varieties, the two chief varieties of lemon grown in the United States. Bud variation in these trees is fairly frequent, occurring as individual fruit, limb, and entire-tree variations. Resulting strains differ in habit of growth, foliage characteristics, and quantity and quality of the fruits. The tests here described were made to establish whether or not their characteristics are perpetuated through bud propagation. Individual-tree records and other performance data covering a period of more than ten years are presented and the results are discussed. The individual progeny tree-performance record studies are of value in the consideration of the degree of inheritance of the characters of the parent variations and are sometimes of commercial importance as to sources of inherently stable and commercially superior budwood for propagation.

SMITH, GLENN SANBORN, AND J. ALLEN CLARK

Inheritance of stem-rust reaction and correlation of characters in Pentad, Nodak, and Akrona durum-wheat crosses. Washington, D.C.: Government Printing Office, 1933. 28 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 385) \$0.05. 4825

Contents: Introduction. Previous investigations. Description of parents. Experimental methods. Segregation of characters. Correlation of characters. Summary. Literature cited.

Note: The purpose of this study was to learn more about the inheritance of reaction to stem rust, *Puccinia graminis* Pers., and to determine the relationships between the important contrasting characters in the three possible crosses between Pentad,

Nodak, and Akrona durum wheats. The characters studied were stem-rust reaction, yield per plant, test weight per bushel, plumpness of kernel, weight of kernel, date of heading, date of ripening, length of fruiting period, gasoline color value, and protein content. The publication was intended as a contribution to the knowledge of the inheritance of characters in connection with wheat-breeding programs.

UNITED STATES. DEPARTMENT OF AGRICULTURE

Better plants and animals. A survey of superior germ plasm. Edited by Gove Hambidge and E. N. Bressman. Books I-II. Washington, D.C.: Government Printing Office, 1936-37. 1189, 1497 p. illus. 23 cm. (United States. Department of Agriculture. Yearbook of agriculture 1936-1937) Book I, \$1.25; Book II, \$2.00. 4826

Contents: Book I: The Secretary's report to the President. Better plants and animals: Foreword and summary. A glossary of genetic terms. Heredity under the microscope. Unusual possibilities in breeding. Improvement in wheat. Problems and results in barley breeding. Superior germ plasm in oats. Improvement in rice. Corn improvement. Sorghum improvement. Sugarcane: its origin and improvement. Improvement of the sugar beet. Plant breeding and the cotton industry. Improvement in flax. Superior germ plasm in tobacco. Livestock breeding at the crossroads. Beef and dual-purpose cattle breeding. Swine—some current breeding problems. Breeding problems with sheep. Improving horses and mules. Superior breeding stock in poultry industry. Superior germ plasm in dairy herds. Statistics—prepared under the direction of the Yearbook Statistical Committee. Index. Book II: The Secretary's report to the President. Better plants and animals—II: What the book is about. Vegetable crop breeding and improvement—an introduction. Improvement and genetics of tomatoes, peppers, and eggplant. Breeding and improvement of cucurbits. Onion improvement. Breeding and improvement of peas and beans. Improvement in the leafy cruciferous vegetables. Improving the root vegetables. Improvement of the salad crops. Improvement of the vegetable crops—appendix. Improvement of sweet corn. Popcorn breeding. Breeding and genetics in potato improvement. Strawberry improvement. Blackberry and raspberry improvement. Improvement of currants and gooseberries. Some unusual opportunities in plant breeding. Improving the wild blueberry. Progress in apple improvement. Progress in pear improvement. Grape development and improvement. Improvement of stone fruits. Improvement of subtropical fruit crops: citrus. Nut breeding. Improvement of flowers by breeding. Breeding miscellaneous forage and cover crop legumes. Breeding miscellaneous grasses. Improvement of timothy. Alfalfa improvement. Improvement in soybeans. Clover improvement. Varietal improvement in hops. Improvement of forest trees. Breeding problems with angora goats. Improvement of milk goats. Heredity in the dog. The breeding of turkeys. Duck breeding. The breeding of fur animals. Bee breeding. Fundamentals of heredity for breeders. Vegetative reproduction. A chronology of genetics. Index.

Note: These two volumes instituted a new departure in the Yearbook of Agriculture series in that they were devoted to a single subject. They are the result of the work of the 14-man Committee on Genetics appointed by the Secretary of Agriculture in 1933 to make a national and to some extent an international survey of practical breeding and genetic research with those plants and animals that are important in American farming. They comprise a comprehensive effort to survey superior germ plasm in the leading agricultural plants and animals of the United States. Much of the material included was collected through cooperative forms and questionnaires designed to survey the breeding and research work in all state agricultural experiment stations and in similar public and private institutions both in the United States and in other countries. The preparation of the papers was assigned to Department of Agriculture scientists actively specializing in work with each kind or group of plants or animals. The authors drew upon their own experience and knowledge and on the whole field of technical literature, as well as summarizing the information obtained from the cooperative survey. For each plant or animal are given a historical summary of what has been done in the past, a discussion of present work and future possibilities, accounts of the methods used in modern breeding, and in most cases a brief discussion of theoretical research dealing with inheritance in the particular plant or animal, and a list of literature cited. The bulk of the material is presented so far as possible with sufficient simplicity for it to be grasped by those who may be without scientific training in the field of genetics.

WOLF, FREDERICK ADOLPH

Tobacco diseases and decays. Durham, N.C.: Duke University Press, 1935. 454 p. illus. 23 cm. (Duke University publications) \$5.00. 4827

Contents (abridged): Preface. Introduction. The seed bed as related to the problem of control of tobacco diseases. Nutritional diseases. Diseases due to unfavorable water relations. Disorders and diseased conditions of tobacco that are little known and non-infectious. Diseases caused by viruses. Bacterial diseases of tobacco. Diseases of the growing crop caused by fungi. Diseases caused by nematodes. Diseases caused by parasitic flowering or seed plants. Decays of tobacco during curing, during fermentation and storage, and after manufacture. Bibliography. Index.

Note: This volume is written to aid the grower in the identification of tobacco diseases and to inform him regarding the causes and control of each disorder, and for all others who are interested in the tobacco industry: manufacturers, investigators, plant pathologists, agricultural advisers, and students. The book contains accounts of approximately 100 different kinds of tobacco diseases and decays, about 60 of which are known to occur in districts where flue-cured tobacco is produced. The suggestions for prevention and control of diseases are based upon a knowledge of the primary and contributing causes. In all cases where experiments have been performed in the field to determine their control, such results are summarized.

Plant Diseases

ABBOTT, ERNEST VICTOR

Red rot of sugarcane. Washington, D.C.: Government Printing Office, 1938. 96 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 641) \$0.15. 4828

Contents: Introduction. Description of the disease. Losses caused by the disease. History of the disease and geographic distribution. Failure of P.O.J. 213 in Louisiana. Survey of the red rot flora. Cultural characters of *Colletotrichum falcatum*. Life history of *Colletotrichum falcatum* in relation to occurrence and spread of the disease. Comparative virulence tests of isolates of *Colletotrichum falcatum*. Varietal resistance and susceptibility. Control of the disease. Summary. Literature cited.

Note: This pamphlet treats red rot, one of the major diseases of sugarcane in the United States, particularly with a view to determining the extent of changes in the virulence of the parasite. It also studies the nature of resistance to red rot, and the degree to which resistance is inherited in seedling progenies, in order that the dangers of the disease may be reduced through the breeding of resistant varieties of sugarcane.

ADAIR, CHARLES ROY

Inheritance in rice of reaction to *Helminthosporium oryzae* and *Cercospora oryzae*. Washington, D.C.: Government Printing Office, 1941. 19 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 772) \$0.05. 4829

Contents: Introduction. Literature review. Inheritance of reaction to *Helminthosporium oryzae*. Inheritance of reaction to *Cercospora oryzae*. Summary. Literature cited.

Note: This bulletin reports the results of studies on the inheritance of reaction to two of the principal diseases of rice, those caused by *Helminthosporium oryzae* B. de H. and *Cercospora oryzae* Miy. The studies were made upon crosses between rice varieties differing in disease reaction grown in certain fields and greenhouses in Arkansas and Texas between 1934 and 1938.

CHESTER, KENNETH STARR

The nature and prevention of plant diseases. Philadelphia: The Blakiston Company, 1942. 584 p. illus. 23 cm. (Blakiston books on agriculture; G. H. Collings, consulting editor) \$4.50. 4830

Contents (abridged): Significance of plant disease in agriculture. Types of plant disease; fungi. Diseases caused by Basidiomycetes: rusts; smuts; fleshy fungi; Mycorrhizae. By Ascomycetes. By imperfect fungi. By Phycomycetes. Damping-off and related troubles. Diseases caused by bacteria. By viruses. By parasitic seed plants and Algae; Epiphytes. By nematodes or eelworms. Physiogenic diseases. Methods of studying plant diseases. Environment and parasitic disease. Etiology and epiphytology of disease. Principles and procedures in the control of plant diseases. Control of plant diseases by regulation. By inducing resistance. By cultural methods. Index.

Note: Stressing the practical aspects of plant disease control, this new book presents the essential features of plant pathology as exemplified in the leading diseases of important American crops. It is both a textbook for an elementary course in plant pathology and a manual of detailed and specific directions for controlling the more important plant diseases throughout the United States. The effects of environment in influencing plant diseases are emphasized, together with the modifications in epiphytology of plant diseases under conditions of warm climates, dry land, and irrigation. Certain pathological syndromes such as the corn root-, stalk-, and ear-rots, the cotton seedling disease and boll rot problem, and the root- and stalk-rots of sorghums are considered. Lists of disease resistant crop varieties, trade names and compositions of fungicides, and working directions are included.

DODGE, BERNARD OGILVIE, AND HAROLD W. RICKETT

Diseases and pests of ornamental plants. Lancaster, Pa.: The Jaques Cattell Press, 1943. 638 p. illus. 23 cm. \$6.50. 4831

Contents: Part I, Diseases and pests in general, plant diseases: Plant diseases classified by symptoms. Plant diseases classified by causes. Bacteria and fungi: Bacteria. Fungi. The names of plants. The groups of fungi. Insects and other animal pests: Insects. Insect pests of general occurrence. Miscellaneous animal pests. Control: Culture. Sanitation. Resistance. Poisons. Heat. Biologic control. Appendix. Part II, Diseases and pests of particular hosts. Index.

Note: The greater portion of this work, covering approximately 500 pages, is devoted to a listing of plant diseases and pests of particular hosts, given under the botanical names of the plant hosts which are arranged in alphabetical order. The symptoms and appearance of the disease are indicated along with the scientific and common name of the disease, and methods of control are outlined. The first four chapters present a general outline of the causes, effects, and means of preventing or overcoming plant diseases. The book is intended for the average home gardener as well as for the professional nursery owner.

FAWCETT, HOWARD SAMUEL

Citrus diseases and their control. Second edition, completely revised, rewritten and enlarged. New York: McGraw-Hill Book Company, Inc., 1936. 656 p. illus. (part col.) 23 cm. (McGraw-Hill publications in the agricultural and botanical sciences, E. W. Sinnott, consulting editor) \$6.00. 4832

Contents (abridged): Part I, General considerations: History of citrus-disease investigations. Species and varieties of citrus in relation to diseases. Geographical distribution of citrus diseases. Fungicides, disinfectants, paints and waxes. Cultural operations in relation to citrus diseases. Part II, Root and trunk diseases. Part III, Diseases of branches, twigs and leaves. Part IV, Fruit diseases: General problems of deterioration and decay of citrus fruits. Problems of decay and deterioration of citrus fruits from the tree to the market. Special problems of decay and deterioration in lemon fruits. Bibliography. Index.

Note: A thorough discussion of the present information on citrus diseases occurring in all parts of the world. The book will serve as a guide to growers in the identification of diseases; diagnosis of their causes; and application of control measures. In the fifteen colored plates in the book about 25 diseases or effects are shown. Special attention is given not only to symptoms but to causes, contributing conditions, prevention, and control. This edition has been extensively rewritten. New material includes sections on mal secco, water rot, areolate spot, and many other diseases. A chapter has been added on diseases due to deficiency or excess of various inorganic constituents.

GARRETT, STEPHEN DENIS

Root disease fungi; a treatise on the epidemiology of soil-borne disease in crop plants, and a first exposition of the principles of root disease control. Waltham, Mass.: Chronica Botanica Company, 1944. 177 p. illus. 23 cm. (Annalis cryptogamici et phytopathologici, edited by Frans Verdoorn. Vol. 1) \$4.50. 4832a

Contents: Introduction. Parasitic specialization in the root-infecting fungi. Parasitic activity of the root-infecting fungi. Influence of soil temperature upon parasitic activity. Influence of soil moisture content, texture, and reaction upon parasitic activity. Influence of soil organic content and concentration of plant nutrients upon parasitic activity. Saprophytic activity of the root-infecting fungi. Dormancy of the root-infecting fungi. Control of root disease in field crops: Crop rotation. Plant sanitation. Disease control under the growing crop. Control of root disease in plantation crops: On virgin areas. In mature plantations and on replanted areas. Special problems. Control of root disease in glass-house crops. Bibliography. Indexes.

Note: A treatise in monograph form which focusses attention on a comparatively small number of well-known fungi causing diseases of notable economic importance. In the first part of the work are demonstrated certain trends in the subterranean evolution of the parasitic habit. The latter half of the book deals with the principles of control under different types of cultivation. About 500 references are listed in the bibliography.

HARTER, LEONARD LEE, AND W. J. ZAUMEYER

A monographic study of bean diseases and methods for their control. Washington, D.C.: Government Printing Office, 1944. 160 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 868) \$0.25. 4833

Contents: Introduction. Field diseases of snap and dry beans: Fungus diseases. Bacterial diseases. Virus diseases. Diseases due to nematodes and insects. Nonparasitic diseases. Field diseases of lima beans: Fungus diseases. Bacterial diseases. Mosaic, a virus disease. Blossom drop, a nonparasitic disease. Miscellaneous fungi and bacteria reported on snap, dry, and lima beans. Transit and market diseases. Inheritance of disease resistance and of certain abnormalities. Literature cited.

Note: This bulletin is a manual on the diseases of the bean. Its purpose is to assemble pertinent information from the literature of the subject together with the results of investigations conducted by the writers over a period of years. Several minor diseases are here described for the first time. There are many photographs showing the effects of the various diseases. The following facts are given about the diseases in turn: geographical distribution and economic importance; symptoms; causal organism: synonymy, morphology and physiology, pathogenicity, dissemination; hosts; control. The bibliography lists 556 items.

HEALD, FREDERICK DE FOREST

Introduction to plant pathology. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. 603 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences. L. J. Cole, consulting editor) \$4.00. 4834

Contents: Section I, General information: Introduction. Symptoms of diseases in plants. The relation of fungi and bacteria to human affairs. The dissemination of plant diseases. Section II, Parasitic diseases: The condition of a fungus in or on the substratum. Diseases due to phycmycetes. Diseases due to ascomycetes. Diseases due to basidiomycetes: smut fungi, ustilaginiales. Diseases due to basidiomycetes—rust fungi, uredinales. Diseases due to basidiomycetes—palisade fungi. Diseases due to imperfect fungi. Diseases due to bacteria. Parasitic seed plants and the troubles they cause. Diseases due to nematodes. Section III, Virous diseases: Types of viruses and general nature of viruses. Diseases due to viruses. Section IV, Nonparasitic diseases: Diseases due to unfavorable soil conditions: deficiencies or excesses of food materials, soluble salts or water. Diseases due to improper air relations, high temperatures, low temperatures and unfavorable light processes. Diseases due to control practices.

Note: Although this college textbook covers the same ground as

the author's *Manual of plant diseases* (see below), and is a shorter work, it is not an abridgment of the more complete title. Some of the material not present in the larger text is offered in this one, and the scheme of presentation is different. This work is designed specifically for courses in plant pathology for students who do not intend to specialize in the subject. In the second edition sections on disease prevention and control and on plant pathology methods are omitted, but descriptions of 15 additional types of parasitic diseases have been added. The number of illustrations has been increased by 40, and there are other changes throughout the text.

HEALD, FREDERICK DE FOREST

Manual of plant diseases. Second edition. New York: McGraw-Hill Book Company, Inc., 1933. 953 p. illus. 23 cm. (McGraw-Hill publications in the agricultural and botanical sciences, E. W. Sinnott, consulting editor) \$7.50. 4835

Contents (abridged): Symptoms of disease in plants. Diseases due to deficiencies of food materials in the soil. Diseases due to excesses of soluble salts in the soil. Diseases due to unfavorable water relations. Diseases due to improper air relations. Diseases due to high temperatures. Diseases due to low temperatures. Diseases due to unfavorable light relations. Diseases due to manufacturing or industrial processes. Virus and related diseases. Bacterial diseases of plants. Slime molds and plant diseases. Diseases due to downy mildews and allies. Diseases due to black molds and allies. Diseases due to leaf curls and related fungi. Diseases due to powdery mildews and allies. Diseases due to sphere fungi and allies. Diseases due to smut fungi. Diseases due to rust fungi. Diseases due to salisade fungi and allies. Parasitic seed plants and the troubles they cause. Nematodes and the diseases they cause.

Note: A standard text and reference book. In this edition changes have been made to incorporate the results of research reported after the publication of the first edition. The section on virus and related diseases has been entirely rewritten, and much new material covering the recent marked advances in phytopathology has been added throughout the various chapters.

HOLMES, FRANCIS OLIVER

Handbook of phytopathogenic viruses. Minneapolis, Minn.: Burgess Publishing Company, 1939. 221 p. 22 cm. \$2.00. 4836

Contents (abridged): Kingdom Vira. Division I, Phytophagi. Class I, Schizophytophagi. Family I, Phagaceae. Class II, Spermatophytophagi. Family I, Chlorogenaceae. 2, Marmoraceae. 3, Annulaceae. 4, Gallaceae. 5, Acrogenaceae. 6, Rugaceae. 7, Coriaceae. 8, Nanaceae. 9, Savoiaceae. 10, Lethaceae. Supplement I, Bacteriophages. II, Lists of susceptible and insusceptible plants. III, Viruses not treated in this handbook. Index.

Note: The author of this handbook was aware of a need for a classification of viruses which would be capable of clearly indicating present conceptions, yet flexible enough to permit easy assimilation of changes as new evidence becomes available. In this volume he has employed and amplified a system recently advocated, one which resembles that in common use for classification of higher biologic forms. The Latin names used are all new and are accompanied by descriptions of the viruses to which they apply. The common names of the latter are also given. The viruses considered are primarily those affecting seed plants, while the bacteriophages treated in the supplement are included because they are of interest to plant pathologists, for whom the handbook is chiefly designed.

HOLTON, CHARLES STEWART, AND FREDERICK DE FOREST HEALD

Bunt or stinking smut of wheat (a world problem). Minneapolis, Minn.: Burgess Publishing Company, 1941. 211 p. illus. 27 cm. Paper, \$3.25. 4837

Contents: Introduction. Economic importance of bunt. Species distinction, spore germination, and artificial culturing of the bunt fungi. Host range of the bunt fungi and other species of *Tilletia* affecting wheat or other cereals. Factors affecting infection by the bunt fungi and their development in the host. Effect of bunt on the morphology and physiology of the wheat plant. Physiologic specialization in the bunt fungi. Cytology of the bunt fungi. Heterothallism, hybridization, and species association in *Tilletia*

tritici and *T. levis*. Varietal reaction and the genetics of resistance to bunt. Seed treatment and cultural practices for bunt control.

Note: This volume constitutes an extensive review of the literature concerning bunt, or stinking smut, of wheat, one of the oldest known plant diseases. Each cited paper is briefly abstracted and discussed, and there is a bibliography at the end of each chapter.

HUMPHREY, HARRY BAKER, AND OTHERS

The rusts of cereal crops, by H. B. Humphrey, E. C. Stakman, E. B. Mains, C. O. Johnston, H. C. Murphy, and Wayne M. Bever. Washington, D.C.: Government Printing Office, 1935. 27 p. illus. 23 cm. (United States. Department of Agriculture. Circular no. 341) \$0.05. 4838

Contents: Introduction. Wheat rusts: Stem rust. Leaf rust. Stripe rust. Oat rusts: Stem rust. Crown rust. Barley rusts: Stem rust. Leaf rust. Rye rusts: Stem rust. Leaf rust. Corn (maize) rust. Sorghum rust.

Note: This circular describes the eleven cereal rusts. For each rust is given the following information: description, plants attacked, life history, life cycle of the fungus in graphic form, parasitic strains, development of epidemics, distribution and economic importance, control. It is intended as a guide to farmers and others concerned with the cereal rusts.

KLOTZ, LEO JOSEPH, AND H. S. FAWCETT

Color handbook of citrus diseases. Berkeley: University of California Press, 1941. 90 p. illus. (part col.) 21 cm. \$3.50. 4839

Note: This book is designed to supply citrus growers, horticulturists, packing house workers, inspectors, and others with a ready means of identifying and combating citrus diseases. Nearly all maladies occurring in orchard, packing house, and in transit are depicted and described. There are ninety pages of text and forty plates in full color, which contain 108 illustrations made from Kodachrome photographs.

LEACH, JULIAN GILBERT

Insect transmission of plant diseases. New York: McGraw-Hill Book Company, Inc., 1940. 615 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences; L. J. Cole, consulting editor) \$6.00. 4840

Contents: Introduction. The interrelationships of plants and insects. Symbiosis between insects and microorganisms and its significance in plant pathology. The relation of insects to the spread and development of plant diseases. Plant diseases caused by toxicogenic insects. Insects and bacterial diseases. Insects and fungus diseases. Insects and virus diseases. Insects and phytopathogenic Protozoa. Mites, nematodes, and other small animals as vectors of plant diseases. The anatomy and physiology of plants in relation to infection and insect vectors. The anatomy and physiology of insects in relation to the transmission of plant diseases. The inocula of plant pathogens in relation to insect transmission. The feeding and breeding habits of insects in relation to the transmission of plant diseases. Insect transmission of animal diseases compared with insect transmission of plant diseases. Methods useful in the study of insect transmission of plant diseases.

Note: This textbook brings together the accumulated facts of insect transmission of plant diseases, considering the phenomena from the standpoint of their broad biological significance as well as from the standpoint of practical plant pathology.

LEUKEL, ROBERT WHILMER, AND OTHERS

Effects of certain environmental factors on stripe disease of barley and the control of the disease by seed treatment, by R. W. Leukel, J. G. Dickson, and A. G. Johnson, in cooperation with the Wisconsin Agricultural Experiment Station. Washington, D.C.: Government Printing Office, 1933. 40 p. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 341) \$0.05. 4841

Contents: Introduction. Nature of the disease. Effect of environmental conditions. Control of stripe disease by seed treatment. Summary. Literature cited.

Note: This pamphlet describes the widespread barley disease caused by *Helminthosporium graminum* Rabb, known as stripe disease of barley. It discusses the effect of environment upon the disease and reports certain experiments made in Wisconsin during the years 1926 to 1930 inclusive to control the disease by seed treatment.

LEUKEL, ROBERT WHILMER, AND JOHN H. MARTIN

Seed rot and seedling blight of sorghum. Washington, D.C.: Government Printing Office, 1943. 26 p. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 839) \$0.10. 4842

Contents: Summary. Introduction and discussion of results. Review of the literature. Material and methods. Experimental results. Literature cited.

Note: This pamphlet presents information regarding the causes of and the conditions favoring seed rots and seedling blights in the sorghum (*Sorghum vulgare* Pers.) crop with a view to reducing the losses from these diseases. Experimental tests on sorghum of various seed-borne fungi and soil-inhabiting fungi are described.

LEUKEL, ROBERT WHILMER

Studies on bunt, or stinking smut, of wheat and its control. Washington, D.C.: Government Printing Office, 1937. 48 p. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 582) \$0.10. 4843

Contents: Introduction. Material and methods: Seed and inoculum. Compounds used as fungicides. Treating and sowing the seed. Corrosion studies. Experimental results: Factors influencing infection. Experiments with bunt fungicides. Summary. Literature cited.

Note: Experiments on bunt and its control were conducted at the Arlington Experiment Farm, near Arlington, Virginia, between 1925 and 1937. This bulletin presents the results of some of these and other experiments on the development and control of bunt and the efficiency of a number of fungicides in controlling it. Data also appear on the effects of certain seed treatments on germination and yield and the relation between the percentage of bunt and the resulting percentage reduction in yield.

MELHUS, IRVING E., AND GEORGE C. KENT

Elements of plant pathology. New York: The Macmillan Company, 1939. 493 p. illus. 22 cm. \$4.00. 4844

Contents: Plant pathology and human affairs. Development of plant pathology. Disease in plants. Parasitism. Influence of environment on plant diseases. Principles of control measures. Diseases caused by phycomycetes. Diseases caused by bacteria. Virus-diseases of plants. Diseases caused by ascomycetes. Diseases caused by fungi imperfecti. Diseases caused by basidiomycetes. Diseases caused by seed plants. Diseases caused by plant parasitic nematodes. Diseases caused by non-parasitic agents. Glossary. Bibliography.

Note: An undergraduate college text of special value to students of agriculture.

RANDS, ROBERT DELAFIELD, AND ERNEST DOPP

Pythium root rot of sugarcane. Washington, D.C.: Government Printing Office, 1938. 96 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 666) \$0.15. 4845

Contents: Introduction. History and geographic distribution. Economic importance. Symptoms and seasonal development. Etiology. Physiologic specialization of *Pythium arrhenomanes*. Influence of environmental factors. Influence of farm practices. Varietal resistance and susceptibility. Control of root rot. Summary. Literature cited.

Note: This bulletin presents a general summary of investigation carried on intermittently between 1924 and 1938 on root rot caused by *Pythium arrhenomanes* Drechsler, one of the three major diseases of sugarcane in Louisiana.

RAWLINS, THOMAS ELSWORTH

Phytopathological and botanical research methods. New York: John Wiley & Sons, Inc., 1933. 156 p. illus. 23 cm. \$2.50. 4846

Contents: Choosing and planning a research project. Experimental methods—microscopic methods, culture methods, virus studies, miscellaneous experimental methods. Interpretation of experimental results. Bibliography. Index.

Note: Information on the diverse fields of technique involved in modern plant pathology, such as cytology, microchemistry, photomicrography, culture methods, methods of handling viruses, planning of research, and interpretation of results. The techniques which have been found most satisfactory in phytopathological research are described in detail. Identification of crystals and the study of the structure of plant constituents by means of the polarizing microscope are among the improved microchemical techniques explained.

RIKER, ALBERT JOYCE, AND REGINA S. RIKER

Introduction to research on plant diseases; a guide to the principles and practice for studying various plant-disease problems. Madison, Wis.: The authors, 1936. 117 p. illus. 28 cm. \$2.50. 4847

Contents (abridged): Preliminary consideration. Foundation of a research problem. General laboratory equipment. Culture media. Certain physical-chemical measurements. Isolation, culture, and inoculation. Virus diseases. Certain procedures for pathological histology. Epidemiology, environment, and control. Statistical analysis. Records and manuscripts. Laboratory exercise topics. Appendix. Index.

Note: This is a collection of technical procedures designed as an introduction to research for the student interested in the subject. Consideration of single topics is short and in many cases in syllabus form. Numerous bibliographical entries are cited to furnish sources of additional information.

SPRAGUE, RODERICK, AND HURLEY FELLOWS

Cercospora foot rot of winter cereals. Washington, D.C.: Government Printing Office, 1934. 24 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 428) \$0.10. 4848

Contents: Introduction. Review of literature. Symptoms of the disease. Geographic distribution and economic importance. Distribution according to soil types. Host range and varietal susceptibility. Pathological histology. The pathogene. Control measures. Summary. Literature cited.

Note: This bulletin, produced in cooperation with the Oregon, Washington, and Idaho Agricultural Experiment Stations, summarizes the results of investigations on the foot-rot disease caused by *Cercospora herpeticoides* Fron, which became a serious economic problem to growers of winter cereals in certain prairie sections of those three northwestern states. The disease is also known to occur in France. All wheat varieties of commercial importance, many varieties of barley and rye, and a number of grasses are susceptible to *cercospora* foot rot, whereas oats are nearly immune to the disease.

WELLMAN, FREDERICK LOVEJOY

Clubroot of crucifers. Washington, D.C.: Government Printing Office, 1930. 32 p. illus. 22 cm. (United States. Department of Agriculture. Technical bulletin no. 181) \$0.05. 4849

Contents: Introduction. Early history, importance, and geographical distribution of clubroot. Certain phases of the life history of the causal organism. Soil reaction in relation to clubroot. Liming for control of clubroot. Summary. Literature cited.

Note: The purpose of this bulletin is to report the results of several years' studies on the life history and control of *Plasmodiophora brassicae* Wor., the parasitic cause of the

destructive and widespread disease of crucifers known in the United States as clubroot and in the Old World as anbury, finger and toe, maladie digitoire, Kohlhermie, and kapoustnaya kila. The salient features of the malady and its causal organism are reviewed and methods of infection and control are discussed.

WELLMAN, FREDERICK LOVEJOY, AND DOROTHY J. BLAISDELL

Differences in growth characters and pathogenicity of fusarium wilt isolations tested on three tomato varieties. Washington, D.C.: Government Printing Office, 1940. 29 p. illus. 22 cm. (United States. Department of Agriculture. Technical bulletin no. 705) \$0.05. 4850

Contents: Introduction. Materials and methods. Variations found in culture types. Occurrence of saltations in cultures. Variations in pathogenicity of *Fusarium* selections. Pathogenicity of saltants. Discussion. Summary. Literature cited.

Note: The purpose of this bulletin is to report on studies of differences found in *Fusarium bulbigenum* var. *lycopersici* (Brushi) Wr. and R. that might explain the divergent results obtained with strains of wilt-tolerant tomatoes grown in some localities under apparently similar conditions. Studies were made on 30 random cultures of this fungus, which is the cause of the chief disease of the tomato in the United States. Virulence was tested on three varieties of tomatoes.

ZAUMEYER, WILLIAM JOHN

The bacterial blight of beans caused by *Bacterium phaseoli*. Washington, D.C.: Government Printing Office, 1930. 36 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 186) \$0.10. 4852

Contents: Introduction. History of the disease. Host plants. Distribution and economic importance. Symptoms. Moisture as a factor influencing infection. Transmission of bacterial blight. Relation of parasite to host. Cell-wall disintegration through bacterial action. Penetration of bacteria into the cotyledon. Varietal resistance. Summary. Literature cited.

Note: It is the purpose of this bulletin to review briefly the known features of the bean disease caused by *Bacterium phaseoli* EFS. and to give a detailed account of the writer's investigations dealing with the environmental factors that influence dissemination, infection, and varietal resistance, and especially with the relationship of the parasite to the host.

Insect Pests

BAKER, ARTHUR CHALLER, AND OTHERS

A review of studies on the Mexican fruitfly and related Mexican species, by A. C. Baker, W. E. Stone, C. C. Plummer, and M. McPhail. Washington, D.C.: Government Printing Office, 1944. 155 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 531) Paper, \$0.35. 4853

Contents: Introduction. Nature of the damage caused by the Mexican fruitfly. Native home of the Mexican fruitfly. Fruits attacked by the Mexican fruitfly in nature. Fruits infested by the Mexican fruitfly in the laboratory. Fruits unsatisfactory as hosts. Host preference. Host sequence. Studies on the larvae. Studies on the pupae. Studies on the adults. Surveys. Studies of other species of economic importance. Studies of fruitfly differences as related to differences in host habits. Summary. Literature cited. Manuscript reports cited.

Note: This publication summarizes the results of studies conducted in Mexico by the laboratory of the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture, located in Mexico City. Field studies were conducted in other places. Aside from the Mexican fruitfly (*Anastrepha ludens* Loew), studies were made and are here briefly described on *Pseudodacus pallens* Coq, *Lucumaphila sagittata* Stone, *Toxotrypana curvicauda* Gerst, and seven other species of *Anastrepha*.

BARBER, GEORGE WARE

Mineral oils, alone or combined with insecticides, for control of earworms in sweet corn. Washington, D.C.: Government Printing Office, 1944. 83 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 880) \$0.15. 4854

Contents: Summary. Introduction. Factors affecting earworm control. Methods of study. Vegetable oils used alone. Vegetable oils used with insecticides. Mineral oils used alone. Mineral oil used with insecticides. Influence of husk characters on earworm control. Effect of intensity of infestation on degree of control. Occurrence of dead larvae in oiled ears. Husk-boring earworms in oiled ears. Effect of insecticides on flavor of sweet-corn ears. Relation of oiling to pollination and kernel development. Effect of oil on germination. Commercial practicability of mineral-oil treatment. Literature cited.

Note: Investigations of the insecticidal control of the corn earworm (*Heliothis armigera* Hbn.) in sweet-corn ears, performed in Connecticut, New Jersey, and Florida from 1935 to 1941 are discussed in this bulletin.

CAMPBELL, FRANK LESLIE, AND FOREST RAY MOULTON, EDITORS

Laboratory procedures in studies of the chemical control of insects. Publication committee: Walter C. O'Kane, chairman, Frank L. Campbell, secretary, Frank H. Lathrop and others. Washington, D.C.: American Association for the Advancement of Science, 1943. 206 p. illus. 26 cm. (American Association for the Advancement of Science. Publication no. 20) \$4.00. 4855

Note: This volume is based on a symposium presented by the American Association of Economic Entomologists at a meeting of the American Association for the Advancement of Science in June, 1941. The original papers, many of which were revised and rewritten, have been supplemented by others prepared since the meeting. The material is grouped into three main divisions, the rearing of test insects, methods of testing insecticides against insects in the laboratory, and statistical methods. This latter section deals with the problem of statistical analyses of the results obtained from experiments. There is a 12-page bibliography, an index of scientific insect names, and one of common names.

CLAUSEN, CURTIS PAUL

Entomophagous insects. New York: McGraw-Hill Book Company, Inc., 1940. 688 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences; A. F. Shull, consulting editor) \$7.00. 4856

Contents: Hymenoptera. Diptera. Lepidoptera. Strepsiptera. Coleoptera. Hemiptera. Thysanoptera. Trichoptera. Mecoptera. Plecoptera. Neuroptera. Odonata. Corrodentia. Orthoptera. Dermaptera. Thysanura. References. Index.

Note: A comprehensive account of our knowledge of the parasitic and predacious representatives of the different orders and families of insects. Discusses in detail the host preferences, biology, habits, and immature stages of each family. The subject matter is restricted to the entomophagous groups and consequently those involved in human and animal diseases are not included. Emphasizes the exceptionally wide range in habits and form of immature stages which occurs even within small groups.

CLAUSEN, CURTIS PAUL, AND OTHERS

Further investigations of the parasites of *Popillia japonica* in the Far East, by C. P. Clausen, H. A. Jaynes, and T. R. Gardner. Washington, D.C.: Government Printing Office, 1933. 59 p. illus. 22 cm. (United States. Department

of Agriculture. Technical bulletin no. 366) \$0.05.

4857

Contents: Introduction. The parasites and their biology: Parasites of the adult beetle: Tachinidae. Pyrgotidae. Parasites of the larva: Dexiidae. Scoliidae. Miscellaneous Scoliidae. Rearing and shipping of Scoliidae. Natural enemies of the Scoliidae. Summary of parasite shipments to the United States. Agricultural and climatic conditions in China and India. Summary. Literature cited.

Note: This work supplements *The Parasites of Popillia japonica in Japan and Chosen (Korea), and their introduction into the United States*, by C. P. Clausen, J. L. King, and C. Teranishi, Washington, 1927, 56 p., illus. (United States Department of Agriculture Bulletin no. 1429), in which an account was given of the investigations of the Japanese beetle and its natural enemies in Japan and Chosen during the years 1920-1923. The present bulletin covers the work of the years 1924-1928 and presents additional information relative to the parasites previously listed, as well as accounts of other species found attacking the genus *Popillia* in China and Assam and other parts of the Far East, in addition to Japan and Chosen.

COTTON, RICHARD THOMAS

Insect pests of stored grain and grain products, identification, habits and methods of control. Minneapolis, Minn.: Burgess Publishing Company, 1941. 242 p. illus. 22 cm. \$3.00. 4858

Contents: The insect pests of stored grain and milled cereals. Controlling stored grain insects on the farm. Control of insects in grain stored in elevators and warehouses. The insect problem in flour mills. Practical control methods in the mill. Protecting flour after manufacture. Fumigants and fumigation. The common fumigants. Flour mill and warehouse fumigation. Fumigation in atmospheric vaults and vacuum chambers. Heat sterilization in the flour mill. Index.

Note: The life histories, habits, environmental needs, and methods of control of insect pests are treated in detail for farmers, grain elevator managers, wholesalers, jobbers, and grocers. A bibliography is given at the end of each chapter.

CRUMB, SAMUEL EBB, AND OTHERS

The European earwig, by S. E. Crumb, P. M. Eide, and A. E. Bonn. Washington, D.C.: Government Printing Office, 1941. 76 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 766) \$0.15. 4859

Contents: Introduction. Common name. Distribution. Food habits and economic importance. Description of the stages. Seasonal history. Life history and habits. Earwig parasites and predators. Control experiments. Summary. Literature cited.

Note: This bulletin contains a complete account of the European earwig (*Forficula auricularia* L.), which has become established in certain places in the United States, particularly in the Pacific Northwest.

DELONG, DWIGHT M.

Biological studies on the leafhopper *Empoasca fabae* as a bean pest. Washington, D.C.: Government Printing Office, 1938. 60 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 618) \$0.10. 4860

Contents: Introduction. Previous work. The insect. Closely related economic species previously confused with *Empoasca fabae*. Eastern species previously confused with *Empoasca fabae*. Characters distinguishing *Empoasca fabae* and closely related species. Distribution and abundance. Economic importance. Distribution in relation to climatic and physical factors. Distribution of other economic species of *Empoasca* in relation to climate and physical factors. Biological studies. A comparative study of *Empoasca fabae* and *E. abrupta* under Ohio conditions. Summary. Literature cited.

Note: This bulletin contains the more important data and conclusions obtained from studies made during the years 1926-1930 of the potato leafhopper (*Empoasca fabae* Harris) with special reference to its attack upon the bean plant.

FELT, EPHRAIM PORTER

Plant galls and gall makers. Ithaca, New York: Comstock Publishing Company, Inc., 1940. 364 p. illus. 23 cm. \$4.00. 4861

Contents: Galls and gall types. The principal gall producers. Economic importance. How galls are produced. Biology or life history of gall producers. Alternation of generations. The known agamic and bi-sexual forms of the American gall wasps. Insect and fungous galls. The distribution and abundance of gall insects. Gall insects in different parts of the world. Gall insect preferences for certain plant families. Gall insect preferences for host plants in America. Tabulation of plants and American insect galls. Natural checks. Collecting galls and rearing gall insects. Key to the galls of the various plant families. Bibliography. Index.

Note: This work is a rewritten version, with much additional matter, of the author's *Key to American insect galls*, Albany, N.Y., 1918. In this edition, it is a guide to the identification of the 2,000 varieties of plant galls found in North America. The galls are first classified according to their plant hosts, and are then separated by descriptive keys. Over 700 illustrations have been included. The book is of interest to amateur naturalists, botanists, and entomologists. There is a bibliography.

FERNALD, HENRY TORSEY, AND HAROLD H. SHEPARD

Applied entomology; an introductory textbook of insects in their relations to man. Fourth edition. New York: McGraw-Hill Book Company, Inc., 1942. 400 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences; L. J. Cole, consulting editor) \$3.50. 4862

Contents: Insects and other animals. The insect: its external structure. The insect: its internal structure. The development of insects. Economic importance of insects: natural control. Artificial control. Insecticides: stomach poisons. Contact insecticides: spray combination. Insect fumigants. The relationships of insects. Subclass Apterygota: orders Protura; Thysanura; Collembola. Subclass Pterygota: order Ephemera. Order Odonata. Order Isoptera. Order Orthoptera. Order Dermaptera. Order Plecoptera. Order Embiilina. Order Corrodentia: order Zoraptera. Order Mallophaga. Order Thysanoptera. Order Anoplura. Order Hemiptera. Order Homoptera. Order Coleoptera. Order Strepsiptera. Order Neuroptera. Order Trichoptera. Order Lepidoptera. Order Mecoptera. Order Diptera. Order Siphonaptera. Order Hymenoptera. Animals other than insects. Index.

Note: A widely used college text, which has also considerable value as a reference book. This edition contains new material on new methods of insect control and recently developed insecticides.

FREAR, DONALD ELISHA HARDING

Chemistry of insecticides and fungicides. New York: D. Van Nostrand Company, Inc., 1942. 300 p. illus. 23 cm. \$4.00. 4863

Contents: Introduction. Stomach poisons or protective insecticides: The arsenicals. Lead arsenate. Fluorine compounds and miscellaneous stomach poisons. Contact poisons or eradicant insecticides: Nicotine and pyrethrum. Rotenone and miscellaneous contact poisons. Sulfur and inorganic sulfur compounds. Oils. Fumigants. Fungicides: Copper compounds. Mercury compounds and miscellaneous fungicides. Spray supplements and residue removal: Wetting, spreading, and emulsifying agents. Spray residue removal. Analytical methods: Macro methods. Micro methods. Subject index. Author index.

Note: A useful reference tool for teachers and research workers in economic entomology and plant pathology. Deals with the composition, properties, and reactions of the various chemicals used to control insects and plant diseases, and the effect of these determines methods of application and limitations of these chemicals. Each chapter contains an extensive bibliography.

GAHAN, ARTHUR BURTON

The serphoid and chalcidoid parasites of the Hessian fly. Washington, D.C.: Government Printing Office, 1933. 148 p. illus. 22 cm.

(United States. Department of Agriculture. Miscellaneous publication no. 174) Paper, \$0.10. 4864

Contents: Introduction. General history. Host relationship. Superfamily Serphoidea: Family Platygasteridae. Superfamily Chalcidoidea: Family Callimomidae. Family Eurytomidae. Family Eupelmidae. Family Encyrtidae. Family Pteromalidae. Family Aphelinidae. Family Eulophidae. Other species recorded in literature as parasitizing the Hessian fly. Unpublished records that are considered doubtful.

Note: This publication deals with the hymenopterous parasites of the Hessian fly, *Phytophaga destructor* Say, the major pest of the wheat plant in the United States and similarly injurious to the wheat crop in Europe and other parts of the world. The literature regarding these parasites of the Hessian fly is upward of 200 separate articles in seven different languages. The object of this publication is to bring together, in the case of each species attacking the fly, a complete bibliography and review of the literature, a description together with illustrations that will make it possible to recognize the species, a list of its synonyms, and a short outline of what is known regarding its hosts, life history, and distribution. A total of 41 species are described; 35 species are known to parasitize the fly in America and 17 are known to attack it in Europe, 11 species being common to both continents.

GARDNER, THEODORE ROOSEVELT, AND L. B. PARKER

Investigations of the parasites of *Popillia japonica* and related Scarabaeidae in the Far East from 1929 to 1933, inclusive. Washington, D.C.: Government Printing Office, 1940. 36 p. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 738) \$0.10. 4865

Contents: Introduction. The parasites of *Popillia japonica* and their biologies. The parasites of related Scarabaeidae. Parasites on which no investigations were carried on during the period 1929-33. Rearing and shipping of Scoliidæ. Summary of parasite shipments to the United States. Summary. Literature cited.

Note: This pamphlet contains an account of the investigations on the parasites of the Japanese beetle originally begun in the Far East in 1920 (see Clausen, C. P., and others: *Further investigations of the parasites of Popillia japonica in the Far East*, see Index). Supplementing the previous publications on the subject, it describes the studies carried on during 1929-1933 in Japan, Chosen (Korea), India, and Taiwan (Formosa).

HERRICK, GLENN WASHINGTON

Insect enemies of shade-trees. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1935. 417 p. illus. 23 cm. \$4.50. 4866

Contents: The value of shade-trees and general method of protection from insect attack. The materials and apparatus for the control of tree and shrub insects. Suggestions for the treatment of weakened trees. Insect enemies of the ash, of the beech, of the birch, of the buckeye and horse-chestnut, of the catalpa, of the elm, of the ginkgo, of the hackberry, of the hickory, of the larch, of the linden, of the locust, of the magnolia, of the maple, of the mountain ash, of the oak, of the pine, of the poplar, of the sycamore, of the tree-of-heaven, of the tulip, of the tupelo and sweet gum, of the walnut, of the willow, of smaller trees and shrubs, of evergreens other than pines. Some miscellaneous insect enemies of trees and shrubs. Index of trees and shrubs. General index.

Note: The book's concern is mainly with the problem of preserving shade-trees from insect pests, but it discusses also the comparative value of familiar trees in regard to beauty, hardiness, adaptability, and immunity to injury or disease. Brief accounts of all pests found east of the Rocky Mountains, and most of those on the Pacific Coast, are given. The text is written in concise style, references are numerous, and there is a clear system of cross reference.

HOWARD, LELAND OSSIAN

A history of applied entomology (somewhat anecdotal) (with 51 plates). Washington, D.C.: The Smithsonian Institution, 1930. 564 p. illus.

24 cm. (Smithsonian miscellaneous collections. Vol. 84. Publication no. 3065) \$2.25. 4866a

Contents (abridged): Part I, North America; United States. Canada. Mexico. Part II, Europe: Old European writers on entomology. The Phylloxera of the grapevine and its influence on European applied entomology. Great Britain, Ireland, France and other countries. Part III, Asia. Part IV, Africa. Part V, Australia and the Pacific. Part VI, South and Central America and the West Indies. Part VII, Medical entomology. The international use of parasites. The practical use of predatory and parasitic insects. Importance of the insect enemies of weeds. Conclusion. Index.

Note: A fairly comprehensive record of economic or applied entomology, summarizing the work and accomplishments of numerous scientists and institutions throughout the world in the control of insects injurious to plants of commercial value. As indicated by the title, the account is presented as an informal history, based on the author's personal contacts in many of the countries treated and upon the literature of the field, rather than as a critical scientific evaluation of the results. A brief history of entomological work in each country precedes the account of modern methods. Included also is a chapter on medical entomology and insect-borne diseases. There are about 250 photographs of leading entomological workers of various countries.

HOWARD, NEALE FREDERICK, AND OTHERS

Insecticides and equipment for controlling insects on fruits and vegetables, by N. F. Howard, C. A. Weigel, C. M. Smith, and L. F. Steiner. Washington, D.C.: Government Printing Office, 1943. 52 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 526) Paper, \$0.10. 4867

Contents: Introduction. Precautions in using insecticides. Spray residues on plants. Injury to the plants by insecticides. Arsenic trioxide. Barium carbonate. Barium fluosilicate. Bentonite. Beta naphthol. Bordeaux mixture. Calcium arsenate. Calcium cyanide. Carbon disulfide. Chloropicrin. Cryolite. Diluents or carriers. Dinitro compounds. Essential oils. Ethylene dichloride. Fish oil. Hellebore. Hot-water treatment. Hydrated lime. Kerosene emulsion. Lead arsenate (acid). Lead arsenate (basic). Liquid lime-sulfur and dry lime-sulfur. Magnesium arsenate. Mercuric chloride. Mercurous chloride. Metaldehyde (slug bait). Methyl bromide. Mineral oil. Naphthalene. Nicotine. Nicotine bentonite. Nicotine decoctions (home-made). Nicotine dusts. Nicotine for fumigation. Oil dusts. Paradichlorobenzene. Paris green. Phenothiazine. Phosphorus paste. Poisoned baits. Pyrethrum, or insect powder. Rotenone-containing roots. Soap sprays. Sodium arsenate. Sodium cyanide. Sodium fluoride. Sodium fluosilicate. Sulfur. Tar distillate. Tartar emetic. Thiocyanates (organic). Tobacco dust. Vegetable oils. Wetting or spreading agents. Zinc arsenate. Preparation of sprays and dusts. Quantity of sprays or dusts to apply. Spraying and dusting equipment. Care of insect-control devices. When and how to apply insecticides. First-aid suggestions in cases of insecticidal poisoning. Procurement of insecticides and subsidiary material.

Note: This publication describes the common insecticides and their use. It deals with the nature of the chemicals used in insect control and gives information about how to prepare them for use. It is intended to be useful to market gardeners, fruit growers, nurserymen, florists, and others concerned with the control of insects by insecticides.

INSECTS OF GUAM. I. Honolulu, Hawaii: Bernice P. Bishop Museum, 1942. 218 p. illus. 25 cm. (Bernice P. Bishop Museum. Bulletin 172) \$2.50. 4867a

Note: This bulletin consists of 27 papers written by various entomologists. The introduction and several of the articles were contributed by Otto H. Swezey. The material here reported was collected on an entomological survey of Guam conducted in 1936 under the auspices of the Hawaiian Sugar Planters' Association. The survey was made with the purpose of studying insects of economic importance associated with the various crops grown in Guam, and also insects affecting man and domestic animals. Further studies will be published in a second volume.

KOFOID, CHARLES ATWOOD, EDITOR

Termites and termite control. Charles A. Kofoid, editor-in-chief; S. F. Light, A. C. Horner,

Merle Randall, W. B. Herma and Earl E. Bowe. Second edition, revised. Berkeley: University of California Press, 1934. 795 p. illus. 24 cm. \$5.00. 4867b

Contents (abridged): Biological backgrounds of the termite problem. Constitution and development of the termite colony. External anatomy of termites. Association of termites and fungi. Termite fauna of North America. Life history of *Kalotermes minor*. Wood preservation and protective treatments. Poison dusts. Wood preference tests. Prevention and repair of termite damage. Power, telephone, and telegraph lines. Railroad structures. Federal quarantine laws.

Note: A report to the Termite Investigation Committee prepared by 34 specialists in the fields of entomology, zoology, chemistry, engineering, and wood utilization. The volume discusses, in a comprehensive manner, the termites of the United States, Mexico, Canal Zone, West Indies, Hawaii, and Philippine Islands, their biology, destructive habits, means of extermination, methods of control, and the repair of termite damage. It is intended primarily for architects, building inspectors, contractors, users of wood, and biologists. There is a nine-page bibliography but no index.

LAAKE, ERNEST WILLIAM, AND OTHERS

The chemotropic responses of the house fly, the green-bottle flies, and the black blowfly, by E. W. Laake, D. C. Parman, F. C. Bishopp, and R. C. Roark. Washington, D.C.: Government Printing Office, 1931. 11 p. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 270) \$0.05. 4868

Contents: Introduction. Procedure. Materials used. Results of the tests. Discussion of the results. Attractants. Suggestions of practical import. Summary.

Note: This bulletin publishes the results of studies on repellents carried on over a number of years to determine the chemotropic responses of *Musca domestica*, *Lucilia* spp., and *Phormia regina* to a number of organic and inorganic materials, alone and in combinations. One hundred ninety-two tests are presented in tabular form and briefly discussed.

METCALF, CLELL LEE, AND W. P. FLINT

Destructive and useful insects, their habits and control. Second edition. New York: McGraw-Hill Book Company, Inc., 1939. 981 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences) \$7.50. 4869

Contents: Insects as enemies of man. The value of insects to man. The external morphology of insects. The internal anatomy and physiology of insects. The mouth parts of insects. Development and metamorphosis. The place of insects in the animal kingdom. The orders of insects. Insect control. Apparatus for applying insecticides. Insects injurious to corn. Insects injurious to small grains. Insects injurious to legumes. Cotton insects. Tobacco insects. Insects injurious to vegetable gardens and truck crops. Insects injurious to deciduous fruits and bush fruits. Citrus insects. Insects attacking shade trees and shrubs. Insect pests of greenhouse plants and flower gardens. Household insects and pests of stored grains, seeds, and cereal products. Insects injurious to domestic animals. Insects that attack and annoy man and affect his health.

Note: A thorough treatment of the essentials of economic entomology, intended both as a text for beginning students and as a guide for practical farmers, gardeners, fruit growers, etc. In the discussion of each insect the authors cover (1) the recognition, marks, and type of injury; (2) the life history with descriptions of the stages and significant habits; (3) control measures.

MEYERS, MARION THOMAS, AND OTHERS

Experiments on breeding corn resistant to the European corn borer, by Marion T. Meyers, L. L. Huber, C. R. Neiswander, F. D. Richey, and G. H. Stringfield, in cooperation with the Ohio Agricultural Experiment Station and the

Ohio State University. Washington, D.C.: Government Printing Office, 1937. 30 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 583) \$0.10. 4870

Contents: Introduction. Review of literature. Material and methods. The experiments. Discussion. Conclusions. Summary. Literature cited.

Note: Experiments were carried on, principally in Ohio, from 1926 to 1932 to see what could be done in producing strains of corn that would be more suitable for growing under conditions of infestation by the European corn borer (*Pyrausta nubilalis* Hb.). The results are reported in this bulletin.

PEAIRS, LEONARD MARION

Insect pests of farm, garden, and orchard. Fourth edition. New York: John Wiley & Sons, Inc., 1941. 549 p. illus. 23 cm. \$4.00. 4871

Contents: Introduction. The structure and development of insects. Classification of insects. Insect control: climatic and biological. Insect control: general, mechanical, cultural. Insect control: chemical. Insects generally injurious to crops. Insects injurious to grasses and cereal grains. Insects injurious to cotton. Insects injurious to leguminous crops. Insects injurious to solanaceous crops. Insects injurious to garden crops. Insects injurious to small fruits. Insects injurious to the grape. Insects injurious to orchard fruits. Insects injurious to citrus fruits. Insects injurious to stored products and household goods. Insects injurious to man and domestic animals. Index.

Note: Offers a concise summary of the groups of insects and their classification, with particular attention devoted to those groups which include important pests, predators, and parasites. The numerous insecticides developed in recent years are briefly discussed and evaluated. Particular stress is given to the utilization of natural control agencies, to mechanical control methods, and to the insecticides which do not leave undesirable residues.

PYENSON, LOUIS

Pest control in the home garden. New York: The Macmillan Company, 1944. 190 p. illus. 21 cm. \$2.00. 4872

Contents: Foreword. Preface. Introduction. The techniques of pest control. The ammunition of pest control. An ounce of prevention. Animal pests in gardens. Some general garden pests. Pests of tree fruits. Pests of small fruits. Pests of vegetables. Your plants' friends. Possible health hazards in your garden. Index.

Note: A simple direct treatment of the everyday problems of gardening, intended primarily for the amateur but useful to the experienced gardener. The book offers practical information on kinds of pests, the latest and most effective as well as the older methods of controlling pests. Line drawings illustrate the use of equipment, and the book tells what kinds of sprays should be applied and when to use them. There are 111 photographs and line drawings for identifying all kinds of pests.

QUAYLE, HENRY JOSEF

Insects of citrus and other subtropical fruits. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1938. 583 p. illus. 23 cm. \$5.00. 4873

Contents: Introduction. Subtropical fruits and the important insects that attack them. Major insects and mites that attack citrus fruits. Predacious and parasitic insects that attack citrus and other subtropical fruit pests. Minor insects and mites that attack citrus fruits. Insects and mites that attack the avocado, the vinifera grape, the Persian walnut, the almond, the pecan, the fig, the olive, the date. Insects that attack the oriental persimmon, pomegranate, and sweet cherry. Rodents, nematodes, and snails that attack citrus and other subtropical fruit trees. Fumigation. Spraying and dusting. Domestic plant quarantines that pertain to subtropical fruit insects. Index.

Note: The biology and control of pests which have proved economically significant by their attacks on subtropical fruits are treated in this book. Citrus growers, fruit farmers, horticulturists, entomologists, Federal, state and county officials will find it useful in their work; for students and teachers, the keys, descriptions, and illustrations will be valuable as a means of identification. The expansion of the citrus fruit industry, with its peculiar susceptibility to insect attack, makes this an important field for extensive experiments in control. Professor

Quayle presents an authoritative record of methods which have been successfully used.

SHEPARD, HAROLD HENRY

The chemistry and toxicology of insecticides. Minneapolis, Minn.: Burgess Publishing Co., 1939. 383 p. illus. 27 cm. \$4.00. 4874

Contents: History of insecticides. Principles of insecticide toxicology. Quantitative toxicology of insecticides. Stomach poisons: Arsenicals. Non-arsenical inorganic compounds. Contact insecticides: Sulfur and copper compounds. Adjuvants, oils and their derivatives. Plant derivatives and related compounds. Insect fumigants. Miscellaneous chemical control. Appendix. Index.

Note: A text and reference manual for college students of entomology and graduate workers in the field. In addition to data on the chemical, physical, and toxicological aspects of the subject, there is also information regarding the history of insecticides and the development of industrial products such as sprays, powders, and repellents. The entire literature of the field is summarized and hundreds of methods and processes of insecticide preparation and control of pests under various conditions are described. Bibliographical lists are included.

SHOTWELL, ROBERT LESLIE

Evaluation of baits and bait ingredients used in grasshopper control. Washington, D.C.: Government Printing Office, 1942. 51 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 793) \$0.15. 4875

Contents: Introduction. History of the use and testing of poisoned baits. Methods of evaluating baits. Statistical methods for analyzing data. Bait materials. Difficulty in appraisal of results because of population changes. Precautions in handling poisoned bait. Bait mixing. Bait spreading. Function of the annual grasshopper surveys in control programs. Bait applications in relation to habits of the grasshoppers and to farm practices. Reduction of baiting by soil cultivation. Summary. Literature cited. Index to bait ingredients.

Note: The purpose of this bulletin is to furnish definite information regarding the value of the various substances used in poisoned bait for grasshoppers. It assembles all the available experimental data that lend themselves to statistical analysis, both those obtained by the writer and his coworkers over a period of years and published and unpublished results of other investigators.

SNELLING, RALPH OWEN, AND OTHERS

Resistance of sorghums to the chinch bug, by Ralph O. Snelling, Reginald H. Painter, John H. Parker, and W. M. Osborn, in cooperation with the Kansas Agricultural Experimental Station. Washington, D.C.: Government Printing Office, 1937. 56 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 585) \$0.15. 4876

Contents: Introduction. Review of literature. Life history of the chinch bug with relation to control measures. Effect of chinch bug injury upon the distribution of kafir and milo. Location, conditions, and methods of experimentation. Experimental results. Summary. Literature cited.

Note: The data presented in this bulletin were gathered at Manhattan, Kansas, during 15 years and at Lawton, Oklahoma, during 5 years. They deal with the possibility of reducing chinch bug injury to sorghums by utilizing host resistance.

STICKNEY, FENNER SATTERTHWAITE

The external anatomy of the *Parlatoria* date scale, *Parlatoria blanchardi* Targioni Tozzetti, with studies of the head skeleton and associated parts. Washington, D.C.: Government Printing Office, 1934. 68 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 421) \$0.10. 4877

Contents: Introduction. Symbols used in illustrations. External anatomy. The head skeleton and associated parts. Summary. Literature cited.

Note: This bulletin is an anatomical description of the scale insect *Parlatoria blanchardi* Targioni Tozzetti, considered the most dangerous insect enemy of the date palm. All stages of its external anatomy, male and female, are described in order to establish in detail the identity of this insect.

STICKNEY, FENNER SATTERTHWAITE

The external anatomy of the red date scale, *Phoenicococcus marlatti* Cockerell, and its allies. Washington, D.C.: Government Printing Office, 1934. 163 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 404) \$0.15. 4878

Contents: Introduction. Illustrations. Host plants and geographical distribution. Comparative morphology. Classification. Relation to other coccids. Literature cited.

Note: This bulletin describes the external anatomy of the different stages, male and female, of *Phoenicococcus marlatti* Cockerell, one of the two best-known scale-insect pests of the date palm. Its classification is also discussed, and there is description of some of its close relatives.

SWEETMAN, HARVEY LEROY

The biological control of insects, with a chapter on weed control. Foreword by L. O. Howard. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1936. 461 p. illus. 23 cm. \$3.75. 4879

Contents: The theoretical basis of biological control. The use of resistant hosts. The use of microorganisms, bacteria and fungi. The use of microorganisms, viruses and Protozoa. The use of parasitic invertebrate animals, Nematelmintes. Parasitic invertebrate animals, Hexapoda. The use of predatory invertebrate animals, Arachnida and Hexapoda. Some biological relations of insect parasites and predators. Factors to be considered in the utilization of insect parasites and predators. The introduction of insect parasites and predators. The use of predatory vertebrate animals. The results of biological control experiments against animals. The biological control of pest plants. Glossary. References. Index.

Note: The author has brought together and systematized monographic literature on different aspects of this subject. The book is of interest to all students of the biological sciences. Also it is suitable for use as a textbook in college courses in the subject and as a reference book for entomologists.

VANCE, ARLO MCCRILLIS

The biology and morphology of the braconid *Chelonus annulipes* Wesm., a parasite of the European corn borer. Washington, D.C.: Government Printing Office, 1932. 48 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 294) \$0.10. 4880

Contents: Introduction. Systematic position and identification. Previous study of species of *Chelonus*. Geographical distribution. Limitation of the species. Economic importance. Host relations. Description. Biology. Seasonal history. Hyperparasites. Methods of collection and shipment. Summary. Literature cited.

Note: Contained in this pamphlet is a study begun in the summer of 1929 of *Chelonus annulipes*, an insect which is one of six braconids known as a parasite of the European corn borer (*Pyrausta nubilalis* Hübn.).

WEISS, HARRY BISCHOFF, AND RALPH H. CARRUTHERS

Insect enemies of books. New York: The New York Public Library, 1937. 63 p. illus. 25 cm. Paper, \$0.30. 4880a

Contents: The more important insect enemies of books, by Harry B. Weiss. Insect enemies of books: an annotated bibliography to 1935, compiled by Ralph H. Carruthers and Harry B. Weiss. Index.

Note: This work consists of a 16-page article describing the principal insect enemies of books and a 37-page bibliography listing with brief annotations about 500 articles and books dealing with the subject.

WHITE, WILLIAM HENRY, AND S. P. DOOLITTLE

A victory gardener's handbook on insects and diseases. Washington, D.C.: Government Printing Office, 1944. 30 p. illus. 27 cm. (United States. Department of Agriculture. Miscellaneous publication no. 525) Paper, \$0.10. 4881

Contents: Necessity of pest control by the victory gardener. Precautions to be taken with insecticides and fungicides. Insects and diseases—description, damage, distribution, and remedies. General methods of insect and disease control. How to prepare insecticides and fungicides for garden-pest control. Tables of measures. Quantity of sprays or dusts to apply. Spraying and dusting equipment.

Note: This publication describes in simplified form the common insects and diseases attacking each of 31 garden vegetables and recommended methods of control for each, with pictures of the insects. Control methods described do not include use of pyrethrum and rotenone, supplies of which were limited at the time of publication.

Field Crops

ALEXANDER, ELMER ROSS, AND OTHERS

Southern field-crop enterprises, including soil management, by E. R. Alexander, W. S. Newman, D. M. Clements [and others]. Edited by Kary C. Davis. Second edition, revised. Chicago: J. B. Lippincott Company, 1937. 574 p. illus. 22 cm. (Profitable enterprise series) \$2.40. 4882

Contents: Soil and other plant relationships. Cotton enterprise. Corn enterprise. Small-grain enterprise. Sorghum enterprise. Grass enterprise. Clover enterprise. Alfalfa enterprise. Peanut enterprise. Soybean and cowpea enterprises. Annual legume enterprise. Irish potato enterprise. Sweet potato enterprise. Tobacco enterprise. Rice enterprise. Sugarcane enterprise. Asparagus enterprise. Salad-crop and cole-crop enterprises. Root-crop and bulb-crop enterprises. Bean enterprise. Tomato, eggplant, and pepper enterprises. Melon enterprises. Conservation and improvement of soils. Land drainage. Preventing soil erosion—terracing. Appendix. Index.

Note: A textbook which divides twenty-one agricultural enterprises suitable for the southern United States into jobs or teaching units according to approved plans of job analysis. These jobs are in turn analyzed into problems for study and discussion. Activities to be performed by students are suggested, aims are given in each job, and local inquiry questions are offered. In this second edition, the treatments have been revised and improved, and new sections added on soils and other plant relationships, conservation and improvement of soils, land drainage, and preventing soil erosion.

ARTSCHWAGER, ERNST FRIEDRICH

Contribution to the morphology and anatomy of guayule (*Parthenium argentatum*). Washington, D.C.: Government Printing Office, 1943. 34 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 842) \$0.15. 4883

Contents: Introduction. Materials and methods. Gross morphology. Morphology of flowers and seed. Seedling structure. Anatomy of mature stem. Anatomy of root. Structure of the peduncle. Structure of the leaf. Origin and storage of rubber. Anatomical structure in relation to rubber content and type. Literature cited.

Note: This bulletin aims to consider critically and briefly the guayule (*Parthenium argentatum* Gray) plant in its entirety, laying emphasis upon structural features that have a direct bearing on breeding to secure maximum yield of rubber.

ARTSCHWAGER, ERNST FRIEDRICH, AND RUTH C. MCGUIRE

Contribution to the morphology and anatomy of the Russian dandelion (*Taraxacum kok-saghyz*). Washington, D.C.: Government Printing Office, 1943. 24 p. illus. 22 cm. (United States. Department of Agriculture. Technical bulletin no. 843) \$0.10. 4884

Contents: Introduction and discussion. Materials and methods. Gross morphology. Morphology of flower and seed. Seedling structure. Anatomy of the mature tap root. Anatomy of filiform lateral rootlets. Structure of the leaf. Structure of the scape. Comparison with local dandelion. Literature cited.

Note: The investigation reported in this bulletin was undertaken to obtain a better conception of the detailed structure of the Russian dandelion (*Taraxacum kok-saghyz* Rodin) plant as a whole and of the elements of the secondary phloem in particular to serve as a background for research in the breeding of this rubber-producing plant.

BEAN, LOUIS HYMAN

Crop yields and weather. Washington, D.C.: Government Printing Office, 1942. 131 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 471) \$0.40. 4885

Contents: Introduction. Percentage of normal precipitation: Monthly records (in maps of the United States). Quarterly records (in maps of the United States). Precipitation departures from normal, monthly by states. Temperature departures from normal, monthly by states. Crop yields per acre: Wheat. Corn. Oats. Rye. Flaxseed. Barley. Rice. Potatoes. Sweet potatoes. Hay. Tobacco. Cotton.

Note: This is a joint publication of the United States Bureau of Agricultural Economics, Agricultural Marketing Service, and Weather Bureau, written by the Head Agricultural Economist. Crop yields per acre by states and monthly data of temperature and rainfall by states are presented in compact form year by year for about half a century.

BENNETT, CHARLES ABEL, AND FRANCIS L. GERDES

Effects of gin-saw speed and seed-roll density on quality of cotton lint and operation of gin stands. Washington, D.C.: Government Printing Office, 1936. 40 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 503) \$0.10. 4886

Contents: Introduction. Purpose of study. Materials and methods: Seed cottons. Ginning procedure. Moisture and quality determinations. Statistical analyses. Results and observations: Quality of lint. Ginning time and lint turn-out. Monetary value of lint. Power requirements and energy consumption. Summary and conclusions. Literature cited. Appendix: Basic tables showing the average values for samples ginned at different saw speeds and seed-roll densities.

Note: This bulletin presents facts and figures to show the optimum speed for gin-saw operation. It describes studies made to determine the relative influence of gin-saw speed and seed-roll density on the quality of ginned lint and on the ginning capacity, power requirement, and energy consumption during ginning, and to show the losses in monetary value of the lint that may be associated with tight seed-roll ginning.

BOSWELL, VICTOR RICKMAN, AND OTHERS

Studies of the culture and certain varieties of the Jerusalem artichoke, by Victor R. Boswell, C. E. Steinbauer, M. F. Babb, W. L. Burlison, W. H. Alderman, and H. A. Schoth. Washington, D.C.: Government Printing Office, 1936. 70 p. 23 cm. (United States. Department of

Agriculture. Technical bulletin no. 514) \$0.10. 4887

Contents: Introduction. Plan of investigation. Environmental conditions. Statistical analysis of data. Studies of varieties. Size of seed piece. Time of planting. Depth of planting. Planting distances. Harvesting tops as for silage. Eradication of volunteer growth. Summary and conclusions. Brief cultural recommendations. Literature cited.

Note: This bulletin reports the results of cooperative investigations of 20 varieties of the Jerusalem artichoke (*Helianthus tuberosus* L.) carried out in different parts of the United States between 1930 and 1933 and certain cultural practices relating to the growing of the plant. The investigations resulted not only in obtaining practical information on the growing of the Jerusalem artichoke, but also in adding to the knowledge of the response of the plant to different environments.

BROWN, HARRY BATES

Cotton; history, species, varieties, morphology, breeding, culture, diseases, marketing, and uses. Second edition. New York: McGraw-Hill Book Company, Inc., 1938. 592 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences: L. J. Cole, consulting editor) \$5.00. 4888

Contents: History of cotton and the cotton industry. Taxonomy of the cotton plant. Cultivated varieties of cotton. Cotton plants. Physiology of the cotton plant. Reproduction in the cotton plant. Cotton fibers. Variation, heredity, and correlation of characters in cotton plants. Cotton breeding. Chemistry of the cotton plant. Fertilizers, manures, and rotations for cotton. Cotton soils and climate. Cotton culture. Fungous, bacterial, and other diseases of cotton. Cotton insects. Cotton harvesting. Cotton ginning. Cotton classing. Cotton marketing. Cotton exchanges. Economics of cotton products. Cotton seed products and oil-mill processes. Uses and spinning qualities of various kinds of cotton. Making cotton cloth. Cotton statistics. Index.

Note: A treatment of the fundamental facts concerning cotton, including the botanical species, agricultural varieties, morphology, physiology, reproduction, and heredity of the plant. The production and marketing are also discussed. In this second edition the progress made in cotton research up to 1938 is reflected. Parts of nearly all chapters have been rewritten and some new material added.

CARTTER, JACKSON LEAPHART, AND T. H. HOPPER

Influence of variety, environment, and fertility level on the chemical composition of soybean seed. Washington, D.C.: Government Printing Office, 1942. 66 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 787) \$0.15. 4889

Contents: Introduction. Effect of variety, location, and season on yield and composition of soybean seed: Materials and methods. Climatological data. Yield. Size of seed. Protein content. Oil content. Iodine number. Total ash content. Phosphorus content. Potassium content. Calcium content. Total sugar content. Crude fiber content. Unsaponifiable matter in crude soybean oil. Effect of variety, fertility level, and season on the yield and composition of soybean seed: Materials and methods. Climatological data. Yield. Size of seed. Protein content. Oil content. Iodine number. Summary and conclusions. Literature cited.

Note: The experiments described in this bulletin were conducted under different conditions of climate and soil in the five leading soybean-producing states of the north central part of the United States during the five seasons 1936-1940. The purpose of the investigations was to determine the influence of variety and environment on the chemical composition of the seed produced as an aid in breeding and testing new varieties of soybeans for industrial utilization. Ten representative soybean varieties were studied.

COX, JOSEPH FRANK, AND LYMAN E. JACKSON
Crop management and soil conservation. New York: John Wiley & Sons, Inc., 1937. 610 p.

illus. 21 cm. (The Wiley farm series, ed. by A. K. Getman and C. E. Ladd) \$2.75. 4890

Contents (abridged): Balancing crop production. Surveying crop production from the farm management standpoint. The growth and maturing of crop plants. The nature of soils. Fertilizing, manuring and liming field crops. Securing the best crop varieties. Growing seed on the farm. Growing crops in rotation. Planting and cultivating crops. Harvesting and storing crops. Marketing crops and Federal programs for agriculture. Controlling crop diseases. Controlling insect pests. Controlling weeds. Planning improvements in crop management and soil conservation programs for specific farms. Corn growing. Wheat and rye growing. Oats, barley, buckwheat, and flax growing. Sorghum growing. Growing soybeans and cowpeas. Growing the clovers. Alfalfa and sweet clover growing. Growing lespedeza and other legumes. Growing grasses for hay and pasture. Managing pastures. Growing animal grasses and legumes for hay, pasture, green manuring, and cover-crop purposes. Potato growing. Bean growing. Sugar-beet growing and the growing of other root crops. Growing special field-truck crops. Growing home food and feed crops. Appendix. Index.

Note: It is the primary object of this book, in dealing with specific crops, to present in a simple way the major operations that will enable the grower to raise and market his crops successfully. Practices that are effective in reducing the cost of production, improving crop qualities, maintaining fertility, and marketing effectively are given particular emphasis. The development of a major national program directed toward the balancing of crop production and the conservation of soils is given an important place in the discussion. Bibliographies are included with most chapters.

COX, JOSEPH FRANK, AND LYMAN E. JACKSON

Field crops and land use. New York: John Wiley & Sons, Inc., 1942. 473 p. illus. 23 cm. \$3.75. 4891

Contents: Part I, Agriculture and American prosperity and strength. Classifying field crops. Crop management to conserve agricultural resources. Crop adaptations. Planning crop rotations for the farm. Maintaining and improving soil fertility. Soil conservation—plowing, fitting and cultivating the soil. Cover, green-manuring and supplementary feed crops. Managing pastures and meadows. Grassland agriculture. Controlling weeds. Controlling crop pests. Seed and seed growing. Producing a home-farm and feed supply. Growing feed and cover crops for wildlife. Looking forward. Part II, Corn. Wheat and rye. Oats and barley. Sorghums and millet. Grasses for hay and pasture. Alfalfa and sweet clover. Red, alsike, and white clovers. Soybeans and field beans. Other legumes. Cotton. Potatoes. Sweet potatoes. Tobacco. Buckwheat, flax, rape, rice and sunflowers. Sugar beets and other root crops. Bibliography. Appendix. Index.

Note: A unified picture of the advances of recent years toward efficient farming, agricultural adjustment, and conservation. It includes the work of the agricultural experiment stations of both land-grant colleges and the United States Department of Agriculture in developing and improving crop variety and in improving practices of crop and soil management. Stress is laid on the program of cooperation between farmers and the state extension services and the Federal Government agencies. Careful attention is given to the relationship of crop growing to land use. There is considerable material on crop adaptations, land use, soil conservation, rotation planting, new crops and varieties, and new agencies influencing crop production.

DAWSON, JAMES ROBERT, AND OTHERS

Sudan grass as hay, silage, and pasture for dairy cattle, by J. R. Dawson, R. R. Graves, and A. G. Van Horn. Washington, D.C.: Government Printing Office, 1933. 28 p. illus. 22 cm. (United States. Department of Agriculture. Technical bulletin no. 352) \$0.05. 4892

Contents: Introduction. Plan of investigations. Field experiments with Sudan grass cut at different stages of maturity. Chemical composition and protein content. Yields of dry matter and protein per acre. Feeding experiments with hay. Feeding Sudan-grass silage in comparison with Sudan-grass hay for milk production. Value of Sudan-grass pasture for milk production: Value of Sudan-grass pasture in comparison with Sudan-grass hay. Summary and conclusions.

Note: Sudan grass is an important hay and pasture crop of the Middle West and Southwest because it is drought and heat resistant. This bulletin gives the results of three years' experi-

ments at the Woodward (Oklahoma) Dairy Experiment Station on the yield, chemical composition, and comparative feeding value for milk production of Sudan-grass hay cut at four different stages of maturity.

DAWSON, JAMES ROBERT, AND OTHERS

Yield, chemical composition, and feeding value for milk production of alfalfa hay cut at three stages of maturity, by J. R. Dawson, D. V. Kopland, and R. R. Graves. Washington, D.C.: Government Printing Office, 1940. 52 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 739) \$0.10. 4893

Contents (abridged): Introduction. Review of the literature. Experimental procedure. Climatic data. Growth of alfalfa on the initial-, half-, and full-bloom plots. Quality and yield of hay obtained from cuttings at different stages. The digestion trials. The feeding trials with dairy cows. Comparative costs of producing the hay. Summary and conclusions. Literature cited.

Note: Since alfalfa hay is widely used for milk production, it is important to know what effects cutting the crop at various stages of maturity might have on the duration of the stand or on the total yield of feed. It is also important to know whether cutting the crop at any particular stage of maturity would improve its milk-producing value enough to compensate for any adverse effects on the stand or yield. This bulletin gives the results of an investigation carried on between 1935 and 1938 at the United States Department of Agriculture Dairy Field Station, Huntley, Montana, in which alfalfa hay was cut at three different stages of maturity and fed to dairy cows as the sole ration throughout the lactation period.

DEWEY, LYSTER HOXIE

Fiber production in the western hemisphere. Washington, D.C.: Government Printing Office, 1943. 95 p. illus. 25 cm. (United States. Department of Agriculture. Miscellaneous publication no. 518) \$0.30. 4894

Contents: Introduction. Classification of plant fibers. General observations on hard and soft fibers. Names of fibers and fiber plants. Long or multiple-celled fibers: Hard or leaf fibers. Palm and palmlike fibers. Soft or bast fibers. Short or one-celled fibers. Miscellaneous fibers. Bibliography.

Note: This publication treats of plant fibers other than cotton and flax that are now produced commercially in the western hemisphere and includes brief notes about others produced on a smaller scale. Of each of 46 fibers are given descriptions of the plant, its range, its growth, preparation, and use. There are 74 illustrations from photographs. Those who wish this material in Spanish are referred to the same author's *Fibras vegetales y su producción en América*, translated by Maria A. Ruisánchez Masters. Washington, D.C.: Unión Panamericana, Oficina de Cooperación Agrícola, 1941. (Publicación agrícola nos. 137-140) 101 p. illus.

DILLMAN, ARTHUR CHARLES, AND T. H. HOPPER

Effect of climate on the yield and oil content of flaxseed and on the iodine number of linseed oil. Washington, D.C.: Government Printing Office, 1943. 69 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 844) \$0.15. 4895

Contents: Introduction. Cooperation. Review of literature. Experimental methods. Description of varieties. Physical and chemical analyses. Experimental results. Climatic factors. Relation between climatic factors and the yield and composition of flax seed and linseed oil. Long-time records at Fargo, North Dakota. Fatty acid analysis of linseed oil. Discussion. Summary. Literature cited.

Note: The experiments reported in this pamphlet were undertaken to determine the effect of climate or weather, especially of temperature and rainfall, on the yield and oil content of flaxseed and the quality of linseed oil produced under various conditions in the United States and Canada. Four varieties of

seed flax (linseed) were grown from one to ten years at 54 North American field stations, extending from Alaska to Mexico and Nova Scotia to Oregon. Complete reports on the experiments are given.

GERDES, FRANCIS LEO, AND CHARLES A. BENNETT

Effect of artificially drying seed cotton before ginning on certain quality elements of the lint and seed and on the operation on the gin stand. Washington, D.C.: Government Printing Office, 1936. 62 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 508) \$0.10. 4896

Contents: Introduction. Purposes of study. Cottons, equipment, and methods used: Seed cottons. Drying equipment and gin machinery. Methods. Results and discussion: Moisture in seed cotton as related to preparation of ginned lint. Weight of seed cotton and of ginned lint as affected by artificial drying. Quality of ginned lint as affected by artificially drying seed cotton. Monetary value of ginned lint as affected by artificially drying seed cotton. Germination and weight of cotton seed as affected by artificially drying seed cotton. Certain mechanical elements of ginning as affected by artificially drying seed cotton. Other advantages of artificially drying green, damp, or wet seed cotton. Summary. Literature cited. Appendix: Basic tables showing absolute values of paired undried and dried samples.

Note: Using 69 American upland cottons selected from the 1931, 1932, and 1933 crops in nine of the southern states from Georgia and the Carolinas to Texas to represent a wide range of seed-cotton characteristics, and employing the vertical drier, a series of tests was conducted, of which the results are printed in this bulletin, to determine: (1) the relationships and the interrelationships between the moisture content of seed cotton, the resulting quality of ginned lint, the amount of moisture that may be removed by artificial drying without reduction of fiber quality, the desirable mechanical operation of the gin stand when handling cottons of different moisture content, and (2) the proper drying temperatures for cottons of different moisture content.

HUTCHESON, THOMAS BARKSDALE, AND OTHERS

The production of field crops, a textbook of agronomy, by T. B. Hutcheson, T. K. Wolfe, and M. S. Kipps. Second edition. New York: McGraw-Hill Book Company, Inc., 1936. 445 p. illus. 23 cm. (McGraw-Hill publications in the agricultural and botanical sciences, E. W. Sinnott, consulting editor) \$3.50. 4896a

Contents (abridged): Section I, General: Beginnings of plant culture. Adaptation of crops. Classification of field crops. Germination and growth. Plant improvement. Value and use of good seed. Commercial fertilizers. Barnyard manure. Lime. Preparation of the seedbed. Feeding practices. Tillage. Harvesting and storage of grain crops. Haymaking. Silage. Pasture and meadow management. Weeds. Crop rotation. Section II, Cereal grains. Section III, Legumes for seed. Section IV, Forage crops. Section V, Root crops. Section VI, Fiber crops. Section VII, Tubers. Section VIII, Sugar plants. Section IX, Stimulants. Index.

Note: A textbook for agricultural colleges designed to be useful for general fields with thorough attention to fundamentals which later in the text are applied to the discussion of specific crops. The second edition has been revised to include up-to-date discoveries and to shorten the original length so that the book can be used for one-semester courses. Fewer illustrative tables have been used. Questions at the end of each chapter were selected to stimulate the student's interest.

KING, ARNOLD JAMES, AND OTHERS

An objective method of sampling wheat fields to estimate production and quality of wheat, by Arnold J. King, Dale E. McCarty, and Miles McPeck. Washington, D.C.: Government Printing Office, 1942. 87 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 814) \$0.10. 4897

Contents: Introduction. Description of the 1939 and 1940 pre-harvest wheat surveys: Objectives. Areas included in the surveys. Sampling procedure. Laboratory procedure. Publication of information. Efficiency of the sample: Statistical efficiency. Efficiency of sample, considering costs. Bias. Forecasting. Conclusions. Literature cited. Appendix.

Note: The data presented in this bulletin were prepared in cooperation with the Kansas, North Dakota, and Iowa Agricultural Experiment Stations. The first section of the bulletin describes the technique employed in the field, laboratory operation, and the method of publication of the information. The second section presents an appraisal of the survey from the standpoint of its efficiency in estimating quality and production. The third section shows the results of a study designed to evaluate several attributes of yield and the possibilities of successfully forecasting yield therefrom.

McMURTREY, JAMES EDWARD, JR.

Symptoms on field-grown tobacco characteristic of the deficient supply of each of several essential chemical elements. Washington, D.C.: Government Printing Office, 1938. 31 p. illus. (part col.) 23 cm. (United States. Department of Agriculture. Technical bulletin no. 612) \$0.10. 4898

Contents: Introduction. Review of the literature. Procedure. Growth manifestations due to deficiencies of essential chemical elements: Nitrogen. Phosphorus. Potassium. Magnesium. Calcium. Boron. Manganese. Sulphur. Iron. Combination of deficiency effects. Comparison of deficiency effects: Field key to plant-food deficiency symptoms on tobacco. Summary. Literature cited.

Note: The observations upon which these studies were based were collected over a period of 20 years from numerous locations in the tobacco-producing areas of the United States. This pamphlet presents these observations showing the effect of deficient supplies of certain essential elements upon field-grown tobacco. The purpose was to provide data for the provision of fertilizers essential to plant development and growth. Also reported are the systematic studies to check the field observations, which were conducted at Upper Marlboro, Maryland, using relatively pure chemicals to supply or withhold each of the several essential plant nutrients, as desired.

MAGOON, CHARLES ALDEN, AND CHARLES W. CULPEPPER

Response of sweet corn to varying temperatures from time of planting to canning maturity. Washington, D.C.: Government Printing Office, 1932. 40 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 312) \$0.05. 4899

Contents: Introduction. Sources of data. The temperature base line. Meteorological data for 1924 and 1927. Results with Golden Bantam in 1924. Results with Golden Bantam in 1927. Results with Stowell Evergreen in 1924. Results with Stowell Evergreen in 1927. Discussion of results with Golden Bantam and Stowell Evergreen in 1924 and 1927. Temperature summations for different varieties. Data from corn grown in Iowa. Data from corn grown in Maine. Data from corn grown in New York. General discussion. Summary. Literature cited.

Note: This bulletin records the results of studies on the response of different varieties and strains of sweet corn to varying temperature conditions. The studies were made to discover whether particular varieties or strains had definite quantitative temperature requirements for growth. The results have been published for the attention of growers, breeders, and canners of sweet corn.

RATHER, HOWARD CHRISTIAN

Field crops. New York: McGraw-Hill Book Company, Inc., 1942. 454 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences; L. J. Cole, consulting editor) \$3.75. 4900

Contents: The significance of farm crops. Classification of farm crops. Field crops in relation to farm management. Soil conservation and management. Tillage and cultivation. Legumes for forage. Perennial forage grasses. Annual forage crops. Hay-making. Silage. Pastures and pasture management. The production of forage seed. Corn. Wheat and rye. Oats and barley. Miscellaneous grain and seed crops. Small-grain and -seed crops. Large-seeded legumes. Potatoes and sweet potatoes. Sugar crops. Cotton. Tobacco. Crop improvement. Appendix. Index.

Note: A textbook for agricultural college students who are taking their only course in the subject. It is especially adaptable for short courses offered for students mainly concerned with applications of scientific principles to farm practice. It is useful also as a reference book to farmers. Each chapter is accompanied by a list of useful literature.

RICHARDSON, HOWARD BARRETT, AND OTHERS

Methods for the measurement of certain character properties of raw cotton, by Howard B. Richardson, T. L. W. Bailey, Jr., and Carl M. Conrad. Washington, D.C.: Government Printing Office, 1937. 77 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 545) \$0.15. 4901

Contents: Introduction. Determination of the strength of raw-cotton fibers by the improved Chandler bundle method. Estimation of fiber fineness in raw cotton with special reference to improvements in the method of determining weight per unit of length. Improvements in the Clegg method for determination of "immaturity count" as a measure of fiber maturity in raw cotton. General summary. Literature cited. Appendix.

Note: This bulletin describes recent detailed improvements in methods of measuring three "character" properties of raw cotton—fiber strength, fineness, and maturity.

STEINBAUER, CLARENCE EMIL

Physiological studies of Jerusalem-artichoke tubers with special reference to the rest period. Washington, D.C.: Government Printing Office, 1939. 52 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 657) \$0.15. 4902

Contents: Introduction. Review of literature. Entrance into the rest period. Emergence from the rest period. Summary and conclusions. Literature cited.

Note: The experimental work on the tubers of the Jerusalem-artichoke (*Helianthus tuberosus* L.) reported in this bulletin was designed (1) to find means of abbreviating the long rest period of tubers of the plant; (2) to determine some of the physiological changes occurring during entrance into and emergence from rest; and (3) to correlate, if possible, any changes in composition or physiological activity with the beginning or the termination of the resting condition. The results of studies on four different varieties are reported.

STUART, WILLIAM

The potato; its culture, uses, history and classification. Fourth edition, revised. Philadelphia: J. B. Lippincott Company, 1937. 508 p. illus. (part col.) 21 cm. \$3.50. 4903

Contents (abridged): The potato as a world crop and its relative importance in the United States. Potato production in North America. Leading environmental influences in potato culture: soil, temperature and moisture. Food requirements of the potato crop and how supplied. Varieties to grow; kind and amount of seed to use, and planting methods. The cultural care of the growing crop. Potato production in the South. Potato production in the North and West. Potato production costs. Harvesting, picking and handling—grading, shipping and marketing the potato crop. Potato storage and storage shrinkage. Types of storage houses, their construction and cost. Potato diseases and their control. Insect and animal parasites of the potato and methods of controlling them. Fungicides and insecticides: their preparation, use, application, and resultant benefits. Spray, equipment and classification. Industrial uses of the potato in America and foreign countries. Origin and early history of the

potato. Potato breeding and selection. Classification and description of commercial varieties. Appendix. Index.

Note: A practical guide to the cultivation of potatoes. Emphasis is placed upon methods, conditions, and varieties grown in the United States. This fourth edition has been revised to include recent information and to revise the statistical data. The chapters on breeding and selection and classification and description of commercial varieties show the greatest changes.

VICKERY, HUBERT BRADFORD, AND OTHERS

Chemical investigations of the tobacco plant, by Hubert Bradford Vickery, George W. Pucher, Alfred J. Wakeman and Charles S. Leavenworth, with technical assistance of Laurence S. Nolan. Washington, D.C.: Carnegie Institution of Washington, 1933. 77 p. illus. 25 cm. (Carnegie Institution of Washington. Publication no. 445) Paper, \$1.00; cloth, \$1.75. 4904

Contents (abridged): Part I, Chemical changes that occur in leaves of Connecticut shade-grown tobacco during early stages of curing. Part II, Chemical changes that occur in leaves of Connecticut shade-grown tobacco during culture in distilled water. Part III, Determination of carbohydrates in tobacco leaf extract. Bibliography.

Note: Mainly a report of an investigation of the chemical changes that occur when Connecticut shade-grown tobacco leaves are cured under the conditions of regular commercial practice.

WALLACE, HENRY AGARD, AND EARL N. BRESSMAN

Corn and corn growing. Fourth edition, completely revised. New York: John Wiley & Sons, Inc., 1937. 436 p. illus. 21 cm. (The Wiley farm series, edited by A. K. Getman and C. E. Ladd) \$2.75. 4905

Contents: Picking and storing seed corn. Harvesting corn. Marketing corn. Testing, grading and adapting seed corn. Corn soils and preparation of seed bed. Planting corn. Growing crops with corn. Cultivating corn. Controlling insects and diseases. Raising corn for fodder and silage. Raising sweet corn. Raising popcorn. Development and parts of the corn plant. Classification of corn. Varieties of corn. Corn breeding. Judging and testing for yielding ability. History and importance of corn. Competing corn-growing regions. Cost of corn production. Economic factors affecting corn production. Economic factors affecting corn prices. Interrelationship between corn and hogs. Corn as affected by temperature and rainfall. Commercial products of corn. Problems and community studies. Corn statistics. Index.

Note: Treats of every phase of corn (maize) growing, from choosing and planting the seed to the marketing of the harvested crop. It covers such subjects as temperature, soil and rainfall, pollination, fertilization, and heredity, suckers, pests and diseases, costs, markets, and sales. Greatest emphasis in this edition has been placed on the revisions that deal with the economics and with the genetics of corn. In the appendix the figures have been revised and new material has been added.

WHITING, ANNA GERALDINE, COMPILER

A summary of the literature on milkweeds (*Asclepias* spp.) and their utilization. Washington, D.C.: Government Printing Office, 1943. 41 p. illus. 23 cm. (United States. Department of Agriculture. Bibliographical bulletin no. 2) \$0.10. 4906

Contents: Introduction. Fiber production. Rubber production. Other products. Bibliography: Fiber production. Rubber production. Other products.

Note: The first 33 pages of this bulletin review the scientific literature dealing with the milkweeds and their industrial utilization, covering fiber, rubber, paper, cellulose, and oil production. The bibliography lists 95 publications in English, French, German, Italian, Russian, and Ukrainian.

Gardening

ABBOTT, DAISY THOMSON

The indoor gardener. Minneapolis: University of Minnesota Press, 1939. 117 p. illus. 21 cm. \$1.50. 4906a

Contents: The care and feeding of house plants. The green thumb. Gardens in apartments, school room, office. Gardens under glass. Watering. Feeding and cultivating. House plant troubles. Spring and summer care. Propagating house plants. What to buy and why. Bulbs. Foliage plants. Flowering plants. Gift plants. A list of good foliage plants for the house. Formulas for insect control. Commercial fertilizers. Index.

Note: This non-technical book advises the lay reader on problems of indoor plant growing. Line drawings identify best plants to buy.

AMERICAN ASSOCIATION OF BOTANICAL GARDENS AND ARBORETUMS

Lilacs for America. Report of 1941 survey conducted by the Committee on Horticultural Varieties of the American Association of Botanical Gardens and Arboretums. Swarthmore, Pa.: The Arthur Hoyt Scott Horticultural Foundation, 1942. 64 p. 22 cm. Paper, \$1.00. 4906b

Contents: Statement of method of plant surveys. Subcommittee on lilacs; list of collaborators. Recommended lilacs. Numerical ratings of lilacs. Various notes and comments. Alphabetical check list of lilac names.

Note: This pamphlet summarizes the varieties of lilacs being grown in the United States, gives the relative value of the different kinds in the opinion of the growers, and indicates which varieties can be purchased from nurseries in the United States.

AMERICAN ROSE SOCIETY

The American rose annual. The 1944 yearbook of rose progress. Prepared by R. Marion Hatton, editor; completed by J. Horace McFarland and Sara C. Grimm. Harrisburg: The American Rose Society, 1944. 234 p. illus. 20 cm. \$3.50. 4906c

Note: The latest number in a yearbook series which goes back to 1916. Some of the earlier issues are still in print and a cumulative index to 26 years can be had from the Secretary of the Society at \$1.00. The 1944 annual contains 45 signed articles on various aspects of rose culture, including "The Proof of the pudding," a regular section in which the newer varieties of roses are commented upon by various rose-growers who have tried raising them, and an index.

BAILEY, LIBERTY HYDE

The garden of gourds, with decorations. New York: The Macmillan Company, 1937. 134 p. illus. (part col.) 24 cm. \$2.50. 4906d

Contents: *Cucurbita pepo*, and the yellow-flowered gourds. *Cucurbita texana*: *Cucurbita pepo* var. *ovifera*. *Cucurbita Péten* gourd. *Cucurbita okeechobeensis*. *Cucurbita foetidissima*. *Cucurbita maxima* var. *turbaniformis*. *Cucurbita ficifolia*. *Cucumis melo* varieties. *Cucumis anguria*. *Cucumis dipsaceus*. *Lagenaria siceraria*. *Luffa*, the vegetable sponges. *Trichosanthes anguina*. *Benincasa hispida*. *Momordica charantia* and *M. balsamina*. *Momordica cochinchinensis*. *Cyclantheras*. *Ecballium elaterium*. Index.

Note: A book of pen-and-ink drawings of the various species of gourds, with a simple, non-technical descriptive text for the interested layman. The advantages of the gourds as garden plants and ornaments for the home are indicated.

BAILEY, LIBERTY HYDE

The garden of larkspurs, with decorations. New York: The Macmillan Company, 1939. 116 p. illus. (part col.) 24 cm. \$1.39. 4906e

Contents: The delphinium plant. The breeding of delphiniums. The culture of delphiniums. Diseases of delphiniums, by Leon H. Leonian. Insects and other pests, by W. E. Blauvelt. Rocket larkspur. Forking larkspur. Bouquet larkspur. Garland larkspur. Candle larkspur. Red larkspurs. Key. Enumeration. Index.

Note: A comprehensive guide for serious gardeners and delphinium enthusiasts. Notes, information, and illustrations are detailed. An important part of the book is the Enumeration, containing one hundred and ten binomials known to American gardeners and written in more technical language than the main part.

BAILEY, LIBERTY HYDE

The garden of pinks, with decorations. New York: The Macmillan Company, 1938. 142 p. illus. (part col.) 24 cm. \$1.39. 4906f

Contents: General view. The rainbow pinks. The clusterhead pinks. The maiden pinks. The cheddar pinks. The cottage pinks. The carnation pinks. The rock-garden pinks. Insect and other animal pests of *Dianthus*, by W. E. Blauvelt. Diseases of *Dianthus*, by P. P. Pirone. Enumeration of species of *Dianthus*. Key to significant species. Index.

Note: This book of pen-and-ink drawings with descriptive text is intended to clarify the nomenclature of the garden plants of the genus *Dianthus*, and to stimulate an interest on the part of the amateur gardener in these perennials. In addition to presenting a brief manual on the art of growing pinks, the book gives an alphabetical list of all species and botanical varieties known to the author, with scientific and common names and key characteristics.

BAILEY, LIBERTY HYDE

Gardener's handbook, successor to The gardener; brief indications for the growing of common flowers, vegetables and fruits in the garden and about the home. New York: The Macmillan Company, 1934. 292 p. illus. 24 cm. \$1.49. 4906g

Note: This volume is an illustrated manual for the flower and vegetable gardener. The arrangement is alphabetical, in encyclopedia fashion, about 400 subjects being covered, including the varieties of flowers and vegetables and other garden topics such as annuals, borders, lawns, potting, propagation, windbreaks, and window-gardens. The book is a revision and expansion of the same author's work entitled *The Gardener*, New York: The Macmillan Company, 1925.

BAILEY, LIBERTY HYDE, AND ETHEL ZOE BAILEY, COMPILERS

Hortus second, a concise dictionary of gardening, general horticulture and cultivated plants in North America. New York: The Macmillan Company, 1941. 778 p. illus. 26 cm. \$5.00. 4907

Note: A concise dictionary of gardening and horticulture, based on the author's *Hortus*, New York, 1930; but it has been revised, reset, and issued in a new format. It is designed to present in a single volume a comprehensive record of the plants in cultivation on the North American continent; a convenient reference book for cultural methods, hardiness of plants, special types of horticulture, uses of plants, soil requirements, transplanting, propagation, methods, common and botanical names, spelling, definitions of terms, native habitat, present range, identification. It is useful to gardeners, growers, nurserymen, dealers, propagators, garden club members, landscape architects, botanists, teachers, and students.

BALTHIS, FRANK K.

Plants in the home. Illustrated by Tabea Hofmann. New York: The Macmillan Company, 1941. 172 p. illus. 27 cm. \$3.50. 4908

Contents: The plants' surroundings. Soils and fertilizers. Pots and tubs. Potting and transplanting. Watering, syringing, and washing plants. Insects and diseases. Home propagation of plants. Hanging baskets and window boxes. Plants for men. Crystal gardens or miniature hothouses. The miniature rock

garden. Caring for house plants during summer. Plants at rest. Bulbs for winter cheer. Cut flowers. Succulents. Plants of foliage and flower. Novelties and plant curiosities. Forcing dormant woody twigs into bloom. Growing plants without soil. The window gardener's calendar. Indexes.

Note: A brief treatise for the layman on the care and cultivation of potted plants in the home, including non-technical descriptions of the various suitable species, suggestions from a decorative viewpoint, novelties and plant curiosities, rock gardens, and other features. Technical terms are avoided but botanical classifications are given in most cases.

BISSLAND, JAMES H.

The rock garden, and what to grow in it. Boston: Ralph T. Hale and Company, 1939. 128 p. illus. 22 cm. (The Gardener's library, edited by Edward I. Farrington) \$1.00. 4909

Contents (abridged): Rock garden construction. Cultivation of rock plants. Plants for rock gardens. Color combinations in the rock garden. Rock plants for Southern gardens. Rock gardens miscellany. Books pertaining to rock gardens. Index.

Note: A practical introductory manual for the amateur, written in non-technical language. The chapter on miscellany includes plants not usually found in rock gardens. The bibliography, 22 pages long, was compiled by Elizabeth C. Hall, librarian of the New York Botanical Garden.

BUSH-BROWN, LOUISE (CARTER), AND JAMES BUSH-BROWN

America's garden book. Illustrated with photographs in natural colors and halftone plates and drawings. New York: Charles Scribner's Sons, 1939. 1222 p. illus. (part col.) 21 cm. \$3.50. 4910

Contents: Soil and soil improvement. Design. Construction problems. Lawns. Ground covers. Vines. Trees. Shrubs. Hedges. Annuals. Biennials. Herbaceous perennials. Bulbs, corms, and tubers. Lilies. Roses. Rock and wall gardens. The woodland garden. Water and bog gardens. The herb garden. City gardens. Flower pot gardens. Coldframes and hotbeds. The small greenhouse. House plants and the window garden. The culture of plants in nutrient solutions. The home fruit garden. The home vegetable garden. Garden practices. Tools and garden equipment. Propagation. Plant diseases and pests. Diseases and insect pests of trees and shrubs. Diseases and insect pests of common garden plants. Miscellaneous insect pests, rodents, and animals. Garden calendar. Maps of growing conditions and frost dates. Glossary. Index.

Note: A comprehensive handbook of information on garden-making, particularly for home-owners living in suburban and country communities. It is of use also to professional landscape gardeners. Latest approved methods and practices of gardening are presented, and emphasis is placed on the importance of results as judged from the artistic standpoint. In most cases the International Rules of Botanical Nomenclature are followed.

CLARKSON, ROSETTA E.

Herbs, their culture and uses. Illustrated by Tabea Hofmann. New York: The Macmillan Company, 1942. 226 p. illus. 24 cm. \$2.75. 4911

Contents: Introduction. Why have herbs in your garden? Herb arrangements in the garden. Propagation of herbs. Outdoor planting. Unusual herb plantings. The culinary garden. Fragrant herb garden. Indoor herb gardens. Harvesting and drying. Herb dyes. Potpourri. Herb products. Herb vinegars. The uses of herbs in cooking. Herb teas and beverages. Marketing of herbs. Tabular paragraphs on 101 useful herbs. Herb tables. Index.

Note: For the advanced amateur gardener who wishes to grow herbs.

COFFIN, MARIAN CRUGER

Trees and shrubs for landscape effects. New York: Charles Scribner's Sons, 1940. 169 p. illus. 23 cm. \$3.00. 4912

Contents: Foreword. Introduction. Gardening with trees. Approaching the house. The house and its setting. Lawn and terrace treatment. Backgrounds and ground covers. Walks formal

and informal. Woodland. Green and other gardens. Planting fundamentals. Index.

Note: The information in this guide to landscaping is applicable to the region of the Atlantic seaboard from Massachusetts to Delaware, with a comparable area extending into the interior. Lists of appropriate trees and shrubs follow each chapter.

COOMBS, SARAH V.

South African plants for American gardens; with a frontispiece in full color, sixteen illustrations in full color from lumière plates by the author, and seventy-three illustrations in black-and-white. New York: Frederick A. Stokes Company, 1936. 364 p. illus. (part col.) 22 cm. \$5.00. 4912a

Contents: Native conditions. Types and general cultivation. Plans and suggestions. Bulbous plants. Succulents. Herbaceous plants. Half-hardy and tender shrubs. Glossary. A list of dealers who carry stock. Table of synonyms. Index to contents. Index of botanical names. Index of common names.

Note: A book for gardeners and plant-lovers, describing the types of flowers grown in South Africa and discussing the possibilities of raising them in the United States. Wherever possible those plants are chosen which are available in supply houses. Descriptions are given in terms of interest to gardeners, rather than botanists. Lists for quick reference give the type of plant and the particular uses recommended for each. Plates, some of which are colored, add to the clarity of the descriptions.

CORNELL, RALPH D.

Conspicuous California plants, with notes on their garden uses. Illustrations by the author. Drawings by Elizabeth Lewis. Pasadena, Calif.: San Pasqual Press, 1938. 192 p. illus. 25 cm. \$4.00. 4912b

Contents (abridged): Sequoias. Green bay tree. Coast live oak. Fremont's cottonwood. Torrey pine. Monterey cypress and pine. Manzanita. Coffee berry and mountain mahogany. The cheerful cherries. The toyon and other Christmas plants. Flowering shrubs of Santa Cruz Island. Tree yuccas. Mesquite. The tornillo. Palo verde. Smoke tree. Ratama. Natural landscapes. Native plants in the garden. Garden notes. Bibliography. General index. Botanical index.

Note: Semi-popular essays on some of the more spectacular plants growing in California. The illustrations are mostly reproductions of photographs. The book is partly based on a series of radio broadcasts. The author's purpose has been not only to aid gardeners, but to interest persons in the conservation of the plants discussed.

ELLIS, CARLETON, AND MILLER W. SWANEY

Soilless growth of plants: use of nutrient solutions, water, sand, cinder, etc. New York: Reinhold Publishing Corporation, 1938. 155 p. illus. (part col.) 23 cm. \$2.75. 4913

Contents: Chemistry of plant life. Growing in mineral aggregates: sand-culture method. Sub-irrigation method. Growing in water: water-culture system. Nutrient solutions. Household plant culture. Growing flowers for the family. Growing vegetables for the family. Commercial aspects. Special chemicals. Plant hormones; doubling chromosomes in plants. Effects of miscellaneous chemicals on plants. Common detriments. Nutrient formulas. Index.

Note: A discussion of the possibilities in the growth of plants without soil, and a guide to the methods used. The book is planned for anyone interested in this development. The uses of the technique in growing household plants, flowers, and fruit are treated and illustrated.

FELT, EPHRAIM PORTER

Our shade trees. Second edition. New York: Orange Judd Publishing Company, Inc., 1942. 316 p. illus. 20 cm. \$2.00. 4914

Contents: Shade trees and man. General shade tree care. The language of shade trees. The troubles of shade trees. The selection and planting of shade trees. Research and education. Control of insects and diseases. A list of some of the more useful books on trees and shrubs. Index.

Note: Presents an outline of the relation of trees to suburban life including the needs of shade trees under prevailing conditions of temperature, wind, and storms, and those methods which are intended to assist the tree-owner to offset the present day perils or hazards of shade trees. Designed for the use of property owners, tree wardens, city foresters, and superintendents of estates. The second edition contains new material based on the more important lessons of the hurricane of 1938 and the ice storm of 1940. Included also is a general account of the effects of winter drying during extreme weather conditions.

FELT, EPHRAIM PORTER

Pruning trees and shrubs. New York: Orange Judd Publishing Company, Inc., 1941. 237 p. illus. 20 cm. \$2.00. 4914a

Contents: Introduction. Nature a guide. Growing sturdy trees. Possibilities of pruning. Guidance pruning. When to prune. Tree repair. Line clearance. Safety in tree work. Hedges. Fruit trees. Small fruits. Nut trees. Index.

Note: A brief non-technical manual which supplies information on pruning of trees in such a manner as best to serve human needs under the highly diverse conditions of the present day. The requirements of each type of shade and ornamental tree and of a great variety of fruit-producing trees, shrubs, and vines are considered in some detail, while the fundamental principles of pruning common to all are outlined. The work is not intended to be exhaustive, and is meant for the individual who has a few trees or shrubs rather than for the extensive fruit-grower or operator.

FELT, EPHRAIM PORTER

Shelter trees in war and peace. New York: Orange Judd Publishing Company, Inc., 1943. 320 p. illus. 20 cm. \$4.75. 4915

Contents: Trees and man. Trees and nature. Protection afforded by trees. Shelter trees and economics. Engineering and trees. The parts of a tree. Essentials of tree growth. How a tree grows. Shelter trees and war. Prevention or correction of troubles. Trunk and branch troubles. Danger to the foliage canopy or leaves. General care of trees. Selection of shelter trees. Shelter or shade trees of the United States. Shelter or shade tree policy. Publications related especially to shelter trees. Index.

Note: A guidebook for the landscape gardener, land-owner, civil or landscape engineer, and for municipal and rural town planning groups, which presents the fundamentals on the care, preservation, planting, and uses of trees. Emphasis is placed on the changed environmental conditions around or near new military camps and industrial plants and the resultant danger of killing tree growth. Various types of American trees are described, with notes on their individual care, the diseases and injurious insects to which they are subjected, and the indicated treatment.

FENSKA, RICHARD ROBERT

Tree experts manual. New York: A. T. De La Mare Company, Inc., 1943. 192 p. illus. 23 cm. \$4.50. 4915a

Contents: The tree. Growth of trees. Watering trees. Soils. Diagnosis of tree trouble. Fertilizing shade trees. Transplanting trees. Pruning trees. Tree wound dressing. Bracing and cabling. Lightning protection for trees. Tree surgery. Tree diseases. Environmental trouble. Shade tree insects and their control. Spraying trees. Dusting. Spray materials and formulae. Selection of trees. Evaluation of shade trees. Shade tree laws. Dendrology. Appendix. Index.

Note: A well-illustrated guide for both the amateur and the expert tree worker as well as the home owner, giving information on the care of shade and ornamental trees. There is abundant material on the cause and treatment of various tree diseases, detailed sections on spray formulae, professional and amateur tree surgery, and a valuable chapter on the laws affecting ornamental trees in communities.

FOX, HELEN (MORGENTHAU)

Gardening with herbs for flavor and fragrance. Drawings by Louise Mansfield. New

York: The Macmillan Company, 1933. 334 p. illus. 22 cm. \$3.50. 4916

Contents: The beginning. Definition and explanation. The written word. The witches' cauldron. Herbs in the United States. In the garden. Herb teas. Dramatis personae. Over the stove and in the ice box: cooking with herbs. Recipes. Bibliography. Index.

Note: A popular guide for the home gardener covering the more important aspects of the cultivation of herbs for home use. A brief account of the history and legend associated with each plant, together with a short note on its culture and uses, is presented in the section entitled "Dramatis personae." A number of recipes are given and there are many pen-and-ink drawings of typical herbs.

FREE, MONTAGUE

Gardening; a complete guide to garden making, including flowers and lawns, trees and shrubs, fruits and vegetables, plants in the home and greenhouse. With 73 halftones and 125 line drawings. New York: Harcourt, Brace and Company, 1937. 550 p. illus. 22 cm. \$2.95. 4917

Contents: Selecting and planning the property. Grading. Walks. Soil improvement. Manures and fertilizers. The lawn. Trees and shrubs. Foundation planting. Vines and hedges. Flower beds and borders. Hardy perennials. Annuals and biennials. Flowering bulbs. Rose garden. Rock and wall gardens. Water gardens. City gardens. Roof gardens. Herb gardens. Vegetable gardens. Fruit garden. Plants in the home. Cold-frames and hotbeds. Greenhouses. Plant propagation. Pruning. Winter protection. Garden enemies. Tools and labels. Index.

Note: A comprehensive and practical guide for the average gardener, both novice and expert. Methods for performing various gardening operations are described in detail together with the reason back of every practice. Some of the material appeared originally in various gardening periodicals. The volume is well illustrated with line drawings and photographs.

GARDNER, VICTOR RAY

Basic horticulture. New York: The Macmillan Company, 1942. 441 p. illus. 24 cm. \$3.75. 4918

Contents: The place of horticulture in American agriculture. Classifications of plants. Plant structure and plant growth. Specialized buds and stems. Temperature relations of plants. Water as a limiting factor. Light as a limiting factor. Plant nutrients as limiting factors. Water and nutrient intake, translocation and utilization. Carbohydrates. Growth and fruitfulness. Flower-bud differentiation and flowering habits. Training horticultural plants. Pruning. Flowers, fruits, and seed. Propagation. Plant pests and the injuries caused by them. Control of plant ills. The culture of annuals. The culture of biennials, herbaceous perennials and plants. The culture of woody perennials. Some general questions and problems. Index. Glossary.

Note: A textbook for the college course in general horticulture. Maintains a balance between fruits, vegetables, and ornamental plants, and covers the fundamental principles of plant structure, growth, and culture. Problems appear at the end of each chapter.

GERICKE, WILLIAM FREDERICK

The complete guide to soilless gardening. New York: Prentice-Hall, Inc., 1940. 285 p. illus. 23 cm. \$1.89. 4919

Contents: Introduction. Apparatus. Nutrient solutions. Water. Planting. Physical conditions. Symptoms of change. Tomatoes and other vine crops. Potatoes. The root vegetables. Leaf vegetables. Seed vegetables. Perennial vegetables and berries. Field crops. Herbaceous annual flowers. Flowers from bulbs, corms, tubers, and rhizomes. Flowering woody perennials. Commercial, garden, and home production. Mineral composition of plants. Sand culture. Hydroponics and agriculture. Glossary. Index.

Note: A textbook and manual for the amateur as well as the professional, giving the fundamentals of hydroponics or production of crops without soil, the theory of which was first presented in 1929. The author points out that in 1940 the art was still in the experimental stage and that although hydroponics requires a larger expense per unit area than agriculture, experience has shown that it is profitable commercially because of increased yield and quality of product. The main purpose of the book is to aid the beginner. The work contains numerous

illustrations of practical applications as well as detailed methods for raising each particular type of vegetable, fruit, or flower. Formulas of chemicals required for plant food are also included.

GOMEZ, NATALIE

Your garden in the city. Introduction by F. F. Rockwell. Photographs by Jessie Tarbox Beals and Mattie Edwards Hewitt; drawings by Clara Coffey. New York: Oxford University Press, 1941. 247 p. illus. 22 cm. \$3.00. 4919a

Contents: Part I, Creating the garden: City gardening is not country gardening. Searching for garden sites. Interests and activities. Design. Construction. Soil. Care of the city garden. Insect pests and fungi. Window boxes. Terrace and roof gardens. Shopping for plants. Tools and accessories. Color in the garden. The four seasons in a garden. Part II, Plant material: Plant material and gardening. Trees. Evergreens. Deciduous and flowering shrubs. Roses. Vines. Perennials. Annuals. Potted and bedding plants. Lawn in the city. Ground covers. Ferns and wild flowers. Spring and summer blooming bulbs—aquatics. Vegetables. Herbs. Gift plants. Some books on gardening. Index.

Note: A feature of this practical guide for the beginner is the set of "master plans" for small plots, which suggest basic layouts for small yards.

HASLTON, SCOTT EDSON, EDITOR

Succulents for the amateur; introducing the beginner to more than eight hundred fascinating succulent plants; illustrating four hundred; written by J. R. Brown, Alain White, Boyd L. Sloane, and G. W. Reynolds. Pasadena: Abbey Garden Press, 1939. 167 p. illus. (part col.) 24 cm. \$2.00. 4920

Contents (abridged): Introduction. General culture. Plant descriptions: Aizoaceae—fig-marigold family; Amaryllidaceae—amaryllis family; Asclepiadaceae—milkweed family; Bromeliaceae—pineapple family; Compositae—daisy family; Crassulaceae—orpine family; Euphorbiaceae—spurge family; Portulacaceae—purslane family. Miscellaneous. Index.

Note: This is an introductory book to a relatively new field for amateur gardeners. The descriptions of the plants are in simple language. Brief information is given on propagation, cultural and general matters. This is a companion book to the author's *Cacti for the amateur*, Pasadena: Abbey Garden Press, 1940, 134 p., \$2.00, which contains detailed general and cultural instructions, applicable to succulents.

HOTTES, ALFRED CARL

The book of perennials. Sixth edition, revised. New York: A. T. De La Mare Co., Inc., 1942. 272 p. illus. 19 cm. \$2.00. 4921

Contents: Let's plan a perennial garden. Garden operations. Calendar for perennials. Insects and diseases. Propagation. For shady places. Wild flowers. Hardy ferns. Rock gardens and plants. Useful perennial lists. Representative perennials of 32 regional divisions of the U.S. Noteworthy perennials. Ornamental grasses. Herbs. Tabular list of perennials. Index of plant names. General index.

Note: A compact manual of perennial flowers for the garden. Its object is to point to methods of outstanding success in growing each of the perennials suitable for American gardens. The sixth edition includes minor changes to bring the work up to date.

HOYT, ROLAND STEWART, COMPILER

Check lists for the ornamental plants of subtropical regions; a handbook for ready reference, compiled and arranged with delineations. Los Angeles: Livingston Press, 1938. 383 p. illus. 22 cm. \$3.00. 4922

Contents (abridged): Explanatory. General lists. Structural form. Cultural aspects. Purpose adaptation. Ornamental characters. Distinctive qualities. Garden miscellanea. Planting calendar. Compendium. Index.

Note: This is a handbook for the gardener, landscape architect, and commercial nurseryman. It is an attempt to organize

and classify plants and trees to indicate their suitability for use under definite conditions. For instance, plants listed as being resistant to smoke and dust are divided into trees, shrubs, vines, and herbaceous plants, with each plant rated for suitability. The information applies to the southern half of the United States. The compendium lists all plants that appear in the text; short notes on appearance, habit, and cultivation, and illustrations are included.

JEFFERSON, THOMAS

Thomas Jefferson's Garden Book, 1766-1824, with relevant extracts from his other writings. Annotated by Edwin Morris Betts. Philadelphia: The American Philosophical Society, 1944. 704 p. illus. 24 cm. (American Philosophical Society. Memoirs. Vol. xxii) \$5.00. 4922a

Contents: Garden book for the years 1766-1824, with relevant extracts from Jefferson's other writings: Early years (1766-1775). Revolutionary period (1776-1783). Minister to France (1784-1789). Secretary of State (1790-1793). Monticello interlude (1794-1796). Vice President (1797-1800). President (1801-1808). Retirement (1809-1826). Appendixes. Bibliography. Index.

Note: The varied entries in Jefferson's *Garden Book* not only show us what he was doing and planting at Monticello, Poplar Forest, and his other estates, but also give a clue to his interests in introducing new plants and improving horticulture, viticulture, and many other aspects of the rural life of his time. The gardens and groves at Monticello were experimental plots where new plants were introduced and nurtured, and are tied up with the agricultural and horticultural needs of the United States as shown by Jefferson's attempts to introduce the cultivation of olive trees and dry rice into South Carolina and Georgia, mainly for improving the living conditions of the slaves. There are seven appendixes giving Jefferson's summary of his meteorological journal, remarks on the water supply at Monticello, lists of plants sent by Jefferson to Paris, and other related extracts.

KANS, MAURICE GRENVILLE

Modern guide to successful gardening. New York: Greenberg, Publisher, Inc., 1934. 370 p. illus. 21 cm. \$2.50. 4922b

Contents (abridged): Annual flowers. Water gardens. Rock garden secrets. Flower garden for the summer residence. Lawn making and management. Perennial flowers. Nursery stock buying and planting. Vines for home adornment. Shrub pruning. Evergreens for small places. Bird-attracting plantings. Trees. Home fruits for high quality. Fruit garden for the summer residence. Vegetable garden planning. Harvesting and storing. Bug and blight control. The soil and its improvement. Manures and fertilizers. Coldframes and hotbeds. Amateur greenhouses. Seeds and seedlings. Planning home grounds. Index.

Note: A well-written book for the amateur gardener. Although not comprehensive, it includes most of the practical information needed by the gardener interested in growing vegetables for the kitchen and maintaining attractive grounds around his home. The appendix includes a variety of useful lists of flower, fruit, tree, and vegetable varieties.

KUCK, LORAIN E., AND RICHARD C. TONGE

The tropical garden, its design, horticulture and plant materials. New York: The Macmillan Company, 1936. 378 p. illus. 22 cm. \$3.00. 4922c

Contents: The design of tropical gardens. Outdoor rooms for the tropics. Dry gardens and patios in the hot climate. Tropical water and rock gardens. Beach and mountain gardening. Oriental influences in tropical gardens. Lawns in the tropics. Trees for the tropics. Large trees. Small trees. Palms. Tropical fruits as ornamentals. Evergreens in the tropics. Tropical shrubs and hibiscus. Filler shrubs. Facer shrubs and succulents. Vines for tropical gardens. Exotics. Tropical ferns. The tropical greenhouse and orchids. Annuals and perennials in the tropics. Tropical horticulture, with special reference to Hawaii. Color and blooming charts. Index.

Note: Covers the subject of garden-making in the tropics from the two viewpoints of design and the choice of plants and their culture. The listing and descriptions of the plant materials comprise the bulk of the volume. While an attempt has been made to name each plant scientifically, the book is intended for the amateur who has no knowledge of botany. There are 16 plates of photographs.

McFARLAND, JOHN HORACE, AND OTHERS

Garden bulbs in color, by J. Horace McFarland, R. Marion Hatton, Daniel J. Foley. Revised edition. New York: The Macmillan Company, 1941. 296 p. illus. (part col.) 23 cm. \$1.98.

4923

Contents: Foreword. Introduction. Bulbs through the ages. Definitions. Bulbs in the landscape. A note on planting bulbs. Bibliography. Tulips. Narcissus. Lilies. Other bulbs. Index.

Note: A compilation of information on many varieties of plants grown from bulbs, corms, and tubers for the amateur gardener. Some lesser known names, domestic and foreign, are introduced. Notes on culture are included, but the main intention is that of description of items, assisted by numerous illustrations in color drawn from seed-catalogues. The nomenclature used is mainly that of Bailey's *Hortus*, New York, 1930.

McFARLAND, JOHN HORACE

Roses of the world in color. Boston: Houghton Mifflin Co., 1938. 296 p. illus. (part col.) 23 cm. \$3.75.

4923a

Note: Approximately 500 varieties of roses are described in this condensed dictionary of roses adaptable to culture in the United States. A short history of the rose and suggestions for rose growing are included.

McLEAN, FORMAN TAYLOR

The gladiolus. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1941. 197 p. illus. 21 cm. (Whittlesey House garden series, edited by F. F. Rockwell) \$2.00.

4923b

Contents: History of horticultural development. Landscape uses. The cut flower supreme. Gladiolus species. The living gladiolus plant. Soils and fertilizers. Planting. Cultivation. Digging and storage. Diseases and pests. Propagation and commercial culture. Growing for exhibition. Subtropical culture: Selection of parents. Hybridization and inheritance. Growing from seed. Recommended varieties. Societies, shows, and literature. Bibliography. Index.

Note: Presents completely and concisely the essential information on the history and development of the gladiolus, its use and care in decoration, including an analysis of flower arrangement, the physiological development of the corm and plant throughout the dormant and growing seasons; modern culture methods, hybridization, and a résumé of the leading varieties. For the amateur and professional flower grower.

MARTIN, R. SANFORD

How to prune Western shrubs; illustrated by the author. Third edition. Hollywood: Murray & Gee, Inc., 1944. 90 p. U.S., \$1.00.

4924

Contents (abridged): Abeila. Abutilon. Althaea. Arbutus. Aspidistra. Berberis. Buddlea. Buxus. Callistemon. Calyanthus. Camellia. Cassia. Ceanothus. Cistus. Deutzia. Duranta. Erica. Eugenia. Fabiana. Fuchsias. Gardenia. Hedges. Hydrangea. Jasmine. Lantana. Lonicera. Mahonia. Myrtus. Nerium. Philadelphia. Plumbago. Roses. Salvia. Shade trees. Veronica. Willows.

Note: A practical manual for the gardener, written in simple language, and designed to apply to the Pacific Coast area. First published in 1935.

MATSCHAT, CECILE HULSE

Mexican plants for American gardens. With a preface by Dorothy Ebel Hansell. Boston: Houghton Mifflin Company, 1935. 269 p. illus. 22 cm. \$3.50.

4925

Contents: Part I, The garden: The early gardeners. Gardens of the ancients. Colonial gardens. Gardens of modern Mexico. Part II, The plants: A floral history of Mexico. Dwellers in the sun. Wildflowers of Mexico. Color with bulbs. Shrubs for pots and patios. Ornamentals and foliage plants. Lianas. Appendix: The common plants of Mexico. Bibliographical references. Index.

Note: The primary purpose of this book is to bring before the garden maker the rare or little known plant materials of Mexico, to enable him to choose that which is best adapted for his own

purposes, and to give full cultural directions for its care in home or professional gardens. Part I deals with a history of the first gardeners on the American continent and the beginnings of agriculture in Mexico. Part II presents a non-technical description of the plants themselves, giving habitat and range, care, and horticultural uses. The illustrations of plants are from pen-and-ink drawings.

MURRAY, PAULINE

Planning and planting the home garden; a popular handbook containing concise and dependable information designed to help the makers of small gardens. New York: Orange Judd Publishing Company, Inc., 1932. 412 p. illus. 24 cm. \$3.50.

4926

Contents (abridged): Where to plant. When to plant. How to plant. What to plant. Suitable trees. Deciduous shrubs. Conifers. Broad-leaf evergreens. Vines. Perennials and the flower border. Biennials. Annuals and annual borders. Formal borders. Bulbs. Summer bulbs and tubers. How to plan and lay out the garden. Paths. Lawns. Shape and size of lot. Front house and plot planting. Small lot with auto drive to rear. Sloping ground and terraces. Planting in shady places, woodlands, and northern exposures. Rock gardens. Walls and wall gardens. Water lilies, bog plants. Kitchen gardens. Garden accessories and furniture. Soils. Propagation. Pruning, shaping, clipping. Spraying. Winter protection. Coldframes and hotbeds. Garden calendar. Index.

Note: A handbook and guide for the home gardener with little or no experience. The planning and preparation of a garden are discussed, with attention to problems of grouping, color arrangement, and scale. Various plants are described in both their growing and dormant states. The work of each season of the year is outlined, with information on the preservation of plants from one year to another. The emphasis is mainly on flowers and shrubs, rather than vegetables.

PARKER, CHARLES W.

The lawn. How to make it, and how to maintain it. Boston: Ralph T. Hale & Co., 1939. 118 p. illus. 22 cm. (The gardener's library, edited by E. I. Farrington) \$1.00.

4927

Contents: General lawn practice. Types of lawn grasses. Preparation of the seed bed. Care of the new lawn. Care of the established lawn. Lawn renovation. The control of weeds. Pests which ruin lawns. Lawn-making materials. Lawn practice in detail. Index.

Note: A simple but authoritative handbook for the homeowner. Standard lawn formulas for various type soils are included, plus seasonal and regional methods of treatment and control of pests and weeds.

PIRONE, PASCAL POMPEY

Maintenance of shade and ornamental trees. New York: Oxford University Press, 1941. 422 p. illus. 24 cm. \$5.00.

4928

Contents: Part I, General maintenance practices: The normal tree. The soil and its relation to trees. Transplanting trees. Fertilizers and their use. Pruning trees and treating wounds. Cavity treatments. Bracing and cabling. Trees suitable for streets and roadsides. Part II, Specific abnormalities of trees: Diagnosing tree troubles. Non-parasitic injuries. Insect control. Spraying equipment and practices. Tree diseases and their control. General parasitic diseases. Diseases and insect pests of street and roadside trees—of deciduous ornamental trees and some shrubs—of evergreen trees and some shrubs. Selected bibliography. Index.

Note: For park superintendents, landscape architects, and others concerned with the care of trees.

POST, KENNETH

Plants and flowers in the home. New York: Orange Judd Publishing Company, Inc., 1944. 198 p. illus. 20 cm. \$2.00.

4928a

Contents: Environment and plant growth. Care of plants. Where to use plants. Reproduction. Flowering plants. Foliage plants. Indoor gardens. The water garden. Soil-less culture. Window boxes for seasonal effect. Troubles. Cut flowers. Glossary. Index.

Note: A manual for the amateur plant and flower grower, offered as a guide to the proper care and understanding of some of the peculiarities of the individual types, with instructions on methods of propagation and growing the plants over a long period of time. Plants are arranged by their genus name followed by the species and common names, with pronunciation of the former indicated by accent marks. The common and botanical names are indexed for ready reference and 54 terms and phrases are defined in the glossary.

PRATT, GLADYS LYNWALL

American garden flowers. Illustrated by Rudolf Freund. New York: Random House, 1943. 50 p. illus. (part col.) 28 cm. \$1.00. 4929

Contents: Garden flowers. Herbaceous flowers. Shrubs. Vines. Index.

Note: An attractive book containing pictures and descriptions of 51 flowers, nine shrubs, and nine vines common in American gardens. The end-papers, title-pages, and most of the illustrations are in color.

PREECE, WILLIAM HUGH ARTHUR

North American rock plants (first series). Illustrated with photographs by A. Nicholls. New York: The Macmillan Company, 1937. 204 p. illus. 24 cm. \$3.50. 4930

Note: In this handbook for amateur home gardeners an effort has been made to include under each plant dealt with full information regarding cultivation, propagation, range, habitat, habit, and flowering season. Each plant is represented by a page of text and a full-page black-and-white photograph. The plants are listed in order of their scientific names.

QUILLIN, ELLEN DOROTHY (SCHULZ)

Cactus culture; illustrated with drawings by Ben Carlton Mead. Revised edition. New York: Orange Judd Publishing Company, Inc., 1942. 180 p. illus. 21 cm. \$2.00. 4931

Contents: Introduction. How to recognize a cactus. How to start a garden. The indoor cactus garden. The outdoor cactus garden. Building the outdoor cactus garden. Cactus garden or desert garden? Succulents other than cacti. The rock garden. Nurslings. Grafting. Insects and diseases. Feeding cacti. Index.

Note: An introduction to cacti and other succulents for the gardener, written in an enthusiastic vein. The information is applicable mainly to cactus culture in the southern states. First published in 1932, this later edition includes a new chapter on feeding and several new illustrations.

ROCKWELL, FREDERICK FRYE

Peonies. With an introduction by C. C. Sherlock; drawings by George Hollock and the author. New York: The Macmillan Company, 1933. 73 p. illus. 19 cm. (The Home garden handbooks series) \$1.25. 4932

Contents: Peonies for perpetual beauty. Peonies in the garden. Types and varieties. Tree peonies. Soils and fertilizers. General culture. Cutting, keeping, and exhibiting peonies. Propagation. Diseases and insects. Peonies for special purposes.

Note: A brief handbook for the amateur gardener, presenting in condensed form the fundamentals of peony-raising, including methods of selecting types and varieties, together with techniques of growing for either garden display, landscape effect, cut blooms for the house, or as exhibits at flower shows. The book is designed to be used in conjunction with peony catalogues and growers' lists, and descriptive lists of peony varieties are therefore omitted.

ROCKWELL, FREDERICK FRYE, EDITOR

10,000 garden questions answered by 15 experts, with 400 illustrations and temperature and planting maps. F. F. Rockwell, editor; associate editors, Montague Free, T. H. Everett, and Esther C. Grayson. Garden City, N.Y.: The

American Garden Guild, Inc., and Doubleday, Doran and Company, Inc., 1944. 1467 p. illus. 20 cm. \$3.95. 4932a

Contents (abridged): Soils and fertilizers. Ornamental plants and their culture. Ten leading garden flowers. Lawns and turf areas. The home vegetable garden. Home-grown fruits. House plants. Plant troubles and their control. Regional garden problems. Landscaping and miscellaneous. List of state experiment stations. Books and bulletins on special subjects. Flower, fruit, and tree societies of the United States and Canada. Index. Maps of the United States showing average last killing frosts in spring and first killing frosts in autumn.

Note: Primarily for beginning gardeners and home owners, this reference work presents information in readily available form under ten general categories covering the entire field. The 15 authors comprise university professors, professional horticulturists, seedstore managers, and plant research specialists. The questions have been compiled from those received in the Question Box department of the magazine *The Home garden*. There are separate introductions to each of the ten sections covering general information, and while the answers given are for the most part concise and practical, not running over 50 words on the average, each of the ten sections contains an average of 60,000 words. A 56-page index provides complete cross-references.

SCHILLETTER, JULIAN CLAUDE, AND HARRY WYATT RICHEY

Textbook of general horticulture. New York: McGraw-Hill Book Company, Inc., 1940. 367 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences; L. J. Cole, consulting editor) \$3.00. 4933

Contents: General horticulture. Horticultural enterprises of the world. Horticultural enterprises of the United States. Horticultural enterprises of the home. Structures and functions of horticultural plants. Growth of horticultural plants. The horticultural plant in relation to temperature. The horticultural plant in relation to moisture. The horticultural plant in relation to light. The horticultural plant in relation to soil. Propagation of horticultural plants. Soil management of horticultural plants. Training horticultural plants. Pruning horticultural plants. Pests of horticultural plants. Controlling pests of horticultural plants. Harvesting and storing the products of horticultural plants.

Note: Sets forth the essential principles of horticulture in a manner suitable for a general college course for students desiring a broad knowledge of horticulture rather than for those who expect to specialize in the subject. Presents, first, a picture of the field of horticulture and its relations to agriculture and the economic, political, and social life of the individual, then discusses the fundamental plant processes and their application to horticultural practices.

SHERLOCK, CHESLA CLELLA

The gardener's how book. New York: The Macmillan Company, 1935. 358 p. illus. 22 cm. \$3.50. 4934

Contents: Annuals. Biennials. Bedding plants. Cacti. Cold frames. Color in the garden. Compost heaps. Cut flowers. Dahlias. Delphiniums. Dutch bulbs. Evergreens. Fertilizers and plant foods. Gladiolus. Greenhouses. Hedges. Hotbeds. House plants. Labels. Landscaping. Lawns. Lilies. Perennials. Plant breeding. Planting. Pools. Pests. Pruning. Rhododendrons. Rock gardens. Roses. Shrubs. Spraying. Summer flowering bulbs. Trees. Vines. Window boxes. Miscellaneous. Bibliography.

Note: A handbook for the amateur gardener, presenting in reference form the general questions and answers on the practical aspect of home gardening. Among the topics treated under each heading are the testing of seeds and preparation of seed beds, sowing of seed, care of seedlings, transplanting, cuttings, storage, culture and care, plant food, fertilizers, layout and design, drainage and grades, plant diseases, and other related subjects. The selected bibliography covers 62 gardening books published between 1899 and 1933.

SLATE, GEORGE LEWIS

Lilies for American gardens. New York: Charles Scribner's Sons, 1939. 258 p. illus. 23 cm. \$3.50. 4934a

Contents: Preface. Historical. The lily plant. The breeding of lilies. The classification of lilies. The distribution of lilies and their environment in nature. The soil and site in lily culture. The planting of lilies. The care of lilies. The propagation of lilies. The diseases and pests of lilies and their control. Lilies in the garden. The species and varieties of lilies. Index.

Note: This is an authoritative work for the cultivator of lilies. The point of view of the writer is that of the professional plant breeder interested largely in the developing of virus-free stocks for garden purposes. The findings of research workers regarding propagation, culture, and disease control are summarized in language for the layman.

STUCKEY, HENRY PERKINS

Southern horticulture. Atlanta, Ga.: T. E. Smith and Co., 1944. 688 p. illus. 20 cm. \$2.56. 4935

Contents (abridged): Peaches. Apples. Pecans. Grapes. Figs. Fruits for home use. Dewberries and blackberries. Strawberries. Melons. Tomatoes. Sweet peppers and potatoes. Vegetables for home use. Landscape improvement. Appendix. Index.

Note: A text mainly for use in vocational high-school courses in agriculture in the southern United States. Emphasis is placed on those enterprises which are practiced for the locality in which the book is used, and the text has been developed along the lines of the specific "jobs" involved in each production enterprise. Under each of the headings given above in the table of contents such topics are treated as the selection of the land, the planting of trees, propagation, fertilizing the orchard, soil management, cultivation and pruning, controlling insects and diseases, and harvesting and marketing. Suggestions for class study and suggested exercises follow each chapter, while selected references are given at the end of each section.

TAYLOR, KATHRYN S., AND EDITH W. GREGG

Winter flowers in the sun-heated pit, including the lean-to greenhouse as a complement to the pit. New York: Charles Scribner's Sons, 1941. 294 p. illus. 22 cm. \$3.50. 4936

Contents (abridged): The origin and development of the greenhouse. The insulated pit. Construction of the pit. Management of the pit. Fundamental gardening procedures. The lean-to greenhouse. The winter garden in action. Pitfalls. Plants for pit and cool greenhouse. Reminders. The plants: their culture and propagation. Appendix. Bibliography. Index.

Note: A detailed description of the construction and equipping of pits and greenhouses for winter gardens. An appendix contains data on the cost of construction.

TAYLOR, NORMAN, EDITOR

The garden dictionary; an encyclopedia of practical horticulture, garden management and landscape design. Boston: Houghton Mifflin Company, 1936. 888 p. illus. (part col.) 28 cm. \$7.00. 4937

Contents: Preface. Contributors. Why a dictionary? Main articles in the dictionary. How to use the garden dictionary. The garden dictionary.

Note: This is a compilation of expert knowledge and advice translated into simple terms and designed to be used as a reference book. There are 473 cultural and special articles, and almost 7,000 cross-references and miscellaneous short definitions. Almost 8,000 species, varieties, and named horticultural forms are included. Articles are written by experts and are signed.

TURNER, WAYNE ISAAC, AND VICTOR M. HENRY

Growing plants in nutrient solutions; or, Scientifically controlled growth. New York: John Wiley & Sons, Inc., 1939. 154 p. illus. (part col.) 23 cm. \$3.00. 4938

Contents: A general view of nutrient culture. Commercial advantages. Converting from soil to nutrient culture. Small-scale nutrient equipment. Chemistry and mathematics of nutrient solutions. Sources and quantities of salts used. Nutrient-solution formulas. Fundamentals of plant physiology. Essential elements

and their function in growth. Testing nutrient solutions. Diagnosing deficiency symptoms. General cultural conditions. Sources of equipment and materials. Bibliography. Specimen record sheets. Index and glossary.

Note: The information required to start and continue nutrient culture is included in this book: exact methods, formulas, typical equipment, lists of suggested sources of materials. The book also gives briefly the necessary data on elementary chemistry, botany, and plant physiology. In simple, non-technical language every step in the process is explained, both for commercial practice and for small-scale experimentation.

VAN DERSAL, WILLIAM RICHARD

Ornamental American shrubs. New York: Oxford University Press, 1942. 288 p. illus. (part col.) 22 cm. \$4.00. 4939

Contents: The looting of America. The care for native shrubs. The judgment. Where shrubs can be grown. How to grow shrubs. Rhododendrons, azaleas, mountain-laurel. Ceanothus and manzanita. Viburnums, elders, honeysuckles, and snowberry. Sumacs and their relatives. Plums, cherries, and their relatives. Hollies and hollygrapes. Dogwoods, silktassels, buckeyes, and maples. Saxifrage family. The rose family. The family of legumes. Last of the best—in the West. Last of the best—in the East. The summing up. Index.

Note: An attempt to describe some of the better ornamental shrubs native to America, and to call attention to some which have been overlooked by gardeners and others. Rather than make a selection from the 1300 species native to the United States the author solicited nominations of the best shrubs from the point of view of year-round beauty, shapeliness, and excellence of appearance, but not necessarily ease of growing. With the resulting list as a basis, he describes a number of species, giving characteristics, range, method of cultivation, etc.

WAUGH, FRANK ALBERT

Everybody's garden; the how, the why and especially the wherefore, of the home garden, with emphasis upon the interests of the average American. New York: Orange Judd Publishing Company, Inc., 1930. 396 p. illus. 24 cm. \$2.00. 4940

Contents: The spirit of the garden. Where and how. Garden planning. The lawn. Boundaries and screens. Furnishing the garden. Color schemes and other schemes. Nature's garden. Life in the garden. Trees in summer. Trees in winter. Hardy shrubs. Hardy perennials. The useful annuals. The Dutch bulbs. The rock garden. The water garden. The reserve garden. The bird garden. The subtropical garden. Indian summer. The garden after frost. The garden in winter. The home greenhouse. House plants. The vegetable garden. The fruit garden. Bush fruits. Garden grapes. Plant foods. Gardening under difficulties. Garden troubles. Index.

Note: A manual for the layman interested in developing and maintaining a home garden for either the small suburban home or the fairly large estate. Design, layout, and ornamentation of the garden are discussed, with notes on the preparation of the soil, landscaping of grades, lawn grasses, turfing, mowing, tree planting and care, hedges, vines, flowers, pools, garden statuary, and plant catalogues covering uses and cutting qualities of various species. House- and hothouse-plants are also treated and there are numerous photographs.

WILKINSON, ALBERT EDMUND

The flower encyclopedia and gardener's guide. Illustrated by Tabea Hofmann. New York: Garden City Publishing Co., 1943. 524 p. illus. 21 cm. \$0.69. 4941

Contents (abridged): The flower encyclopedia. Determining the place and type of garden. Planting the flower garden. Soil, lime, and fertilizer for flowers. Propagation of plants. Seasonal care of flower gardens. Plant growing under glass. Insects and their control. Plant diseases and their control. Miscellaneous pests and their control. Hotbed and cold frame construction. Greenhouse construction. Greenhouse hygiene. Glossary.

Note: A handy reference book for the amateur and commercial gardener. The first part of the book is encyclopedic, while the second half is a non-technical text containing useful growing data.

Vegetable Growing

BOSWELL, VICTOR RICKMAN, AND OTHERS

A study of rapid deterioration of vegetable seeds and methods for its prevention, by Victor R. Boswell, E. H. Toole, Vivian K. Toole, and D. F. Fisher. Washington, D.C.: Government Printing Office, 1940. 48 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 708) \$0.10. 4942

Contents: Introduction. Materials and methods. Environmental and physical data on seeds. Germination response to storage. Dehydration studies. Discussion. Summary and conclusions. Literature cited. Addendum.

Note: The studies described in this bulletin were undertaken in Maryland and Virginia in 1938 and 1939 on ten common vegetable seeds to determine (1) how long it takes the seed to absorb a harmful quantity of water at a given humidity and temperature and (2) how long the seed can tolerate such a moisture content and temperature before definitely measurable harmful results become evident.

KNOTT, JAMES EDWARD

Vegetable growing. Third edition, thoroughly revised. Philadelphia: Lea & Febiger, 1941. 356 p. illus. 20 cm. \$3.25. 4943

Contents: Vegetable growing. Factors affecting plant growth. Classification of vegetables. Plant-growing equipment. The seed supply. Seedage. Producing plants. Soils and their preparation for planting. Maintaining soil organic matter. Fertilizing the crop. Cropping systems. Moisture. Insect and disease control. The garden layout. Storage. The perennials. Potherbs or greens. The cole crops. The salad vegetables. The bulb crops. The root crops. Beans and peas. The potato crops. The solanaceous fruits. The vine crops. Martynia, okra and sweet corn. Marketing.

Note: A textbook for courses in agricultural schools. It is designed for students who plan to take only a single course in the subject.

NISSLEY, CHARLES HEBRON

Home vegetable gardening; with an introduction by William H. Martin; illustrated by Ruth Nissley. New Brunswick: Rutgers University Press, 1942. 246 p. illus. 19 cm. \$1.50. 4943a

Contents (abridged): The fundamentals of vegetable growing: The vegetable garden. Seed. Preparing the garden soil. Growing early plants for the garden. Common garden planting practices. Storing vegetables for winter use. Garden pests and their control. Diseases attacking vegetable crops. Relative distribution of vitamins. A list of the most important vegetables. Herb crops. Seed and seed treatment: Vegetable seed disinfection. Home selection and saving of vegetable seed.

Note: A short treatment intended for persons without education or experience in the subject who are interested in raising vegetables mainly for home use. For this class of readers the book provides a large amount of concise, practical information. A special feature is the extensive data provided for each type of popular vegetable. This information includes principal varieties for United States cultivation, recommended seed treatment, amount of seed per acre and per hundred feet of row, average yields, and data on the vitamin content, the value in calories, and other information pertaining to the value of the vegetable from the viewpoint of nutrition.

THOMPSON, HOMER COLUMBUS

Vegetable crops. Third edition. New York: McGraw-Hill Book Company, Inc., 1939. 578 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences, L. J. Cole, consulting editor) \$5.00. 4944

Contents: Vegetables and vegetable growing. Classification of vegetables. Soils and soil preparation. Manures. Soil-improving crops. Commercial fertilizers and lime. Seeds and seed growing. Plant growing and plant-growing structures. Planting vegetable

crops in the open. Cultivation. Irrigation. Rotation, succession and intercropping. Control of diseases and insects. Marketing. Storage of vegetables. Perennial crops. Potherbs or greens. Salad crops. Cole crops. Root crops. Bulb crops. The potato. The sweet potato. Beans and peas. Solanaceous fruits. The cucurbits or vine crops. Sweet corn, okra, martynia.

Note: The author offers a thorough and practical treatment of the production and handling of vegetable crops in a comprehensive discussion of the various problems incident to market gardening, truck growing, muck crop production, canning crop production, and other special types of gardening.

WARE, GEORGE WHITAKER, AND OTHERS

Southern vegetable crops, by George Whitaker Ware [and twenty-six other eminent contributors]. New York: American Book Company, 1937. 479 p. illus. 22 cm. \$4.00. 4945

Note: A book for agricultural courses and a reference manual for agricultural workers. The treatment is divided into two parts, the first devoted to principles and the second to practices. Although it is vocational in character, it gives a full, logical discussion of general principles. Selected references are listed at the end of each chapter.

WATTS, RALPH LEVI, AND GILBERT SEARLE WATTS

The vegetable growing business. New York: Orange Judd Publishing Company, Inc., 1940. 549 p. illus. 23 cm. \$3.50. 4945a

Contents: General view. Locations and soils. Seeds. Plant growing. Management. Fertility program. Planting. Cultivation and weed control. Irrigation. Insects and diseases. Harvesting, packing and marketing. Storage. Cole crops. Salad crops. Tomatoes, peppers and eggplant. Bulb crops. Greens. Root vegetables. Perennial crops. Peas and beans. Potato and sweet potato. Sweet corn. Cucurbits. Okra, martynia and herbs. Vegetable forcing.

Note: Designed for use as a textbook in agricultural colleges and as a reference book and survey of good practices for the practical grower. Large scale commercial growing is treated rather than home vegetable gardening. There is a selected bibliography. The title supersedes the first author's *Vegetable gardening*, which has been a standard work in the United States for many years.

Commercial Floriculture

LAURIE, ALEXANDER, AND D. C. KIPLINGER

Commercial flower forcing. Fourth edition. Philadelphia: The Blakiston Company, 1944. 598 p. illus. 22 cm. \$4.50. 4946

Contents: Status and development of the industry. Greenhouse construction and heating. Factors influencing plant growth. Soils. Gravel culture. Fertilizers. Reproduction. Diagnosing greenhouse ills. Major crops. Minor crops. Miscellaneous cut flower crops. Bulbs, corms, and tubers. Flowering pot plants. Foliage plants. Forcing hardy plants. Cloth houses. Wholesale marketing. Costs of production. Index.

Note: A practical book designed for use in courses and also by growers. In this edition there are extensive changes. Gravel culture has been given considerable space. The knowledge pertaining to nutrient levels for hothouse crops has been summarized in tabular form. The chapters on plant growth, soils and fertilizers, propagation, and control measures for diseases and insects have been revised. Directions for the cultural perfection of many crops have been rewritten in the light of newer knowledge and experimentation.

LAURIE, ALEXANDER, AND VICTOR H. RIES

Floriculture, fundamentals and practices. New York: McGraw-Hill Book Company, Inc., 1942. 496 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences; L. J. Cole, consulting editor) \$4.00. 4947

Contents: How plants grow. Soils. Fertilizers. Horticultural taxonomy. Soilless culture. Cold frames, hotbeds, and greenhouses. Garden design. Propagation. Lawns. Annuals. Perennials. Flowering bulbs. The rock garden. Roses. Water gardens. Woody plants. House plants. Insect pests and plant diseases. Greenhouse management.

Note: In this textbook the authors have assembled in brief form the basic information underlying the various empirical practices pertaining to the many crops and phases of ornamental gardening. The text brings together in one volume a useful combination of horticultural topics of scientific and practical nature as well as design and horticultural taxonomy.

WHITE, EDWARD ALBERT

The florist business. New York: The Macmillan Company, 1933. 426 p. illus. 22 cm. (The rural science series) \$4.00. 4948

Contents (abridged): Part I, Factors in flower production and distribution: The florist industry and its present status. Factors that have influenced the improvement of flower crops. Locating a greenhouse range. Modern greenhouses and other plant-growing structures. Types of construction and methods of building greenhouses. Greenhouse heating and management. Equipment for greenhouses. How plants grow. Soil for greenhouses. Business management and production costs. Packing and shipping plants and flowers. Insects attacking florist crops and their control. Diseases affecting florist crops and their control. Part II, Florist crops and their methods of culture: Cut-flowers grown under glass. Cut-flower crops out-of-doors. Potted and specimen plants. Index.

Note: Based on the author's earlier work, *Principles of floriculture*, New York, 1915, the present work is intended as a textbook for educational institutions where floriculture holds an important place in the curriculum, as well as a reference book for florists and home gardeners. The aim has been to place emphasis on factors which are of major importance in the production and distribution of florist crops and to record recent development in floricultural research. A number of tables giving scientific and common names and flowering dates of flower varieties is included.

Fruit Culture

AUCHTER, EUGENE CURTIS, AND H. B. KNAPP

Orchard and small fruit culture. Third edition. Edited by A. K. Getman and C. E. Ladd. New York: John Wiley & Sons, Inc., 1937. 627 p. illus. 23 cm. \$5.00. 4949

Contents: Part I, Orchard fruits: Harvesting, storing and marketing the apple, the peach, the pear, the plum, the cherry, the quince. Preparing for winter. Establishing the orchard. The growth of the tree and the forming of fruit buds. Pruning. Controlling insects and diseases. Propagating fruit plants. Pollination and fruit setting. Managing orchard soils and fertilizing the trees. Thinning fruit. Diagnosing growth conditions and prescribing treatment. Injury from cold weather. Fruit exhibits and judging. Orchard and tree score cards. Identification of varieties by leaf and tree characters. Part II, Small fruits: Growing strawberries. Growing grapes. Growing bush fruits: brambles, currants, and gooseberries, blueberries and cranberries. Appendix. Index.

Note: A book of information for orchardists and pomologists. Management problems which confront fruit growers and actual directions for performing many of the operations are covered. Extensive references are presented after each chapter, so that the student or grower in any section may obtain evidence for the statements as well as further information that may relate more specifically to his own section and conditions. Adequate attention is given to the plant and equipment for establishments in which commercial fruit growing is a major enterprise, yet the book is valuable for guidance on small projects. The main revisions in the third edition occur in the bibliographical and statistical material.

CHANDLER, WILLIAM HENRY

Deciduous orchards. With 109 engravings. Philadelphia: Lea & Febiger, 1942. 438 p. illus. 24 cm. \$4.50. 4950

Contents: Some materials essential for growth of trees and fruit. The tree and the variety. Resting buds. Growth and flower bud formation. Pollination and the setting of fruit. The growing

fruit. The mature fruit. Killing temperatures. Propagation of deciduous orchard trees. Transplanting trees from the nursery to the orchard. Deciduous tree roots and the soil. Nutrients for trees. Essential elements and some others that influence trees. Summary concerning the water supply in tree and fruit. Responses of trees to pruning. Pome fruits. Stone fruits. The mulberry and the fig. The persimmon, the northern papaw and some other fruits. Catkin-bearing nut trees. Pistachio and tung-oil trees.

Note: In this work the author discusses the processes involved in the growth and fruiting of trees, the responses to climate, rootstock, nutrient, water deficiencies, and treatment such as pruning. Most of the discussion is based on discoveries in scientific horticulture, botany, and plant and soil chemistry. The work presents a detailed, orderly system of knowledge about orchard trees and fruits that will enable the student to make more intelligent use of information gained by later experience.

FURR, JOE RUDOLPH, AND C. A. TAYLOR

Growth of lemon fruits in relation to moisture content of the soil. Washington, D.C.: Government Printing Office, 1939. 72 p. illus. 22 cm. (United States. Department of Agriculture. Technical bulletin no. 640) \$0.15. 4951

Contents: Introduction. Wilting points of soils. Range of soil moisture readily available to the plant. Experimental methods. Fruit growth in relation to moisture content of the soil. Influence of moisture content in one part of the root zone on extraction of water from soil in other parts. Effect on fruit growth of differences in irrigation level. Discussion and application of results. Summary. Literature cited.

Note: The work reported in this bulletin deals primarily with the response of lemon trees to decreasing soil moisture under orchard conditions. Both the effect of irrigating various proportions of the soil in the root zone and that of varying the intervals between irrigations are shown. The investigations were conducted in order to establish basic information for promoting better methods of applying water in practice and to provide for the most effective utilization of water by orchard trees.

GARDNER, VICTOR RAY, AND OTHERS

The fundamentals of fruit production, by Victor Ray Gardner, Frederick Charles Bradford and Henry Daggett Hooker, Jr. Second edition. New York: McGraw-Hill Book Company, Inc., 1939. 788 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences; L. J. Cole, consulting editor) \$5.00. 4952

Contents (abridged): Water relations. Nutrition. Temperature relations of fruit plants. Pruning. Fruit setting. Propagation. Geographic influences in fruit production. Glossary. Index.

Note: This book is applicable to fruit growing in most regions because it deals with fundamental factors which are always the same. It focuses attention on the conditions which make the fruit plant profitable; practices are considered only as they affect these conditions, not as ends in themselves. It is a textbook and also a handbook of reference giving reliable data on the composition of fruit plants and fruit soils, on growth and yield as affected by cultural treatments, and on many other facts essential to experimental work.

GOURLEY, JOSEPH HARVEY, AND FREEMAN SMITH HOWLETT

Modern fruit production. New York: The Macmillan Company, 1941. 579 p. illus. 24 cm. (Rural textbook series, edited by L. H. Bailey) \$6.00. 4952a

Contents: The fruit industry. The plant and its parts. Factors affecting flower formation. Site and soil for the fruit plantation. Laying out and planting the orchard. Cultural practices. Fertilizers and manures for the orchard. Water relations of fruit plants. Pruning of fruit plants. Fruit setting. Fruit thinning and alternate bearing. The handling and storage of fruits. Winter injury. Nutrient deficiencies and physiological disorders. Propagation and stocks. The origin and improvement of fruits. Orchard, vineyard, and small fruit costs. Index.

Note: A textbook and reference work for students of agriculture and practical fruit producers covering all phases of orchard-

ing and small fruit culture, with emphasis upon the general concepts of physiology, morphology, soils, chemistry, and other fundamental sciences in terms of fruit plants and their products. The general subject of insect and disease control has not been included but incidental reference is made to sprays and spray practice. The author has drawn freely upon the published literature of America and Europe and there are extensive references at the end of each chapter. The treatment of the work is from the commercial or economic viewpoint throughout.

HEDRICK, ULYSSES PRENTISS

Cyclopedia of hardy fruits. Second enlarged edition. New York: Macmillan Company, 1938. 402 p. illus. (part col.) 26 cm. \$6.00. 4953

Contents (abridged): Pome-fruits. Drupe fruits. The grapes. The brambles. Currants and gooseberries. Heath fruits. The strawberry. Miscellaneous fruits. Supplement. Nomenclature. Glossary. Index to species. Index to synonyms.

Note: For the fruit grower, amateur or professional, this cyclopedia is a scientific practical reference for identifying varieties and selecting, growing or marketing hardy tree and bush fruits. Revised and enlarged, it includes 138 new varieties, developed since the first edition. There are 16 full-page half-tone plates with 350 illustrations showing many of the varieties in cross-section.

HEDRICK, ULYSSES PRENTISS

Fruits for the home garden. New York: Oxford University Press, 1944. 171 p. illus. 22 cm. \$3.00. 4954

Contents: Fruit-garden foresight. Propagating fruits. Planting plans. The first year. Care of a fruit garden. The art of pruning. Controlling orchard pests. The apple. The pear. The peach. The plum. The cherry. The grape. The bush fruits. The bramble fruits. The strawberry. Index.

Note: This manual is addressed primarily to the gardener faced for the first time with the problem of planting a fruit garden. Soil and climate requirements are specified for each kind of fruit, together with advice on the choice of the most suitable land and the methods of improving soil conditions for the growing of fruit. Suggestions and directions are also provided on how many varieties should be planted, the correct distances between plants, and the arrangement of the garden. Details of life-span, time required between planting and fruit bearing, and harvesting methods are included.

KNAPP, HALSEY B., AND E. C. AUCHTER

Growing tree and small fruits. Second edition. New York: John Wiley & Sons, Inc., 1941. 615 p. illus. 21 cm. (The Wiley farm series; edited by A. K. Getman and C. E. Ladd) \$2.75. 4955

Contents: Tree fruits: Harvesting, storing, and marketing. Preparing for winter and determining injury from cold weather. Establishing the orchard. The growth of the tree and the forming of fruit buds. Pruning. Controlling insects and diseases. Propagating fruit plants. Managing orchard soils and fertilizing the trees. Diagnosing growth conditions and prescribing treatment. Thinning fruit. Fruit exhibits and judging. Growing small fruits: Growing strawberries. Growing grapes. Growing bush fruits. Shall I be a fruit grower? Appendix. Index.

Note: A simple, descriptive account of methods of cultivating apple, peach, pear, plum, cherry, and quince trees, and also strawberries, grapes and bush fruits. It tells how to plant the orchard, what can be done about eradicating insects and diseases, how to prune and graft, how to harvest the crops. The outstanding quality of the book is its practicality.

MARTIN, R. SANFORD

How to prune fruit trees; illustrated by the author. Hollywood: Murray & Gee, Inc., 1944. 90 p. illus. 22 cm. \$1.00. 4956

Contents (abridged): Almond. Apple. Avocado. Berries. Cherry. Espallier training. Feijoa. Figs. Grapes. Lemon. Nectarine. Orange. Pear. Pecan. Persimmon. Pomegranate. Quince. Raspberry. Walnut.

Note: This is a practical introduction to the pruning of both trees and bushes for the gardener. Many of the trees included grow in the warmer parts of the United States.

SHOEMAKER, JAMES SHELDON

Small-fruit culture; a text for instruction and reference work and a guide for field practice. With 52 illustrations. Philadelphia: The Blakiston Company, 1934. 434 p. illus. 22 cm. \$3.50. 4957

Contents: Introduction. Grape culture. Strawberry culture. Bramble-fruit culture. Currant and gooseberry culture. Blueberry culture. Cranberry culture. Index.

Note: A practical guide to modern practice in the United States. It summarizes the literature and presents information gathered from the experience of commercial growers and research specialists in addition to the author's own studies. Bibliographical references are included.

STURROCK, DAVID

Tropical fruits for southern Florida and Cuba and their uses. Jamaica Plain, Mass.: The Arnold Arboretum of Harvard University, 1940. 131 p. illus. 23 cm. (Atkins Institution of the Arnold Arboretum of Harvard University. Publications. 1) Paper, \$1.50. 4957a

Contents: Introduction. Climatic factors. Culture notes. Plant diseases. Preserves, jams, jellies, and pastes. Descriptive list: Anacardiaceae. Annonaceae. Apocynaceae. Araceae. Cactaceae. Caricaceae. Ebenaceae. Elaeagnaceae. Euphorbiaceae. Flacourtiaceae. Guttiferaceae. Lauraceae. Leguminosae. Malpighiaceae. Moraceae. Musaceae. Myrtaceae. Oxalidaceae. Passifloraceae. Proteaceae. Punicaceae. Rhamnaceae. Rosaceae. Rutaceae. Sapindaceae. Sapotaceae. Vitaceae. Improvements. Index.

Note: The main part of this handbook is a list of tropical fruits common to Florida and Cuba represented by 27 families and about 200 species. The most important ones are briefly described, together with a critical observation of their culture and a history of the individual plant.

TALBERT, THOMAS JESSE, AND A. E. MURNEEK

Fruit crops; principles and practices of orchard and small fruit culture. Philadelphia: Lea & Febiger, 1939. 345 p. illus. 24 cm. \$3.75. 4958

Contents (abridged): Fruit growing as an occupation. Fruit introduction and improvement. Propagation. Soils, locations and plantings. Irrigation and drainage. Soil management and fertilization. Pollination and fruit thinning. Pruning deciduous fruit trees. Insects of fruit crops. Diseases of fruit crops. Spraying and dusting. The pome fruits. The stone fruits. Grape culture. Strawberry culture. Cane and bush fruit culture. Nut culture. Harvesting, grading and packing. Marketing fruits.

Note: The aim of this work is to present a complete and modern view of the culture of fruit crops. It is designed to meet the needs of students in agricultural colleges as well as of progressive producers of fruit crops. The plan of presentation is that which has been followed successfully by the authors in their teaching and investigational work.

WEBBER, HERBERT JOHN, AND LEON DEXTER BATCHELOR, EDITORS

The citrus industry. With the collaboration of Elbert Thomas Bartholomew, Walter Tennyson Swingle, Homer Dwight Chapman [and others]. Berkeley and Los Angeles: University of California Press, 1943. 1048 p. illus. (part col.) 25 cm. \$7.50. 4959

Contents: Volume 1. History and development of the citrus industry, by Herbert John Webber. Plant characteristics and climatology, by Herbert John Webber. The commercial citrus regions of the world: their physiographic, climatic, and economic characters, by Herbert John Webber. The botany of citrus and its wild relatives of the orange sub-family, by Walter T. Swingle. Cultivated varieties of citrus, by Herbert John Webber. General morphology, histology, and physiology, by Elbert Thomas Bartholomew and Howard Sprague Reed. The mineral nutrition of citrus, by Homer Dwight Chapman and Walter Pearson Kelley. Seed reproduction: development of gametes and em-

bryos, by Howard Brett Frost. Genetics and breeding, by Howard Brett Frost. Bud variation and bud selection, by Archibald Dixon Shamel. Bibliography. Index.

Note: This first volume of a projected three-volume work includes knowledge basic to the citrus industry and was written by authors of long experience in the field. Climatology, geography, horticultural varieties, anatomy, physiology, reproduction, genetics, breeding are discussed in view of their application to citrus growing. The chapter on botany describes all the species of citrus. The bibliography is extensive.

Beekeeping

PELLETT, FRANK CHAPMAN

History of American beekeeping. Ames, Ia.: Collegiate Press, Inc., 1938. 213 p. illus. 23 cm. \$2.50. 4960

Contents: Beginning of American beekeeping. Langstroth's invention of the bee space. The comb honey era. The hive controversy. Introduction of the waxmoth. Smokers, excluders, etc. Wax foundation and reinforced combs. Importation of new races of bees. Invention of the honey extractor. Bees in California. Rise of commercial queen raising. Search for controlled mating. Migratory beekeeping. Beekeeper's societies and the convention period. The American bee journal. Gleanings in bee culture. Other American bee periodicals. American books on bees. Pioneer commercial honey producers. The trade in live bees. Improving bee pasture. Sweet clover and specialization. Efforts toward disease control. Beekeeping memorials. Adulteration of honey and pure food legislation.

Note: This history is traced from the days when bees were kept in "bee gums" and straw "skeps" to the day when science came to the aid of the beekeeper, and honey flowed from apiaries by the carload. The author describes the evolution of new bee equipment, the ever-waging fight against disease, the trade in "bees by the pound", of how the battle against adulteration of honey led to pure food legislation, and many other advances contributing to the development of the honey industry. For the beekeeper, the commercial honey producer, and the entomologist it contains a wealth of valuable information.

PELLETT, FRANK CHAPMAN

A living from bees. New York: Orange Judd Publishing Company, 1943. 304 p. illus. 20 cm. \$2.00. 4961

Contents: Beekeeping, business or sideline. The beginning beekeeper. Keeping bees in town. The honeybee family. Activities within the hive. The honey harvest. Bee pasture. Regional differences. About beehives. Tools for the beekeeper. When bees must be fed. Use of comb foundation. Queen rearing. Making of increase. Through the year in the apiary. Getting the honey to market. Diseases and enemies of bees. Wintering the bees. Some curious old customs. Famous American beekeepers. Glossary of beekeeping terms. Index.

Note: A simply written practical book for beginners in beekeeping. Some of the material is taken from periodical articles and previous books by the author.

ROOT, AMOS IVES, AND OTHERS

The ABC and XYZ of bee culture; an encyclopedia pertaining to scientific and practical culture of bees, by A. I. Root, revised and rewritten by E. R. Root, assisted by H. H. Root and M. J. Deyell. 1945 edition. Medina, O.: The A. I. Root Company, 1944. 720 p. illus. 23 cm. \$2.75. 4962

Note: A cyclopedia presenting in alphabetical order approximately 1,000 articles and definitions of terms relative to the art of bee culture. The material is based on the cumulative experience of three generations of the Root family in the practical culture of bees, the present volume being approximately the thirtieth edition of the original work which first appeared in 1877. Considerable space is devoted to the commercial aspects of the subject, such as the bottling and marketing of honey, beeswax, breeding stock, shipping bees, sale of queens through the mails, and related topics. There are also detailed treatments of the chemistry of honey, its food and medicinal values, the control and treatment of diseases among bees, the manipulation

of colonies, queen-rearing, large-scale extraction of honey, filtration, use of honey in cooking, recipes, foundation and special structure of various combs and frames, brood and brood-rearing, nectar-yielding plants, evolution of bee hives, and other subjects. There are a large number of photographs and drawings and an extensive index. Some of the articles are followed by short bibliographies. A double-column page format is used.

Animal Husbandry

ANDERSON, ARTHUR LAURENCE

Introductory animal husbandry. New York: The Macmillan Company, 1943. 777 p. illus. 24 cm. \$4.00. 4963

Contents (abridged): Livestock in agriculture. Beef cattle. Dairy and dual purpose cattle. Swine. Sheep. Horses and mules. References. Index.

Note: A comprehensive discussion of the principles of livestock production and marketing in the United States. Primarily, the book is for use in first courses in agricultural colleges.

COFFEY, JOEL S., AND LYMAN E. JACKSON

Livestock management. Edited by R. W. Gregory. Philadelphia: J. B. Lippincott Company, 1940. 500 p. illus. 22 cm. \$2.40. 4964

Contents: The livestockman. Efficiency in dairy farming. Profitable beef-cattle production. Profitable hog raising. Profitable sheep production. The horse on the farm. The farm poultry flock. Principles of marketing livestock. Business management in livestock production. Principles of breeding livestock. Genetics in livestock breeding. Principles of feeding livestock. Principles of housing livestock. Principles of disease and parasite control. Wild-life conservation. Appendix: American livestock record associations. Colleges of agriculture and experiment stations. Index.

Note: A clearly written, modern textbook for agricultural schools and colleges. There are over 50 tables of statistics and short reference lists are given in each chapter.

DOWELL, AUSTIN ALLYN, AND KNUTE BJORKA

Livestock marketing. New York: McGraw-Hill Book Company, Inc., 1941. 534 p. illus. 23 cm. \$4.00. 4965

Contents: Livestock marketing problem. Livestock supply areas. Meat consumption. Livestock slaughter. Country dealers, concentration yards, and assembly points. Public markets. Direct marketing. Local cooperative shipping associations. Cooperative commission agencies at public markets. Livestock auctions. Transportation of livestock. Shrinkage. Bruising, death, and crippling. Grade standards for livestock and meat. Market news and market statistics. Livestock prices. Price differentials. Regulation and supervision of the packing industry and livestock marketing. Selling livestock on the basis of guaranteed yield. Selling on the basis of grade and weight. Cold-storage lockers. Wholesale distribution of meats. Retail distribution of meat. Looking into the future. Index.

Note: This book is designed primarily for use as a text for students in agricultural colleges. The history and development of the public market are discussed with the emphasis upon the specialization of function in production and distribution that has taken place in recent years in the United States. The literature of the subject is cited in bibliographical footnotes and lists of selected readings.

EDMONDS, JAMES LLOYD, AND OTHERS

Producing farm livestock, by James Lloyd Edmonds, William Ernest Carroll, William Garfield Kammlade, William Barbour Nevens, and Roscoe Raymond Snapp. New York: John Wiley & Sons, Inc., 1932. 439 p. illus. 21 cm. (Wiley farm series; A. K. Getman & C. E. Ladd, editors) \$2.50. 4966

Contents: Introduction. Part I, Organization: Establishing and organizing a dairy cattle enterprise. Establishing and organizing a beef cattle enterprise. Establishing and organizing a horse

enterprise. Establishing and organizing a sheep enterprise. Establishing and organizing a swine enterprise. Part II, Feeding: Feeding dairy cattle. Feeding beef cattle. Feeding and exercising horses. Feeding sheep. Feeding swine. Part III, Management: Managing livestock. Managing dairy cattle. Managing horses. Managing beef cattle. Managing sheep. Managing swine. Marketing livestock. Part IV, Improvement: Improving livestock. Exhibiting livestock. Index.

Note: An elementary book emphasizing the managerial or organization point of view. It provides a systematic and well-arranged treatment of a wide range of topics, including not only the procedures necessary to make production in itself successful, but also those necessary to give it its proper relation to the other activities of the farm. The authors have also written for use with this text *Workbook in producing farm livestock*, New York: John Wiley & Sons, Inc., 1938, 100 p., paper, \$1.00.

LAMBERT, WILLIAM VINCENT, AND FRED F. MCKENZIE

Artificial insemination in livestock breeding. Washington, D.C.: Government Printing Office, 1940. 68 p. illus. 23 cm. (United States. Department of Agriculture. Circular no. 567) \$0.10.

4967

Contents: Introduction. Historical aspects. Uses of artificial insemination: Increasing the use of valuable proved sires. Increasing the percentage of conceptions. Extending the period of usefulness of valuable sires. An effective aid in disease control. Increasing the use of sires in monogamous species. Overcoming difficulties due to difference in size. Obtaining species crosses when natural mating is impracticable. Effecting conception in females that do not conceive after copulation or that refuse the male. Making advantageous use of young sires. Use in breeding associations and large herds. Limitations of artificial insemination. Procedures involved in artificial insemination: Collection of semen by approved methods. Collection of semen by obsolete and other methods. Examination of semen. Handling and transporting semen after collection. Problems of insemination: Relation to estrus and ovulation. Place of injection and quantity of semen. Conditioning the male for breeding. Frequency of service and reproductive capacity. The practice of artificial insemination: General considerations. Cleaning and preparing the apparatus. General equipment needed. Horses and asses. Cattle. Sheep and goats. Swine. Dogs. Foxes. Rabbits. The chicken and turkey. Use of dummies. Use of diluters. Literature cited.

Note: This circular is intended as a summary manual on the subject of artificial insemination in livestock breeding, covering its uses and methods of practice. The list of literature cited includes 76 articles from scientific journals in five languages.

LUSH, JAY LAURENCE

Animal breeding plans. Second edition. Ames, Ia.: The Iowa State College Press, 1943. 437 p. illus. 24 cm. \$3.50.

4968

Contents: Background of animal breeding. Genetic principles in animal breeding. Breeding plans based on selection. Breeding plans based on relationship. Breeding plans based on somatic likeness. Other topics concerning breeding plans. Topics relating to reproduction. Summary. Index.

Note: This book relates genetics with animal breeding in a practical way. Besides presenting the historical background of animal breeding and showing how the results of animal breeding practices are determined by the laws of genetics, actual breeding plans and mating systems are outlined in detail. From this book a practical breeder with a background in genetics will understand what would probably result from each practice he might follow. Especial attention is given to several new plans, such as line-breeding, which a breeder ordinarily does not begin to try until after years of experience. Bibliographical references accompany most of the chapters.

MAYNARD, LEONARD AMBY

Animal nutrition. New York: McGraw-Hill Book Company, Inc., 1937. 483 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences; L. J. Cole, consulting editor) \$4.00.

4969

Contents: The expanding field of nutrition. The animal body and its food. Some physical bases of life processes. The carbohydrates and their metabolism. The lipids and their metabolism. The proteins and their metabolism. The inorganic elements and their metabolism. The vitamins. Feeding experiments. The determination of digestibility. Nutritional balances. Measures of total nutritive energy. The fasting catabolism. Maintenance. Growth. Reproduction. Lactation. Work production.

Note: Presents the principles of nutrition and their applications, with special reference to the feeding of farm animals. The essentials of nutritional chemistry and physiology are presented and particular attention is given to the contributions of the newer knowledge of nutrition to feeding practice.

MORRISON, FRANK BARRON

Feeds and feeding. A handbook for the student and stockman. Twentieth edition, unabridged. Ithaca, N.Y.: The Morrison Publishing Company, 1936. 1050 p. illus. 23 cm. \$5.00.

4970

Contents (abridged): Part I, Fundamentals of animal nutrition: The various food nutrients. Digestion, absorption, and uses of food. Measuring the usefulness of feeds. Maintaining farm animals. Proteins, minerals, vitamins. Growth, reproduction, fattening. Production of milk, work, and wool. Part II, Feeding stuffs: Pasture and hay. Silage and soiling crops. Legumes for forage. Indian corn and the sorghums. Hay and pasture grasses. Roots, tubers, and miscellaneous forages. Cereals, other seeds and their by-products. Manurial value of feeding stuffs. Part III, Feeding farm animals: Feeds for horses and mules. General problems in dairy husbandry. Feeds for dairy cows. Feeding and caring for dairy cows. Cost of milk production. General problems in beef production. Feeds for beef cattle. General problems in sheep production. Feeds for sheep. General problems in swine husbandry. Feeds for swine. Appendix. Index.

Note: This comprehensive work presents in a simple and concise manner the most important facts concerning the feeding, care, and management of the various classes of larger farm animals, together with full information concerning the composition, use, and value of the many different feeding stuffs, especially those of importance in the United States. The appendix gives a large number of tables showing the average composition and content of digestible nutrients and mineral constituents in all important American feeding stuffs. The volume is intended both as a textbook for students in agricultural colleges and as a reference source for the large-scale and medium-scale live-stock raiser. The twentieth edition incorporates new methods and practices developed during the period 1929-1936, based on recent literature of the field and on new experiments. There are study questions and lengthy bibliographies at the end of each chapter. The author has also published a shorter version of the present work, under title *Feeds and feeding abridged; adapted and condensed from Feeds and feeding (20th edition)*; seventh edition, Ithaca, N. Y.: Morrison Publishing Company, 1937, 503 p., \$2.75.

NORDBY, JULIUS EDWARD, AND OTHERS

Livestock judging handbook, by Julius E. Nordby, W. Malcolm Beeson and David L. Fourn. Danville, Ill.: The Interstate Printers and Publishers, 1943. 352 p. illus. 22 cm. \$2.60.

4971

Contents: Part I, Judging beef cattle: Beef type. Breed characteristics. Part II, Judging draft horses and mules: Breed characteristics. Judging of mules. Part III, Judging sheep: Mutton type. Fine-wool type. Breed characteristics. Part IV, Judging swine: Meat type. Bacon type. Breed characteristics. Part V, Judging dairy cattle. Index.

Note: A textbook for students of vocational agriculture of high school grade. It presents the subject in a brief and direct manner and illustrated with a large number of photographs showing the modern types of market and breeding animals.

NORDBY, JULIUS EDWARD, AND HERBERT E. LATTIG

Selecting, fitting, and showing beef cattle; dairy cattle; horses; poultry; sheep; swine. Third edition. Danville, Ill.: The Interstate Printers and Publishers, 1939. 6 v. illus. 20 cm. \$1.00, each volume.

4972

Note: This series of six booklets of slightly more than one hundred pages each is intended for the use of students of agriculture and vocational agriculture, and for 4-H Club members. The booklets should also be helpful to teachers in vocational agriculture, extension workers in charge of 4-H Club activities, and students in the various courses of animal husbandry in agricultural colleges. Each presents a short summary of the most important facts relating to such topics as breed type, breed character, classification basis, distinctive characteristics of various breeds, feeding and management, preparing the coat of hair, trimming, and details of handling animals at the fair grounds or other exhibit. The booklets may be purchased separately, each being devoted to a single class of farm animal. There are indexes in each booklet.

PETERS, WALTER HARVEST

Livestock production. New York: McGraw-Hill Book Company, Inc., 1942. 450 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences; L. J. Cole, consulting editor) \$3.50. 4973

Contents: Section i, The field of animal production: Improvement of animals through breeding. Progress in animal feeding. The marketing of livestock. Selecting the livestock enterprise. Judging livestock. Section ii, Beef cattle production: Products and adaptations of beef cattle. The management and care of beef cattle. Judging beef cattle. Market classes and grades of cattle. Section iii, Dairy cattle production: Breeding dairy cattle. Management and care of dairy cattle. Judging dairy cattle. Section iv, Swine production: The products and adaptations of swine. Swine breeding. The management and care of swine. Judging swine. Market classes and grades of swine. Section v, Sheep and goat production: The products and adaptations of sheep and goats. Breeding sheep and goats. The management and care of sheep. Judging sheep. The market classes and grades of sheep. Section vi, Horse and mule production: Breeding horses. The management and care of horses. Judging horses. Mule production.

Note: A textbook especially suited for use in the beginning course in animal husbandry in agricultural colleges. The chapters on market classifications, grading, and marketing are designed to train the student to evaluate animals accurately on the basis of their commercial worth.

RENNER, FREDERIC GORDON, AND OTHERS

A selected bibliography on management of western ranges, livestock, and wildlife, by F. G. Renner, Edward C. Crafts, Theo C. Hartman, and Lincoln Ellison. Washington, D.C.: Government Printing Office, 1938. 468 p. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 281) \$0.45. 4974

Contents: Foreword. Range plants. Range management. Range livestock. Range influences. Range and livestock economics. Wildlife management. Range research. Range education. Author index.

Note: This bibliography was designed to bring together the more important references to publications relating directly to western grazing lands, the domestic livestock and wildlife produced thereon, and the management of these lands, livestock, and wildlife in the 17 western states and Alaska, which comprise the range country, excluding eastern Texas and eastern Oklahoma. Published reports on work in other regions have not been included unless applicable to western range problems. The book is divided into sections and sub-sections according to subject. At the head of each section is a descriptive note indicating the character of the references included within the section. A total of 8274 items is listed.

RICE, VICTOR ARTHUR

Breeding and improvement of farm animals; with chapters on the endocrine basis of reproduction and artificial insemination, by Frederick Newcomb Andrews. Third edition, fourth impression. New York: McGraw-Hill Book Company, Inc., 1942. 750 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences; Leon J. Cole, consulting editor) \$5.00. 4974a

Contents: Animal breeding—present and past. Early man and animal domestication. Animal origins and progression. The male's part in reproduction. The female's part in reproduction. The endocrine basis of reproduction and lactation, by Frederick N. Andrews. Fertility. Reproductive efficiency. Parturition. Sterility. Artificial insemination, by Frederick N. Andrews. History and problems of genetics. The principles of heredity. The principles of variation. Statistical analysis of variation. Sex determination. Systems of breeding—unrelated animals. Systems of breeding—related animals. General considerations in selection. Selection in dairy cattle. Selection in horses. Selection in meat animals. Retrospect and prospect. Appendices: Further references to inheritance studies in animals. Livestock record associations. Name index. Subject index.

Note: A thorough book on the subject. It is designed both for the use of students in intermediate and advanced courses in agricultural colleges and for scientifically trained farmers, county agents, and others concerned with stock breeding. The literature of the subject is surveyed in the text and is referred to in extensive bibliographies appended to the chapters. This edition contains a large amount of new material.

SANDERS, ALVIN HOWARD

Red, white and roan. Stories relating to the origin of the Shorthorn breed of cattle in Great Britain, its early introduction into America, and its growth in popularity throughout the United States in recent years. Chicago: American Shorthorn Breeders' Association, 1936. 630 p. illus. 21 cm. \$2.75. 4975

Contents: In the beginning. Days of international folly. Aberdeenshire's great contribution. Scotch blood in general use. The beef type extends its gains. An eventful era. The World War brings a boom. The tide rolls on. Champions on parade. Polled Shorthorns developed. Milking Shorthorns. The round up.

Note: A continuation of the author's earlier work, *Shorthorn cattle*, Chicago, 1918, now out of print. The present work is limited largely to the development of some of the more important phases in the progress of the breed in the United States in the past three decades, with only brief references to the Dominion Shorthorn of Canada and the present wide distribution of the breed in Great Britain, Argentina, and other countries. The account is partly narrative and anecdotal, with histories of champion sires, tradings, country fairs, prizes, genealogies, and market prices receiving most of the attention. The scientific aspect of breeding is not touched upon.

SEMPLE, ARTHUR TRUMAN, AND OTHERS

A pasture handbook, by A. T. Semple, H. N. Vinall, C. R. Enlow, and T. E. Woodward. Washington, D.C.: Government Printing Office, 1942. 90 p. illus. 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 194) \$0.10. 4976

Contents: Foreword, by Henry A. Wallace. Establishment, maintenance, and improvement of pastures: Considerations in establishing pastures. Kinds of pastures. Permanent pastures. Supplemental pastures. Annual pastures. Vitality of seeds of pasture plants. Utilization of pastures: Pastures compared with harvested crops in cost of feed. Pastures compared with harvested crops in yield of nutrients. Quality of meat from livestock fattened on grass. Influence of pastures on health of livestock. Feed value of immature pasturage. Preserving immature pasturage. Changes in feed value as plants mature. Mineral content of pasturage. Proteins and other nutrients. Vitamin content of pasturage. Palatability a factor in pasture management. Grazing practices. Shade, shelter, and water. Rotation grazing. Hohenheim system of pasture management. Use of permanent pastures in winter. Precautions against diseases and parasites. Stock-poisoning plants. Plants sometimes injurious. Pastures for beef and dual-purpose cattle. Pastures for dairy cattle. Pastures for horses and mules. Pastures for sheep and goats. Pastures for swine. Pastures for poultry. Index.

Note: This publication was originally issued in 1934 and was slightly revised in 1942. It is intended to furnish helpful information to farmers who wish to make their pastures and meadows more productive by growing adapted grasses and legumes, by properly fitting seedbeds, and by liming, inoculating, and fertilizing.

SNAPP, ROSCOE RAYMOND

Beef cattle; their feeding and management in the corn belt states. Third edition, entirely revised. New York: John Wiley & Sons, Inc., 1939. 550 p. illus. 23 cm. \$4.00. 4977

Contents (abridged): Part I, General aspects of the beef cattle industry. Part II, The breeding herd. Part III, Fattening cattle for market. Part IV, General problems in beef production. Index.

Note: A textbook for use in agricultural schools and colleges. The principles and theories presented are accompanied by the data on which the author's opinion is based. Bibliographies are included in each chapter. The third edition contains information on new feeding methods based on researches made between 1930 and 1939, but is otherwise not greatly different from earlier editions.

STODDART, LAURENCE A., AND ARTHUR D. SMITH

Range management. New York: McGraw-Hill Book Company, Inc., 1943. 547 p. illus. 23 cm. (American forestry series; Walter Mulford, consulting editor) \$5.00. 4978

Contents: Place of the range industry in national economy. Beginnings and development of the range livestock industry. Development of land policies. The physical features of western United States affecting range use. Grazing regions of the West. The ecology and physiology of plants in relation to grazing. Nutrition in relation to range management. Technical problems in range management. Range survey and management planning. Importance of livestock numbers and season of grazing in range conservation. Kind and breed of livestock for range grazing. Livestock management systems for range conservation. Range development. Artificial seeding on range lands. Effects of burning upon range land. Soil and water conservation on range lands. Poisonous plant problems on the range. Relationship of native fauna to ranges and range use. Range economics. Administration and management of range lands.

Note: Regarding conservation as a means toward maximum range productivity, this book emphasizes vegetation, water, and soil, and discusses livestock management and factors, both physical and economic, which lead toward efficient meat production. Faults of many widely accepted range management practices are pointed out and advances are examined.

VAUGHAN, HENRY WILLIAM

Breeds of live stock in America. Columbus, O.: College Book Company, 1931. 780 p. illus. 23 cm. \$3.75. 4979

Contents (abridged): Part I, Cattle, classification of breeds: Shorthorn. Polled shorthorn. Hereford. Polled Hereford. Aberdeen-Angus. Galloway. Highland and Brahman. Holstein-Friesian. Jersey. Guernsey. Ayrshire. Brown Swiss. Canadian and other breeds. Red polled. Milking shorthorn. Devon. Part II, Sheep and goats, classification of breeds: American Merino. Delaine Merino. Rambouillet. Southdown. Shropshire. Hampshire. Oxford Down. Dorset. Cheviot. Leicester. Cotswold. Lincoln. Corriedale and others. Romney and others. Angora goat and milk goat. Part III, Swine, classification of breeds: Berkshire. Poland-China. Duroc-Jersey. Chester White. Hampshire. Yorkshire. Tamworth. Hogs not widely distributed in America. Part IV, Horses, ponies, and jacks, classification of breeds: Arabian. Thoroughbred. American trotter. Morgan. American saddle horse. Coach breeds. Shetland pony. Percheron. Belgian. Shire. Clydesdale. Suffolk. American jack.

Note: A comprehensive summary of the type, characteristics, properties, and adaptability of the various breeds of live stock in the United States and Canada, written for the breeder of purebred and commercial stocks and for the student of animal husbandry, as well as the live-stock dealer, feeder, dairyman. Emphasis is placed on modern type and characteristics although a study of the origin and history of the various breeds is also presented as a background for the student and as an indication of the most successful blood lines within the breeds. The strong points of each breed are mentioned and the features in which individuals are most likely to deviate from the desired type are stated. Prize winning champions are illustrated and described and typical pedigrees are included.

VAUGHAN, HENRY WILLIAM

Types and market classes of live stock. Fourth revision, twenty-second edition. Columbus, O.: College Book Company, 1942. 608 p. illus. 24 cm. \$3.75. 4980

Contents (abridged): Part I, Cattle: Beef type. The beef carcass. Packinghouse by-products. The value of type in beef making. Markets and marketing. Fashions in market cattle. Selection of feeder steers. Classes and grades of cattle. Breeding beef cattle. Dairy type. Secretion of milk. Breeding for milk production. Dual-purpose cattle. Part II, Sheep: Mutton type. The Merino or fine-wool type. Mutton carcass and the pelt. American sheep markets. Classes and grades of sheep. Wools and wool growing. Breeding. Part III, Swine: The American or lard-type hog. Bacon-type hog. Hog carcass. Hog markets and pork packing. Classification. Swine breeding. Part IV, Horses and mules: Brief anatomical study of the horse. Some important facts concerning the horse. The draft horse. The carriage or heavy-harness horse. The roadster or light-harness horse. The running horse or thoroughbred. Five-gaited and three-gaited saddle horses. The hunter and polo pony. Market classes. Breeding. The mule. Market classes of mules. Unsoundness in the horse. Index.

Note: Presents in concise form the facts and information a beginner in the field of animal husbandry should know, leading up to, but not including, a study of breeds. The latter subject is covered in the author's *Breeds of livestock in America*, Columbus, O., 1941 (see above). The present work presents the study of beef cattle and other livestock from the standpoint of the value of the animal at the market, both on foot and in the carcass, and proceeds from that to a study of cattle in the feedlot and finally the selection and operation of the breeding herd. The student is shown the methods of judging the animals on various practical points and the necessity of using good purebred sires. Many of the photographs are from United States Department of Agriculture publications.

WILLIAMS, DAVID WILLARD

Beef cattle production in the South. Danville, Ill.: The Interstate Printers and Publishers, 1941. 442 p. illus. 22 cm. \$2.00. 4981

Contents: General considerations in beef production. Historical development and distribution. Judging beef cattle. Breeds of beef cattle. Breeding beef cattle. Feeds and feeding. Feeding—general considerations. Market classes and grades. Marketing beef cattle. Handling and management practices. Showing beef cattle. Pastures. Sanitation, parasites, diseases. Beef consumption. Equipment for beef production. Appendix. Glossary of terms. Selected references. Index.

Note: A textbook for students of vocational agriculture of high school grade, as well as for prospective and beginning farmers. It presents factual material as a basis for developing sound programs and practices on their individual farms or ranches in the southern United States.

WINTERS, LAURENCE MERRIAM

Animal breeding. Third edition. New York: John Wiley & Sons, Inc., 1939. 316 p. illus. 23 cm. \$3.50. 4981a

Contents: The economic importance of animal improvement. History. The reproductive organs. The breeding cycle and the sex hormones. Gametogenesis. Artificial insemination. Fertilization and prenatal development. The role of heredity. Fundamental Mendelism and animal breeding. Extensions of Mendel's laws and animal breeding. Lethals. Sex. Two popular concepts regarding heredity, percentage of blood and prepotency. Selection. Purebred breeding. Grading. Inbreeding. Crossbreeding. Fertility. Community breeding. Looking forward. Index.

Note: The chief objective of this present edition is to present to the student the more modern philosophy of animal breeding. Pertinent literature is reviewed and a comprehensive bibliography included. Some fundamentals are reviewed, for purposes of interpretation. Four new chapters are included on fertilization and prenatal development, lethals in farm animals, purebred breeding, and future developments in animal breeding. Recent information has been added on the sex hormones, artificial insemination, Mendelism and the extensions of Mendel's laws, selection, grading, inbreeding, and crossbreeding. For those who wish an equally scientific, but more simply written treatment of animal breeding, the author has also prepared an *Introduction to breeding farm animals*, New York: John Wiley & Sons, Inc., 1942, 250 p., \$2.00, offering an elementary discussion based upon the physiology of reproduction and genetics.

Dairy Cattle and Dairy Management

ECKLES, CLARENCE HENRY

Dairy cattle and milk production. Third edition. Revised by Ernest L. Anthony and Leroy S. Palmer. New York: The Macmillan Company, 1939. 520 p. illus. 22 cm. \$3.90. 4981b

Contents: Introduction. Origin and classification of domesticated cattle. The dairy type. Holstein-Friesians, Jerseys, Guernseys, Ayrshires, Brown Swiss, Minor breeds. Dual-purpose cattle. General considerations in selecting a breed. Selection of the individual cow. Selection of the cow by records. Selection, care and management of the sire. Cattle breeding. Calf raising. Factors influencing growth and development of dairy heifers. Raising the dairy heifer. Pure-bred herds. The business side of the purebred business. Care and management. Milking factors influencing the quantity and quality of milk. Common ailments of cattle. Feeding for milk production. Characteristics of common feeds. The feeding standard and the calculation of rations. The silo and silage. The soiling system and soiling crops. Stables for cows. Handling manure—material for bedding. Appendixes: Digestible nutrients in feeds. Number and kinds of cattle in United States. Gestation table. Estimated weight of settled corn silage. Score card for Ayrshire breed, Brown Swiss breed, Guernsey breed, Holstein breed, Jersey breed.

Note: A standard compilation of essential information on the dairy cow, intended for use as a textbook for students of agriculture and for practical use by dairymen. This edition has been revised and expanded and includes new material on breeding, factors influencing growth, feeding and feedstuffs, silos, silage, milking, and factors influencing the composition of milk.

ESPE, DWIGHT LEONARD

Secretion of milk. Ames, Iowa: The Iowa State College Press, 1941. 294 p. illus. (part col.) 23 cm. \$3.00. 4981c

Contents: Phylogenetic development of the mammary gland. Anatomy of the udder. Theory of milk secretion. Factors affecting the amount and composition of milk. Nervous control. Hormonal control. Miscellaneous factors related to milk secretion. Effect of feed on the amount and composition of milk. Literature cited. Index.

Note: This book treats in detail the theoretical problems of milk production. Part I deals with the gross and microscopic anatomy of the udder, its blood lymph and nerve supply; Part II with the physiology of milk secretion; and Part III with the influence of individual nutrients on the composition of milk. Numerous illustrations show the differences in shape and attachment of the udder, and picture in detail its internal structure. Some illustrations of gross anatomy aid the reader in determining correlation between type and production. Still others show internal structure that will help in visualizing changes in the udder at calving time as well as certain pathological conditions. The book is for agricultural students, dairy farmers, and others concerned with dairy cattle.

FARRALL, ARTHUR WILLIAM

Dairy engineering. New York: John Wiley & Sons, Inc., 1942. 405 p. illus. 23 cm. \$4.00. 4982

Contents: Physical and chemical properties of milk. Simple mechanical principles. Power transmission. Electrical power and equipment. Hydraulics and pumping. Heat measurement, transfer and control. Steam and its use in the dairy. Principles of refrigeration. Insulation and cold-storage rooms. Heaters—coolers and heat-exchange equipment. Ice-cream freezing equipment. Homogenizers. Pasteurizing equipment. Evaporating and drying equipment. Can washing and sterilizing equipment. Bottle washers and fillers. Cream and butter handling equipment. Cheese and casein plant equipment. Equipment maintenance. Pipe, pipe fittings, fitting and soldering. Dairy plant design, layout and utilization. Appendix (tables). Index.

Note: A comprehensive modern treatise on dairy machinery and engineering. It emphasizes the principles of operation of all the chief types of dairy equipment, and presents data on the selection, operation, and management of such equipment, to assure maximum efficiency and long life. The fundamental engineering principles which apply to dairy equipment are clearly

and simply explained in non-technical language. Line drawings, flow diagrams, cross-sections of machines, and half-tones illustrate the text.

FOHRMAN, MILTON HENRY, AND R. R. GRAVES

Experiments in breeding Holstein-Friesian cattle for milk- and butterfat-producing ability, and an analysis of the foundation cows and of the first outbred generation. Washington, D.C.: Government Printing Office, 1939. 82 p. illus. 22 cm. (United States. Department of Agriculture. Technical bulletin no. 677) \$0.15. 4983

Contents (abridged): Introduction: Breeding projects with dairy cattle. Procedure for conducting the breeding projects. Deciding which records to use. Analysis of the foundation cows in the Holstein-Friesian project and of the first outbred generation. Present status of the Holstein-Friesian breeding project. Summary and conclusions.

Note: The purpose of this bulletin is to report the outcome of certain experiments on a herd of Holstein-Friesian cattle conducted over a period of years beginning in 1919 at the dairy station at Beltsville, Maryland, with a view to affording breeders and dairy farmers a more complete understanding of the laws of heredity as they apply to the breeding of dairy cattle for economical and profitable production of milk and butterfat.

FRASER, WILBER JOHN

Dairy profit. Danville, Ill.: The Interstate Printers and Publishers, 1940. 270 p. illus. 24 cm. \$1.80. 4984

Contents (abridged): Oxcart dairying is still with us. The dairyman's guide. Maintenance is the foundation of milk production. Scant feed limits profit. Raising low protein increases profit. Milk and money in herd comfort. The economic significance of proportionality. Objectives in sideline dairying. Profitable objectives for the grade herd. The basic requirements of economical feeding. Give pasture a chance. Over the top with alfalfa pasture. Poverty-stricken pasture land. Roughage lessons from the West. Fill up thin cows with alfalfa. Roll down the right roughage. Smaller grain acreage, more good roughage, more profit. Profit milk tops the can. Proportionality and economy indispensable to top profit. Lifting life profits above the average. Widening horizons. Seeing life steadily and seeing it whole. Index.

Note: A concise guide to good dairy practices, intended not only for the student of vocational agriculture but for the general farmer. Stress is placed upon the part played by proper balance of factors in profitable production, or, as the author terms it, the "principle of proportionality." A large part of the material originally appeared in *Hoard's dairyman*, a trade publication.

GRAVES, ROY RALPH, AND OTHERS

Feeding dairy cows on alfalfa hay alone, by R. R. Graves, J. R. Dawson, D. V. Kopland, A. L. Watt, and A. G. Van Horn. Washington, D.C.: Government Printing Office, 1938. 47 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 610) \$0.10. 4985

Contents: Introduction. Review of the literature. Experimental procedure. Production of milk and butterfat. Feed and nutrient consumption. Effects of feeding alfalfa hay alone on condition of the cows and on the milk. Influence of exclusive ration of alfalfa hay on percentage of fat in the milk. Abnormal flavors and odors in the milk. Economic phase of exclusive feeding of alfalfa hay. Summary and conclusions. Literature cited.

Note: This bulletin gives the results of feeding 15 Holstein-Friesian cows throughout 26 lactation periods entirely upon alfalfa hay. The purpose of the experiments, which were conducted by the United States Bureau of Dairy Industry, was to determine the effect of such a diet upon milk production and the condition of the cows.

GRAVES, ROY RALPH, AND OTHERS

Milk and butterfat production by dairy cows on four different planes of feeding, by R. R.

Graves, George Q. Bateman, J. B. Shepherd, and George B. Caine, in cooperation with the Utah Agricultural Experiment Station. Washington, D.C.: Government Printing Office, 1940. 36 p. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 724) \$0.10. 4986

Contents: Introduction. Experimental procedure. Milk and butterfat production records. Relative individual production of the four rations. Factors affecting production and reproduction. Summary and conclusions.

Note: This bulletin presents the results of a feeding experiment with 12 Holstein-Friesian dairy cows at the Utah Agricultural Experiment Station during the period 1928-1935. The object of the experiment was to obtain comparative data on the yield, health, and reproductive ability of the cows when fed full-grain rations and three other rations.

GRAVES, ROY RALPH, AND OTHERS

Relative values for milk production of hay and silage made from immature pasture herbage, by R. R. Graves, J. R. Dawson, and D. V. Kopland. Washington, D.C.: Government Printing Office, 1938. 32 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 649) \$0.05. 4987

Contents: Introduction. Purpose and plan of the experiment. Experimental procedure. Production of milk and butterfat. Feed and nutrient consumption. Changes in weights of cows during lactations on the grass-hay, the grass-silage, and the full-feed rations. Health of the cows. Summary and conclusions.

Note: This bulletin gives the results of experimental work carried out at the Huntley (Montana) field station of the Bureau of Dairy Industry with a view to showing (1) the comparative value for milk production of hay and of silage, each of which was made from immature pasture grass, rather than mature grass, and fed as the sole ration for entire lactation periods; (2) the relative production of cows fed exclusively on immature-grass hay or immature-grass silage as compared to their production on a ration of grain, alfalfa hay, corn silage, and pasture; and (3) the effect of feeding the grass hay or the grass silage, as a sole ration and for long periods, on the health and general condition of the animals.

GULLICKSON, THOR WILHELM

Feeding dairy cattle. St. Paul, Minn.: Webb Book Publishing Company, 1943. 223 p. illus. 20 cm. \$2.50. 4988

Contents: Factors affecting modern dairying. Digestion and the digestible content of feeds. Factors affecting the nutritive value of feeds. Feed requirements of dairy cattle. Factors to consider in calculating rations. Barn feeding. Feeding the dairy herd on pasture. Feeding and managing practices. Feeding and management of dairy calves, heifers and bulls. The feed supply. Silage. Hay and hay-making. Characteristics, properties, and nutriment values of feeds. Appendix. Index.

Note: This brief treatise is intended for use as a textbook in dairy-cattle feeding courses of vocational school or elementary college grade. It presents in simple, concise, and non-technical language the principal scientific facts upon which proper cattle feeding is based, along with a discussion of the various practical aspects as applied to the average dairy farm. Analyses of feeds are given in the appendix.

HARRISON, EDWIN SHEPHERD

Judging dairy cattle. Text by Edwin S. Harrison. Photographs by Henry A. Strohmeyer, Jr., and John T. Carpenter, Jr. New York: John Wiley & Sons, Inc., 1940. 132 p. illus. 28 cm. \$2.75. 4989

Contents: The true type cow and the score card for the cow of each of the five leading dairy breeds. Head and neck of the dairy cow. The mammary system of the dairy cow. The legs and feet of the dairy cow. The chest, chine, crops and shoulders of the dairy cow. Placings and reasons on pairs of cows. Judging dairy heifers. Judging dairy bulls. Index.

Note: This manual presents, in pictorial form, a complete study of the variations in the conformation of the dairy cow. The text matter describes the features for which the reader must look, and explains what effect the variations have upon the usefulness of the cow. Definite, practical problems in judging are illustrated in the comparison between types. The discussions of these comparisons are intended to train the reader to base his judgments upon accepted scientific foundations. The profuse photographic illustrations include some of the most famous animals in the principal dairy breeds.

JENSEN, EINAR, AND OTHERS

Input-output relationships in milk production, by Einar Jensen, John W. Klein, Emil Rauchenstein, T. E. Woodward, and Ray H. Smith. Washington, D.C.: Government Printing Office, 1942. 88 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 815) \$0.15. 4990

Contents: Introduction. Previous investigations and their limitations. Plan and procedure of present input-output investigations. Results of present input-output experiments. Experimental levels compared with the Haacker standard. Feeding grain at certain rates in proportion to milk produced in comparison with feeding from week to week according to requirements of an accepted feeding standard. The influence of levels of feeding. Economic significance of physical input-output relationships. Regional differences in intensity of feeding. Input-output relationships and organization of the dairy enterprise. Interpretation of experimental results. Summary. Literature cited.

Note: The experiments reported in this bulletin were undertaken jointly by the Bureau of Agricultural Economics and the Bureau of Dairy Industry and were carried out through the co-operation of 10 state agricultural experiment stations. The experiments were designed to measure the response of dairy cows to a whole series of rates of feeding in order to serve as a guide in ascertaining what levels of input are most economical under changing conditions of price.

JUDKINS, HENRY FOREST, AND MERRILL J. MACK

The principles of dairying; testing and manufactures. Third edition, revised by Merrill J. Mack. New York: John Wiley & Sons, Inc., 1941. 315 p. illus. 23 cm. \$3.00. 4991

Contents: The general scope of the dairy industry. The secretion of milk. The composition and properties of milk. Factors affecting the composition of milk, particularly the butterfat content. The sampling of milk and cream. The Babcock test for whole milk. The Babcock test for milk products. Testing milk for total solids. The bacteriology of milk. Quality tests for milk. Keeping milk and butterfat records. Essentials in the production and handling of market milk on the farm. Market milk from farm to consumer. The separation of cream. Butter making. Ice cream making. Cheese making. Miscellaneous dairy products. The food value of milk and its products. Appendices. Index.

Note: This third edition of an elementary book on dairying has been revised and expanded. Treatment of the subject is largely from the standpoint of handling milk and milk products, with a general survey of the whole field of dairy technology.

LARSON, CARL WILLIAM, AND OTHERS

Dairy cattle feeding and management. First edition by Carl W. Larson and Fred S. Putney. Third edition by H. O. Henderson. New York: John Wiley & Sons, Inc., 1938. 557 p. illus. 23 cm. \$4.00. 4992

Contents: The relation of dairying to agriculture. The components of plants and animals. The work of digestion. The use of food in the body. Milk secretion. Selection of feeds. Desirable characteristics of a ration. The development of feeding standards. Balancing rations for individual cows. Balancing rations for the herd. Feeding for milk production. Feed and management of cows on test. Effect of abnormal and unusual rations. Silage and silos. Hay and haymaking. Pastures. Soiling crops and summer silage. Some details in dairy cattle management. Raising the dairy calf. Care and development of the

dairy heifer. Feeding and care of the sire. The principles of dairy-cattle breeding. The selection of the sire. Dairy herd development. Keeping records on the dairy farm. Production records. Fitting dairy animals for show. Common diseases of dairy animals. Dairy barns—construction and arrangement. Dairy barn equipment. The production of high-grade milk. Methods of marketing milk. Milk production, cost accounts, principles and methods. Appendix: Laboratory exercises; appendix tables. Index.

Note: This book discusses the entire range of dairy cattle feeding and management, with particular stress on the balancing of rations, feeding for milk production, feeding and management of cows on test pasture and silage. The appendix gives thirty-two laboratory exercises and dairy farm problems.

MATTHEWS, CHARLES ARTHUR, AND OTHERS

Milk yields and milking rates of the individual quarters of the dairy cow udder, by C. A. Matthews, W. W. Swett, and R. R. Graves. Washington, D.C.: Government Printing Office, 1941. 32 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 827) \$0.10. 4993

Contents: Introduction. Review of literature. Experimental methods and materials. Experimental results: Milk yields of individual quarters. Milking rates of individual quarters. Effect of stage of lactation and level of production on milking rates. Differences between milking rates at morning and evening milkings. Comparison of milk yields and milking rates in two lactation periods. Summary. Literature cited.

Note: The experiments reported in this publication were conducted at Beltsville, Maryland, in an attempt to obtain information about the following that would be useful in devising more rapid and efficient methods of milking: the variations in the milking rates of individual cows; the relationship of the yield of each quarter of the udder to that of the other quarters; the time when the most rapid flow occurs in the different quarters and how long the peak flow lasts; and so on. By use of the separate quarter milking-machine unit, information was secured on the milk yields and milking rates of 94 cows.

MORTENSEN, MARTIN

Management of dairy plants. Revised edition. New York: The Macmillan Company, 1938. 407 p. illus. 22 cm. \$3.00. 4994

Contents: Preliminary survey of conditions. Organization. Creamery construction. Sewage disposal. Refrigeration. Mechanical refrigeration. Steam and power. Pasteurization. Purchasing equipment and supplies. Rent, depreciation, interest and insurance. Personnel. Factory control. The milk and cream supply. Procurement of milk and cream. Standardization of milk and cream. Standardization of ice cream and cheese. Standardization of butter. Overrun. Mechanical losses and their influence on butter overrun. Manufacturing costs. Marketing of dairy products. Special marketing problems. Advertising dairy products. Credits and collections. Appendix.

Note: Beginning with a survey of the general organization and planning of the dairy plant, this book discusses in detail the construction of the plant, the machinery and other equipment needed, personnel, all phases of production, marketing, and advertising, and the various factors of cost—overhead, the purchase of raw milk and cream, credit and collections. Problems and lists of references are given at the end of each chapter.

OLSON, THOMAS MANDANEUS

Elements of dairying. New York: The Macmillan Company, 1938. 570 p. illus. 22 cm. \$3.50. 4995

Contents: Part I, The dairy industry: History of the dairy industry. Factors in the development of the dairy industry. Part II, Dairy cattle: Cattle. Dairy cattle breeding. Holstein-Friesian. Guernseys. Jerseys. Ayrshires. Brown Swiss. Minor dairy and dual purpose breeds. Part III, Milk: Milk secretion. Factors affecting milk secretion. Composition and properties of milk. Food value of milk. Microorganisms of milk. Part IV, The processing industries: Testing milk and cream. The market milk industry. The cream industry. The butter industry. The ice cream industry. The cheese industry. Miscellaneous dairy products. Part V, Feeding dairy cattle: Composition, digestion, metabolism of feeds. Factors affecting the composition and

nutritive value of feeds. Characteristics of common dairy feeds. Feeding principles and practices. Part VI, Dairy herd management: Developing the dairy herd. Guard against disease. The dairy sire. The dairy calf. The dairy heifer. The dairy cow. Judging and fitting dairy cattle. Essentials in housing dairy cattle. Appendixes: National dairy organizations. Scale of points and score cards. Digestible nutrients in milk and feeds. Index.

Note: This volume is based on lectures presented over a long period of years to agricultural college students taking their first course in the subject. It is intended to present a picture of the entire industry, particularly as it exists in the United States, and to serve as a preliminary book to more specialized, advanced courses. In addition to its value as a textbook, it has value as a reference book.

PETERSEN, WILLIAM EARL

Dairy science; its principles and practice in production, management and processing. Edited by R. W. Gregory. Chicago: J. B. Lippincott Company, 1939. 679 p. illus. 22 cm. (Lippincott's agricultural science series) \$4.50. 4996

Contents (abridged): The history of dairying. Economics of milk production. Milk consumption. Economics of market milk, the butter industry, the cheese industry, the ice cream industry. Economic phases of the concentrated milk products and milk by-products. Origin, development, and classification of dairy cattle. The Holstein-Friesian. The Jersey. The Guernsey. The Ayrshire. The Brown Swiss. The milking Shorthorn. The red polled. The lesser breeds. Types of dairy farming and breed selection. Selecting the individual cow. Heredity. Genetic make-up. Inherited characteristics. Selection and care of the herd sire. Calf raising. The physiology of milk secretion. Management of dairy cows. The milking machine. Efficiency and cost of milk production. Common diseases of dairy cows. Feeding dairy cattle. Chemical constituents of milk. Physical and chemical properties of milk. Dairy microbiology. Common tests of milk and cream. Market milk. Butter. Cheese. Other dairy products. Appendix. Reference readings. Index.

Note: A comprehensive treatment of the field of dairy husbandry, designed primarily for use as a text for college students of dairy production. The material is so arranged as to provide a background for introductory courses in dairying usually offered to all agriculture college students as well as for the more specialized course in dairy cattle management or milk production. The problems pertaining to the latter subject are dealt with more exhaustively, with detailed discussions of the latest available methods and theories and analyses of experimental results. Intended also as an aid to teachers of vocational agriculture in public high schools.

PRENTICE, EZRA PARMALEE, AND OTHERS

American dairy cattle; their past and future; with chapters on dairy cattle in America by Ernest L. Anthony, Lloyd Burlingham, Clifford L. Clevenger, Clifford T. Conklin, Lynn Copeland, Herbert P. Davis, Rockefeller Prentice and Edwin G. Woodward. New York: Harper and Brothers, 1942. 453 p. illus. (part col.) 24 cm. \$3.00. 4997

Contents (abridged): Preface. The rise of dairy breeds. History of the progeny test and progeny test breeding. The history of group or herd testing in America, by Ernest L. Anthony. American dairy cattle, by Rockefeller Prentice. The milk race of cattle in northern Europe. Holstein-Friesian in America, by Herbert P. Davis. The Shorthorn breed. Shorthorns in America, by Clifford L. Clevenger. The Ayrshire breed. Ayrshires in America, by Clifford T. Conklin. Channel Island cattle. European cattle plagues of the 19th century. Guernseys in America, Part I. Guernseys in America, Part II, by Edwin G. Woodward. Jerseys in America, by Lynn Copeland. The Brown Swiss breed. Brown Swiss in America, by Lloyd Burlingham. Conclusion. Index.

Note: This work is a comprehensive and critical survey of dairy cattle in Europe and America. The history of breeds is traced from their origins to present status in America and an attack is made on breeders' reliance on pedigree as a guide to breeding. Recent developments in cattle-breeding practice based on scientific herd test and progeny test are presented fully. The author advocates the substitution of the pedigreed, or registered,

standard by the scientific herd test and progeny test, with a view to improving breeds and increasing average production of milk products. The book has numerous bibliographical references.

THOMAS, ROY HILMAN, AND OTHERS

Dairy farming in the South, by Roy H. Thomas, P. M. Reaves and C. W. Pegram. Danville, Ill.: The Interstate Printers and Publishers, 1944. 374 p. illus. 22 cm. \$2.00. 4998

Contents: The importance of dairying in the South. Producing milk and dairy products for home use. Composition testing and value of milk. Value of milk in the diet. General breeding problems and practices. The herd sire. Caring for cow and calf. Judging dairy cows. Selecting the dairy breed. General problems in dairy feeding. Feeding practices. Pastures for dairy cattle. Silage for dairy cattle. Dairy buildings and equipment. Producing quality dairy products. Marketing dairy products. Common diseases and parasites of dairy cattle. Fitting and showing dairy cattle. Index.

Note: A textbook for students of vocational agriculture of high school grade. It deals specifically with the problems of dairy farming which are peculiar to the southern United States, such as feeding, parasite control, pasture development, and general management. Based on factual material from studies by agricultural colleges and experiment stations.

WOODWARD, THOMPSON ELWYN, AND OTHERS

Incomplete milking in relation to milk production and udder troubles in dairy cows, by T. E. Woodward, R. P. Hotis, and R. R. Graves. Washington, D.C.: Government Printing Office, 1936. 27 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 522) \$0.05. 4999

Contents: Introduction. Review of literature. Plan of experiment. Methods of milking and feeding the cows. Physical examination of udders and milk. Laboratory tests of the milk. Factors influencing production. Production of milk from complete and incomplete milking. Percentage of butterfat in the milk. Persistency of milk flow. Results of the physical examinations of the udders and milk. Results of milk examinations in the laboratory. Summary and conclusions. Literature cited.

Note: This bulletin reports the results of a milking experiment carried on over a number of years beginning in 1930 at the National Agricultural Research Center, Beltsville, Maryland. Records were kept of the milk and butterfat production of 15 dairy cows when the udders were milked incompletely (without stripping) for at least one entire lactation period, as compared with their production for one or more lactation periods in which the udders were milked completely (with stripping) at each milking. The udders and milk were examined at frequent intervals for evidences of abnormalities.

YAPP, WILLIAM WODIN, AND WILLIAM BARBOUR NEVINS

Dairy cattle; selection, feeding and management. Third edition. New York: John Wiley and Sons, Inc., 1941. 456 p. illus. 21 cm. (The Wiley farm series, edited by A. K. Getman and C. E. Ladd) \$2.50. 5000

Contents: Shall I be a dairy farmer? Factors affecting the returns from the dairy enterprise. Selecting the dairy cow. Choosing a breed. Determining milk and butterfat yield. Studying the principles of heredity. Applying the principles of heredity to dairy cattle breeding. Feeding the dairy cow during the winter season. Feeding the dairy cow during the pasture season. Preserving and preparing roughages for dairy cattle feeding. Caring for and marketing dairy products from the farm. Rearing the dairy calf. Feeding and developing dairy heifers. Feeding and managing the dairy bull. Managing the dairy herd. Treating the ailments of dairy cattle. Keeping business accounts with the dairy herd. Preparing animals for sales and shows. Buying and selling dairy cattle. Planning and equipping the dairy barn. Caring for manure and conserving the soil. Providing a sound basis for the future. Index.

Note: This third revised edition of this book for students and farmers incorporates the important changes in the fields of

animal breeding, nutrition, and physiology that took place since the previous edition was published. A new chapter has been included on the principles of genetics as applied to dairy-cattle breeding. Another new chapter deals with some of the features of herd management which have an important bearing on income. The new discoveries in nutrition, especially with reference to the functions of vitamins and minerals, are treated insofar as they may be applied to the feeding of dairy cattle or to methods of preserving and preparing feeds. The concluding chapter of the book is also new.

Dairy Products

AMERICAN PUBLIC HEALTH ASSOCIATION

Standard methods for the examination of dairy products, microbiological, bioassay and chemical. Eighth edition. Microbiological and bioassay methods formulated by committees of the American Public Health Association and approved for publication by the American Public Health Association, March 20, 1941. Chemical methods compiled by the Committee on Editing Methods of Analysis of the Association of Official Agricultural Chemists and approved for publication by that association at its annual meeting in Washington, November 7, 1940. New York: American Public Health Association, 1941. 288 p. illus. 24 cm. \$3.00. 5001

Contents (abridged): Part I, Microbiological methods for the examination of milk, cream, and butter: Samples and sampling equipment. Agar plate method. Direct microscopic method. Methylene blue reduction method. Sediment test. Tests for organisms of the coliform group. Tests for pathogenic, usually hemolytic streptococci. Examination of milk for tubercle bacilli. Procedures for the detection of *Brucella* spp. in milk. Microbiological methods for the examination of butter. Tests for sterility of dairy containers, utensils and equipment. Part II, Microbiological methods for the examination of frozen desserts and ingredients of frozen desserts: Frozen desserts. Ingredients of frozen desserts. Sediment testing of frozen desserts and ingredients used in frozen desserts. Part III, Bioassay of vitamin D milk: Collection and preservation of the sample. Preliminary period. Depletion period. Assembling rats into groups for assay period. Line test. Recording of data. Part IV, Chemical methods: Milk. Cream. Ice cream. Miscellaneous. Appendix: Proposed phosphatase methods for determination of pasteurization. Index.

Note: The eighth edition of this work includes new material on the examination of plain ice cream and other frozen desserts together with methods for the examination of common ingredients such as powdered milk, evaporated milk, flavoring extracts, egg products, and other agents. There is also new data on methods of determining the sterility of bottles, cans, and special dairy equipment, together with new techniques for examining butter. Bibliographies are given at the end of most of the chapters.

BABCOCK, CLARENCE JOSEPH

Effect of homogenization on the curd tension, digestibility, and keeping quality of milk. Washington, D.C.: Government Printing Office, 1942. 24 p. illus. 22 cm. (United States. Department of Agriculture. Technical bulletin no. 832) \$0.05. 5002

Contents (abridged): Introduction. Methods. Curd tension of milk. Relative digestibility of homogenized and unhomogenized milk. Curd area. Keeping quality. Conclusions. Literature cited.

Note: The use of homogenization in commercial practice to produce soft-curd milk is comparatively new. The investigations discussed in this bulletin were made in the market-milk laboratory of the United States Bureau of Dairy Industry to determine the effect of homogenization on the curd-tension of milk under different conditions found in commercial practice, and to obtain information on the relative digestibility and keeping quality of homogenized and unhomogenized milk.

BOWEN, JOHN THOMAS

Refrigeration in the handling, processing, and storing of milk and milk products. Washington, D.C.: Government Printing Office, 1932. 59 p. illus. 22 cm. (United States. Department of Agriculture. Miscellaneous publication no. 138) Paper, \$0.10. 5003

Contents: Introduction. Mechanical refrigeration. Insulation. Methods of utilizing refrigeration. Physical properties of milk and milk products in relation to cooling. Relation of temperature to bacterial and chemical changes in milk. Seasonal variation in milk production. Uses of refrigeration in the dairy industry: Cooling milk on the farm. Transportation of milk. Receiving stations. Market-milk plants. Creameries. Cheese plants. Condensaries. Milk-powder plants. Ice-cream plants. Solid carbon dioxide. Brine ice.

Note: This publication is intended to be of service both to those engaged in the dairy industry and to the manufacturers of refrigerating machinery. In it are discussed the various applications of refrigeration in the operation of modern dairy plants and the methods most commonly used in the best equipped plants. The principles of mechanical refrigeration, especially as they apply to the dairy industry, are summarized and their application illustrated by diagrams.

ECKLES, CLARENCE HENRY, AND OTHERS

Milk and milk products; prepared for the use of agriculture college students, by Clarence Henry Eckles, Willes Barnes Combs, and Harold Macy. Third edition. New York: McGraw-Hill Book Company, Inc., 1943. 413 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences; Leon J. Cole, consulting editor) \$3.50. 5003a

Contents: Introduction. The constituents of milk. Factors influencing the composition of milk. Properties of milk. Milk and dairy products as food. Microorganisms. The Babcock test for determining fat in milk and cream. Common dairy processes. Market milk. The manufacture of dairy products: Butter. Cheese. Ice cream. Condensed milk, dry milk, milk by-products. Dairy arithmetic. Miscellaneous tests. Appendix. Index.

Note: A comprehensive treatment of the chemistry and bacteriology of milk, dairy processes, and the manufacture and testing of dairy products. The work is used both as a textbook and as a practical book. The third edition has been revised to include material on recent developments in pasteurization, dairy processes, and recent information on vitamins in dairy products.

GAMBLE, JAMES ALEXANDER, AND OTHERS

Composition and properties of goat's milk as compared with cow's milk, by J. A. Gamble, N. R. Ellis, and A. K. Besley. Washington, D.C.: Government Printing Office, 1939. 72 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 671) \$0.10. 5004

Contents (abridged): Introduction. Review of literature. Test animals used. Sources of milk and methods of handling. Chemical composition of the milks. Digestibility factors of the milks. Vitamin potency of the milks. Bacteriological studies of goat's milk. Feeding comparisons of the milks: Kids as test animals. Rats as test animals. Milk-feeding study with infants. Summary and conclusions. Literature cited.

Note: This bulletin reports the results of experimental work carried on at the Agricultural Research Center, Beltsville, Maryland, between 1929 and 1932.

HALLER, HENRY SENSENIG, AND OTHERS

The effect of pasteurization on some constituents and properties of goat's milk, by H. S. Haller, C. J. Babcock, and N. R. Ellis. Washington, D.C.: Government Printing Office, 1941. 14 p. illus. 23 cm. (United States. Department of

Agriculture. Technical bulletin no. 800) \$0.05. 5005

Contents: Introduction. Source of the milk and method of handling. Pasteurizing treatment of the milk. Studies made on the milk. Summary and conclusions. Literature cited.

Note: The experiments in pasteurization of goat's milk reported in this bulletin were conducted in 1937 and 1939 by the Bureau of Dairy Industry and the Bureau of Animal Industry and include studies of the effects of pasteurization on the solubility of calcium and phosphorus, on proteins, on curd tension, on the keeping quality, and on the amount of reduced ascorbic acid.

HAMMER, BERNARD WERNICK

Dairy bacteriology. Second edition. New York: John Wiley & Sons, Inc., 1938. 482 p. illus. 23 cm. (The Wiley agricultural series, edited by J. G. Lipman) \$5.00. 5006

Contents: Introduction. Bacterial counts on milk. Milk fermentations. Contamination of milk and cream and its control. Growth of organisms in milk and cream. Body cells in milk. Spread of diseases through milk and its derivatives. Preservation of milk and cream. Milk enzymes. Bacteriology of evaporated, sweetened condensed, and dry milk. Bacteriology of ice cream. Bacteriology of butter cultures. Bacteriology of fermented milk preparations. Bacteriology of butter. Bacteriology of cheese. Tests for the general quality of milk and cream. Index.

Note: Presents in a clearly and concisely outlined plan all the essential facts relating to the bacterial aspects of dairy processes, methods, and controls. A knowledge of general bacteriology is essential. The book emphasizes the fermentations taking place in milk and its various derivatives, since an understanding of these is essential to all connected with the dairy industry. Descriptions of organisms have been limited to bare essentials since more detailed treatment of these is generally available elsewhere. The book presents, separately, both the pathogenic and the normal bacterial developments in each dairy product.

HUNZIKER, OTTO FREDERICK

The butter industry, prepared for factory, school and laboratory. Third edition, rewritten and enlarged. La Grange, Ill.: The Author, 1940. 821 p. illus. 23 cm. U.S. and Canada, \$6.50; other foreign countries, \$7.00. 5007

Contents (abridged): History and development. Creamery organization. Steam, power, refrigeration, water-tempering. Creamery equipment. Factory sanitation. Care of milk and cream on farm and in transit. Separation of milk, why cream tests vary. Systems of cream buying. Receiving—grading, sampling, weighing, can washing. Neutralization of sour cream. Pasteurization systems. Methods for removal of objectionable flavors. Starters. Cream ripening. Churning. Washing, salting, working, moisture control. Packing. Creamery overrun, utilization of by-products. Markets, imports, exports, consumption. Cold storage. Composition and properties of butter. Butter defects. Butter scoring. Factory tests. Index.

Note: A standard work for practical use in the butter industry and for use as a textbook in agricultural colleges. The third edition contains a considerable amount of new material, but the plan of the book has not been changed.

HUNZIKER, OTTO FREDERICK

Condensed milk and milk powder. Prepared for factory, school and laboratory. Fifth edition. Rewritten and enlarged. La Grange, Ill.: Otto Frederick Hunziker, 1935. 661 p. illus. 23 cm. \$6.50. 5007a

Contents (abridged): Part I, Condensed milk: History and development. The milk condensery. Milk supply. Part II, Manufacture of sweetened condensed milk: Preparing the milk for condensing. Thermodynamics of condensing. Description of vacuum pan. Steam requirements for condensing. Operation of vacuum pan. Cooling the sweetened condensed milk. Use of corn sugar. Packing. Part III, Manufacture of unsweetened condensed milk: Evaporated milk. Homogenizing, cooling, and packing. Factors influencing heat coagulation. Method of evaporated milk control. Sterilizing evaporated milk by the continuous process.

Plain condensed milk, semi-solid buttermilk, concentrated sour skim-milk. Condensing by continuous process. Part iv, Condensed milk markets, composition, and properties: Preparation for market. Manufacture of sterilized sweet cream. Chemical and physical properties of condensed milk. Bacteria, enzymes, vitamins, and digestibility of concentrated milks. Part v, Condensed milk defects, their cause and prevention. Part vi, Manufacture of milk powder. Part vii, Tests, analyses, standards, tariff. References. Index.

Note: A text and reference work for advanced students and for the research engineer and plant manager concerned with large-scale commercial dairy operations. Apparatus and processes in use as of 1934 are described in detail, based on the technical literature of the field and the author's own experience. Vacuum-pan construction, thermodynamics and steam requirements for condensing, bacteriological analyses, enzyme reactions, and homogenizers are among the subjects treated. There are 290 references to the world literature on the subject. The fifth edition contains descriptions of improved apparatus and techniques.

KELLY, ERNEST, AND CLARENCE E. CLEMENT

Market milk. Second edition, rewritten. New York: John Wiley & Sons, Inc., 1931. 489 p. illus. 23 cm. \$4.50. 5008

Contents: Market milk an important industry. Milk as a food. Milk and public health. Chemistry as applied to market milk. Bacteriology as applied to market milk. Essential factors in producing milk of low bacterial count. Organization of milk control. Dairy farm inspection. Inspection in the city. Scoring milk and cream. Cost of milk production. Methods of supplying consumers with milk. Producers' cooperative milk-marketing organization. The transportation of milk. Country milk-receiving stations. The city milk plant—construction and arrangement. Milk-plant equipment. Milk-plant operation. Pasteurization of milk. Special practices. Mechanical refrigeration. Milk delivery. Cost of milk distribution. Practicums. Index.

Note: Treated in detail are the many complex problems of the milk industry, as well as studies in economy connected with the handling and distribution of milk. Practical throughout, it is written to appeal to the general reader as well as to the technical man.

ROADHOUSE, CHESTER LINWOOD, AND JAMES LLOYD HENDERSON

The market-milk industry. New York: McGraw-Hill Book Company, Inc., 1941. 624 p. illus. 23 cm. (McGraw-Hill publications in the agricultural sciences; L. J. Cole, consulting editor) \$5.00. 5009

Contents: History and development of the market-milk industry. The composition of milk and its physical and chemical properties. Microorganisms, enzymes, and cells of milk and cream. Milk and the public health. Safeguarding the milk supply. Sanitary production of market milk. Construction and arrangement of sanitary dairy-farm buildings. Country milk-receiving stations. The transportation of milk. Flavors of milk. Construction and arrangement of city milk plant. Milk-plant operation. Washing and sterilizing dairy equipment. Pasteurization of milk. Mechanical refrigeration. The cooling of milk. The creaming of milk. Table cream and whipping cream. Special milk products. The distribution of milk. The cost of milk production. The price of milk and price plans. Dairy inspection and market-milk control. The use of milk in nutrition. The milk-plant laboratory and its operation.

Note: Designed to give the student an understanding of the technical and economic phases of the market-milk industry. Covers the entire field describing approved procedures in the grading, pasteurizing and cooling of milk, the preparation of cultured buttermilk, table and whipping creams, homogenized, soft curd, and vitamin D milks, chocolate milk drinks, and cottage cheese. Economic phases are discussed in detail.

SHERFY, CARRIE BELLE, COMPILER

Bibliography on butter oil. Washington, D.C.: Government Printing Office, 1944. 40 p. 23 cm. (United States. Department of Agriculture. Bibliographical bulletin no. 5) \$0.10. 5010

Contents: Preface. Sources consulted. Bibliography on butter oil: General. Adulteration and analysis. Crystallization. Keeping

quality and deterioration. Manufacture. Nutritive value. Packaging. Utilization. Author index. Subject index.

Note: This bibliography is an annotated list of 294 articles found in periodical and technical literature on the preparation, properties, keeping quality, and uses of pure milk fat; the manufacture, preservation, and storage of butter oil; and the conservation of shipping space in shipping it to the tropics and other places. Material dealing with milk fat in dairy products is not included. Terms used in other countries for butter oil and milk oil include: Australia, dehydrated butter; Egypt, samna or samn; England, clarified butter; France, beurre fondu; Germany, Butteröl, Butterschmalz, Flössbutter, geschmolzene Butter, gesottene Butter, Kuhschmalz, Rindschmalz, Schmalz, Schmelzbutter; India, ghee or ghi; Iran, roghan; Switzerland, eingesottene Butter.

TOTMAN, CLAIRE C., AND OTHERS

Butter, by Claire C. Totman, the late G. L. McKay, and Christian Larsen, formerly "Principles and practice of butter-making," by G. L. McKay and Christian Larsen. Fourth edition. New York: John Wiley & Sons, Inc., 1939. 472 p. illus. 23 cm. \$3.50. 5011

Contents: History of buttermaking. Composition and properties of milk and cream. Milk and its products as foods. Variation of fat in milk and cream. Care of milk and cream on the farm. Buying and grading cream. Neutralization. Pasteurization. Starters and cream ripening. Churning. Washing, salting and working. Overrun. Defects in butter, their causes and prevention. Marketing. Dairy equipment; metals, depreciation and care. Refrigeration. Washing powders. Sanitation. Testing. Starting a local creamery. Standards and definitions. Dairy production and statistics. Benefactors of the dairy industry, dairy associations, and dairy journals. Appendices. Index.

Note: This edition has been entirely rewritten to present the advances in the industry, with the exception of the chapters on milk and its products as foods, and variation of fat in milk and cream. Considerable information is given in graphic form. Three phases of the butter industry receive the main emphasis: buying and grading of cream, churning, and marketing. It is the aim of the book to provide the essentials of the subject, and to suggest further study of the various phases by reference to the original literature.

VAN SLYKE, LUCIUS LINCOLN, AND WALTER V. PRICE

Cheese; a treatise on the manufacture of American Cheddar cheese and some other varieties—intended as a text-book for the use of dairy teachers and students in classroom and workroom—prepared also as a handbook and work of reference for the daily use of practical cheese-makers in cheese factory operations. Revised and enlarged. New York: Orange Judd Publishing Company, Inc., 1938. 358 p. illus. 23 cm. \$3.50. 5012

Contents (abridged): Part I, The composition of milk and its relation to cheese: The constituents of milk. Functions of milk constituents. Milk constituents and yield of cheese. Methods of calculating yield of Cheddar cheese. Methods of paying for milk for cheese-making. Part II, Biological relations of milk to cheese-making: The relations of micro-organisms and enzymes. The care of milk. Lactic acid starters. Part III, The operations of cheese-making: Essentials of curd-making. Cheddar cheese-making. Care of Cheddar cheese from pressing to shipping. Modifications of Cheddar process and miscellaneous subjects. Commercial qualities of Cheddar cheese. Part IV, The ripening of cheese: Loss of moisture. Chemical changes and causes. Commercial relations. Part V, Miscellaneous subjects: Cheese-factory construction and equipment. Some methods of testing. The literature of cheese. Index to literature. Index.

Note: A treatise on the manufacture of American Cheddar cheese and some other varieties; intended as a textbook for the use of dairy teachers and students in classroom and workroom; prepared also as a handbook and work of reference for the daily use of practical cheese-makers in cheese-factory operations. This represents both the scientific and practical sides of cheese-making and contains theory and statistical data for reference use.

Horses

FARSHLER, EARL R.

The American saddle horse; tracing the evolution, origin, history, derivation and development of the saddle-bred horse, with a treatise on breeding principles and a section devoted to the training of gaited animals. Louisville, Ky.: The Standard Printing Company, 1933. 273 p. illus. 23 cm. \$3.50. 5013

Contents: Part I, Evolution, origin, history, type: Introduction and evolution. Original habitat. The Arabian horse. The thoroughbred. The early English racer and Spanish jennets. The Narragansett pacers and Canadian horses. The Morgan horse. Messenger. The Kentucky saddle horse. The stock horse. Principles of breeding. Part II, Training: Early colt training (the biting harness). Training to harness. Breaking to saddle. Gaiting the colt. Caretaking (grooming, cooling out, care of feet and legs, care of tail when using a tail set). Vices and their remedies. Shoeing. Conclusion (a chapter of little things).

Note: An attempt to trace the evolution, origin, history, derivation, and development of the American saddle horse. Special consideration is given to those types which have long been used under the saddle, and which were later used to build up the American saddle breed. The author does not attempt to prove or disprove the superiority of any breed or breeds.

GORMAN, JOHN ALEXANDER

The western horse; its types and training. Revised edition. Danville, Ill.: The Interstate Printers and Publishers, 1944. 365 p. illus. 22 cm. \$2.00. 5014

Contents: Part I, Training: Training the colt. Training the young horse to work. Training the stock horse. "Bronc busting." Restraining devices. Training and gaiting the pleasure saddle horse. Trick training. Rodeos and western shows. Horse shows and recreation. Horse racing. Part II, Types of western horses: Light breeds of horses. Types of western stock horses. Remount horses. Wild horses. Draft horses and mules. Part III, Shipping and marketing horses: Reducing losses in shipping. Marketing horses. Index. Magazines devoted to horses. Breed associations.

Note: The first half of this book is devoted to a discussion of practical methods of horse training. In the latter half an attempt is made to show how various breeds of horses have been combined to develop the types of grade range horses as well as the nine recently developed breeds and western types. For the student, breeder, and trainer of western horses.

SELF, MARGARET CABELL

Horses; their selection, care and handling. New York: A. S. Barnes and Company, Inc., 1943. 170 p. illus. 23 cm. \$3.00. 5015

Contents: Selection of the horse. Selection and care of equipment. The stable. General care. First aid. Handling the horse. Cause and control of vices. Riding. Driving. Starting the child. The show ring. Glossary. Index.

Note: A guide which emphasizes the everyday handling of horses. The book is designed for the person owning his own driving or saddle horse, and is intended to teach the rudiments of a worthwhile hobby and its benefits. Well-chosen pictures and clearly drawn diagrams supplement and illustrate the text.

WALL, JOHN FURMAN

A horseman's handbook on practical breeding. Third edition. Washington, D.C.: American Remount Association, 1944. 327 p. illus. 23 cm. \$4.00. 5016

Contents: A brief history of the horse. The breeds of the horse today: the light breeds. The heavy or draft horse. The horse situation in the United States. The principles of mating. The acquisition of a horse farm. Buildings. Forage, pastures, and paddocks. Stallions: selection, care, handling. Broodmares: selection, care, handling. The foal: care, handling. Abortion, sterility, breeding hygiene. Parasites (including encephalomyelitis). Routine management. Farm records. Appendixes. Index.

Note: A digest of some opinions and practices of experienced breeders of horses, designed to encourage and assist individuals who have little opportunity to observe practical breeding of horses, the handling, care, and the feeding of breeding stock. The scope covers the heavy or draft horse along with the light breeds. Throughout the text and appendixes frequent references are made to disease and treatment from the viewpoint of the layman, with emphasis upon the need of a well-informed veterinarian in the care of horses. Intended mainly for the small breeder but adaptable for large-scale breeding programs.

Swine

ELLIS, NED ROYCE, AND J. H. ZELLER

Effect of quantity and kinds of feed on economy of gains and body composition of hogs. Washington, D.C.: Government Printing Office, 1934. 31 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 413) \$0.05. 5017

Contents: Introduction. Previous investigations. Plan of experiments. Experimental results: Effects of feeding level on economy of gains. Effects of feeding level on physical and chemical composition of the hogs. Effects of feeding level on firmness of fat, palatability, and other quality factors. Discussion. Summary. Literature cited.

Note: The purpose of the investigations reported in this bulletin was to determine the effect of different levels of feed intake by hogs (1) on the efficiency of converting feed into gain in weight, (2) on the physical and chemical composition of the meat and carcass, and (3) on the firmness, palatability, and other quality factors of the meat. The bulletin presents data on three basal feeds for hogs: peanuts, corn, and wheat. The experiments were conducted from 1924 to 1932, inclusive.

LUSH, JAY LAURENCE, AND A. E. MOLLN

Litter size and weight as permanent characteristics of sows. Washington, D.C.: Government Printing Office, 1942. 40 p. illus. 22 cm. (United States. Department of Agriculture. Technical bulletin no. 836) \$0.10. 5018

Contents: Introduction. Source of data. Method of analysis. The effects of age of sow. Differences between breeds and between stations. Analysis of intrastation differences. Repeatability of productivity. Discussion and applications. Summary. Appendix: Comparison of present findings with data from other studies. Literature cited.

Note: The data on swine litter sizes and weights presented and analyzed in this bulletin were secured from nine different experimental herds over a period of about ten years ending with the litters farrowed in the spring of 1937. The purpose in assembling the information was to assist in the breeding improvement programs for swine. The conclusions reached were thought to be generally applicable both to purebred herds and to commercial herds engaged in producing market hogs. The following three measures of sow productivity were studied: number of pigs farrowed, number of pigs weaned, and weight of the whole litter at weaning time.

SMITH, WILLIAM WESLEY

Pork production. With a chapter on The prevention of hog diseases, by R. A. Craig. Revised edition. New York: The Macmillan Company, 1937. 575 p. illus. 22 cm. \$3.75. 5019

Contents: General view. Feeding and handling the herd in the breeding season. Feeding pregnant sows and gilts. Care and feeding of the sow and litter. Size of litters. Birth weight of pigs, milk flow of sows. General management and care of the breeding herd. Food demands of the growing and fattening pig. Food deficiencies of the cereal grains (experimental studies). Forage crops. Methods of feeding on forage. Hogging-off corn and other crops. Protein supplements (dairy by-products). Protein supplements (packing house and similar products). Protein supplements of plant origin. The cereal grains and other carbonaceous feeds. The cost of producing pork. Marketing. Market classes and grades. Factors affecting the price of hogs. Judging. Breeds of hogs. Breeding. The prevention of hog diseases. Index.

Note: A textbook for students of animal husbandry in agricul-

tural institutions and a reference guide for the scientific or large-scale hog-raiser. The book covers every important aspect of the breeding, care, feeding, management, and marketing of hogs, including statistics on costs and profits. It is based on the author's lifetime experience in breeding and raising hogs and upon the literature of the field. The revised edition incorporates the new methods developed between 1920 and 1937, including research information on minerals, vitamins, and proteins in feeds, new analyses of feed ingredients and costs, and new data on standard market classes, grades, and prices. There are over 170 tables based on records of commercial and research groups.

SOUTHWELL, BYRON LESTER, AND OTHERS

Swine production in the South, by Byron L. Southwell, John T. Wheeler, and A. O. Duncan. Danville, Ill.: The Interstate Printers and Publishers, 1940. 219 p. illus. 21 cm. \$2.00. 5020

Contents: The importance of swine production in the South. General problems in feeding swine. Feeding swine for slaughter. Feeding breeding hogs. Caring for the sow and litter. General problems in breeding hogs. Selecting breeding stock. Setting up a program of breeding. General problems in controlling parasites and diseases. How to control internal parasites of swine. How to control external parasites of swine. How to control diseases of swine. Marketing hogs. Butchering hogs on the farm. Providing buildings and equipment for swine. Index.

Note: A text designed primarily for students of vocational agriculture in the public schools of the southern United States.

Sheep

COFFEY, WALTER CASTELLA

Productive sheep husbandry. Third edition. Revised by William G. Kammlade. Chicago: J. B. Lippincott Company, 1937. 479 p. illus. (part col.) 21 cm. (Lippincott's farm manuals) \$3.50. 5021

Contents (abridged): History of sheep raising and of sheep breeding. Structure and judging. Breeds. The management of the flock. Sheep feeding. Sheep management on the ranges in the western states. Miscellaneous. Index.

Note: A textbook for use in vocational agriculture schools and agricultural colleges, as well as a guide for the practical sheepman. It emphasizes the place which sheep deserve in agriculture in the United States and the methods of handling which will result in better flock husbandry. Considerable space is devoted to a description of the various breeds of sheep. Methods of managing the farm flock are outlined in detail. Somewhat less space is given to range management of sheep. The third edition contains minor changes based upon advances in the breeding and improvement of sheep between 1929 and 1937.

EWING, PERRY VAN, EDITOR

The golden hoof; a practical sheep book, written by the leading sheep authorities of America for the benefit of those engaged in the sheep industry. Chicago, Ill.: Sheep Breeder, Inc., 1936. 256 p. illus. 20 cm. \$2.25. 5022

Contents: The farm flock, by D. H. La Voi. Range sheep production, by E. F. Rinehart. Southwestern sheep management, by J. M. Jones. Blue Grass spring lambs, by L. J. Horlacher. Spring lamb production in California, by R. F. Miller. Equipment for sheep, by P. C. McKenzie and W. B. Connell. Purebred flock management, by F. Klemke. Shearing, by E. S. Bartlett. The wool crop, by J. H. Hill. Wool marketing, by J. F. Walker. Sheep health makes wealth, by H. G. Zavoral. Lambing time, by J. Goater. Docking and castrating lambs, by J. P. Willman. Raising lambs for flock replacement, by P. E. Hampton. Hot house lambs, by L. J. Pasco. Lamb feeding, by G. A. Brown. Lamb marketing, by J. L. Merriam. Home slaughtering of lamb, by P. A. Anderson. Types and breeds of sheep, by W. L. Henning. Fitting the show flock, by H. Barber. Judging of sheep, by W. F. Renk. The breeding flock, by O. G. Clogg. The stud ram, by B. F. Creech. Selling purebred sheep, by G. McKerrrow. Opportunities in sheep, by A. E. Darlow. Index.

Note: The short papers in this volume have been written by men who are prominent in the sheep industry in the United States.

EWING, PERRY VAN

Karakul sheep, the producers of Persian lambskins. Chicago: Breeder Publications, 1943. 127 p. illus. 20 cm. \$2.00. 5023

Contents: Introduction. Origin of the Karakul sheep. World distribution. Karakuls in America. Experimental work on Karakuls. Feeding. Breeding of Karakuls. Management of the flock. Karakul products. Marketing of the skins. Economic considerations. Index.

Note: A discussion of the production of Persian lambskins through the raising of Karakul sheep. The background of the breed and its history are sketched as a basis for the main topic: the raising of the sheep. The best methods of breeding, feeding, and managing the flock are indicated and the marketing of the skins is treated.

HORLACHER, LEVI JACKSON, AND CARSIE HAMMONDS

Sheep. Danville, Ill.: The Interstate Printers and Publishers, 1942. 348 p. illus. 22 cm. \$2.00. 5024

Contents: Planning for the sheep enterprise. Choosing the breed of sheep. Selecting and judging sheep. Feeding and managing the flock from breeding to lambing. Feeding and caring for the ewes and lambs. Fattening commercial lambs. Preventing and controlling common parasites and diseases in sheep and lambs. Producing and handling wool. Marketing lambs and sheep. Fitting and showing sheep. Index.

Note: A textbook for use in vocational high school courses in agriculture. Practical methods and experimental data are presented and selected portions of contributing sciences are included.

HULTZ, FRED SAMUEL, AND JOHN A. HILL

Range sheep and wool in the seventeen western states. Part I. Range sheep, by Fred S. Hultz. Part II. Wool, by John A. Hill. New York: John Wiley and Sons, Inc., 1931. 374 p. illus. 20 cm. \$3.00. 5025

Contents: Part I, Range sheep: The range area. Status of sheep. The breeds of sheep. Types of sheep. Sheep breeding. The lamb crop. Shearing and dipping. Grazing and land. Western farm sheep production. Purebred sheep production. Diseases of sheep. Lamb-fattening feeds. Lamb feeding practices. Marketing sheep. Part II, Wool: The present status of wool. Wool classifications. The wool fiber. Woolen manufacture. Judging range sheep for wool. Laboratory wool studies. Marketing wool. Glossary of wool terms. Index.

Note: This text- and reference book, for students in agricultural colleges and for sheep raisers and processors of wool, presents a panoramic view of the range sheep and wool industry in the area indicated. Discussion of management practices is included and recommendations are made for following the most economical methods used by range sheep operators. Liberal use is made of reports and bulletins from the various government and state experimental stations.

Dogs and Cats

FOSTER, JAMES C., JR.

20th century dog breeding, with The American pointer and his family tree. A comprehensive and practical treatise upon the breeding of dogs, with a thorough break-down of the genealogy of the pointer, illustrating the practical application of each genetic principle to the problems of practical breeding. San Antonio, Texas: The Naylor Company, 1939. 301 p. illus. 23 cm. \$5.00. 5026

Contents (abridged): The breeder's job. The breeder's tools and materials. Inheritance. The breeding program. Selecting the parents. Special breeding problems. The American pointer and his family tree. Index.

Note: A discussion of the fundamental principles upon which the breeding of dogs is based, with emphasis upon the relative influence and importance of the various factors involved in breeding for improvement. Much of the material has appeared in the magazine *American field*. The history and development of the pointer is analyzed in terms of the influences of the great and poor producers, with many practical references to the profitable and unprofitable matings in other breeds.

HARBISON, CLARENCE E.

Our dogs; a text book on the feeding, training, and care of all breeds. With an introduction by Robert S. Lemmon. Revised and enlarged edition. New York: Orange Judd Publishing Company, Inc., 1935. 306 p. illus. 20 cm. \$2.50.

5026a

Contents: First you buy a dog. The stranger within your gates. Feeding. Housing and yards. Leads and collars, the dog's clothes. Guidance. Training. The dog's coat. Teeth and teething. Starting a kennel. Practical breeding. In-breeding. Care of the brood bitch. False pregnancy. Weaning puppies. Health and sickness—how to treat ailments and accidents. Distemper. Rabies. Your dog's medicine cabinet and first aid kit. How to register a dog in the American Kennel Club. How to enter your dog in a show. Glossary of terms. Index.

Note: Offered as a guide to the care, breeding, and training of dogs for the novice as well as for the professional handler and the veterinarian. The second edition contains new material on diseases, feeding, and kennel accessories, together with several new illustrations.

McKAY, CLIVE M.

Nutrition of the dog. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1943. 140 p. illus. 24 cm. \$1.50.

5027

Contents: Americans and their dogs. Carbohydrates for dogs. Fat in the diet of dogs. Proteins for dogs. Mineral requirements of dogs. Vitamins for dogs. Modern dog feeds. The ingredients of dog feeds. Testing dog feeds. Practical feeding and management of dogs. Indexes.

Note: Designed for both the pet owner and the scientist, this work presents only information supported by evidence gained from experiments and from the related technical literature. Each chapter is arranged so that essential, applied knowledge is presented first, with the complete technical picture developed later on. For the benefit of veterinarians and other scientists, a bibliography of the most important technical papers is included.

MELLEN, IDA M.

A practical cat book for amateurs and professionals. New York: Charles Scribner's Sons, 1942. 230 p. illus. 21 cm. \$2.50.

5028

Contents: Eighteen popular misconceptions corrected. Breeds. Breeding, showing, and shipping. The mother cat. The kitten. The food of the cat. Care and training. Tricks and games. Photographing the cat. Diseases and parasites. Institutions for the service and protection of the cat. Bibliography. Index.

Note: Useful facts in popularized form for the amateur cat-lover as well as the beginning fancier and breeder. The information on breeds and breeding is not very detailed or technical, and such topics as the physiology, anatomy, genetics, and biochemistry of the cat have been purposely omitted. The bibliography lists books on breeds, diseases, short stories, poetry, and pictures, plus children's books about cats.

Poultry

BARGER, EDGAR HUGH, AND LESLIE ELLSWORTH CARD

Diseases and parasites of poultry. Third edition, thoroughly revised. Illustrated with 80 engravings and a colored plate. Philadelphia: Lea & Febiger, 1943. 399 p. illus. (part col.) 20 cm. \$3.75.

5029

Contents: The mortality problem. The nature of disease. The anatomy of the fowl. Poultry surgery. Diagnostic methods. Bacterial diseases. Virus diseases. Protozoan diseases. Nutritional disorders. Miscellaneous conditions. Poisons. Internal parasites. External parasites. Controlling flock mortality. Appendix—Drugs, disinfectants, etc.

Note: The chief aim of this work is to show how the mortality in poultry flocks may best be reduced. To this end it offers material which is scientifically accurate, yet is presented in such a manner as to be easily understood and put into practice. A list of references to literature is appended to each chapter.

BAROTT, HERBERT GEORGE

Effect of temperature, humidity, and other factors on hatch of hens' eggs and on energy metabolism of chick embryos. Washington, D.C.: Government Printing Office, 1937. 46 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 553) \$0.10.

5030

Contents (abridged): Introduction. Review of literature. Apparatus and methods. Experimental procedure and eggs used. Effect of various factors on hatch. Effect of various factors on energy metabolism of chick embryo. Summary and conclusions. Literature cited.

Note: The increasing use of incubators in hatching chickens for the replenishment of poultry flocks and the high mortality of the embryos during the hatching period make desirable some knowledge of factors that influence hatching results. It was the aim, in the investigations reported in this bulletin, to ascertain the optimum condition for each of four factors for embryonic growth and for hatching: temperature, humidity, amount of carbon dioxide, amount of oxygen. It was also desired to ascertain the specific effect on embryonic growth and on hatch of a change in any one of these factors.

BIESTER, HARRY EDWARD, AND LOUIS DEVRIES, EDITORS

Diseases of poultry. Ames, Ia.: The Iowa State College Press, 1943. 1005 p. illus. (part col.) 26 cm. \$8.50.

5031

Contents: Anatomy, by H. L. Foust. Digestion, by E. A. Hewitt. Poultry genetics as related to pathology, by Nelson F. Waters and James H. Bywaters. Avian hematology, by Carl Olson, Jr. Hygiene and sanitation with the poultry flock, by J. Holmes Martin. Vitamins and vitamin deficiencies, by R. M. Sherwood and J. R. Couch. Proteins, carbohydrates, fats, fiber, minerals, and water in poultry feeding, by H. L. Wilcke. Pulmonary disease, by Henry Van Roekel. Paratyphoid infection of fowls, by R. Fenstermacher. Fowl typhoid, by L. D. Bushnell. Fowl cholera, by Chas. Murray. Tuberculosis, by William H. Feldman. Infectious coryza, by J. R. Beach. Brucellosis, anthrax, pseudotuberculosis, tetanus, and vibrio infection, by H. J. Staffeth. Avian listerellosis, botulism, erysipelotheix septicemia, and goose influenza, by Robert Graham and N. D. Levine. Avian staphylococcosis, avian streptococcosis, avian colibacillosis, and arthritis of fowls, by C. D. Lee. Diseases caused by fungi—aspergillosis, favus, and thrush, by K. L. Bullis. Avian leukosis complex, by Erwin Jungherr. Infectious laryngotracheitis, and infectious bronchitis, by J. R. Beach. Psittacosis and ornithosis, by K. F. Meyer. Avian encephalomyelitis, by Peter K. Olitsky. Equine encephalomyelitis virus in birds, by L. T. Giltner. Fowl pox and pigeon pox, by E. L. Brunett. Fowl pest, by E. L. Stubbs. Foot-and-mouth disease, by Peter K. Olitsky. Rabies in fowls and infectious equine anemia in fowls, by L. H. Schwarte. So-called pullet disease, by Erwin Jungherr. Neoplasias, by W. H. Feldman and Carl Olson, Jr. External parasites of poultry, by E. A. Benbrook. Nematodes of poultry, and cestodes of poultry, by Everett E. Wehr. Trematodes of poultry, by Emmett W. Price. Protozoa, by E. R. Becker. Diseases of digestive apparatus, by A. J. Durant and H. C. McDougale. Poultry surgery, vicious habits, miscellaneous conditions, and poisons and toxins, by L. H. Schwarte. Diseases of the turkey, by W. R. Hinshaw.

Note: For research workers and practicing veterinarians. Reference literature appears at the end of each chapter.

CARD, LESLIE ELLSWORTH, AND MELVIN HENDERSON

Farm poultry production; third edition. Dan-

ville, Ill.: The Interstate Printing Co., 1940. 238 p. illus. (part col.) 20 cm. \$1.80. 5032

Contents (abridged): The business of poultry keeping. Judging fowls for egg production. Feeding hens. Housing farm poultry. Maintaining a healthy flock. Hatching and raising chicks. Increasing returns by better marketing. Improving the flock by breeding. Appendix: 100 suggested poultry practices. Suggestions for the teacher.

Note: A general text for students of vocational agriculture, the teacher, and the farmer. The presentation is based on the use of the material by the authors in classroom teaching and stresses topics of most importance to the farm owner of small and medium-sized flocks.

CHARLES, THOMAS BURR, AND HOMER O. STUART

Commercial poultry farming. Fourth edition. Danville, Ill.: The Interstate Printers and Publishers, 1942. 556 p. illus. 23 cm. \$3.20. 5033

Contents: Incubation. Hatchery practices. Brooding practices. Brooding and laying batteries. Broiler production. Capons and caponizing. Principles of feeding. Feeding chickens. Feeding adult birds. Rearing and range management. Selection. Breeding and sex distinction. Trapnesting and pedigreeing. Improvement programs. Marketing. Fattening. Housing and appliances. Management factors. Poultry diseases. Egg formation. Classes, breeds, varieties, strains. Appendix. Index.

Note: This textbook for courses in vocational agriculture schools is useful to poultrymen as well. It covers modern poultry keeping both as a side-line activity and a large-scale commercial industry. Fundamentals of breeding, incubation, raising and fattening for market, control and prevention of disease, and the economics and profitable management of a poultry business are discussed in considerable detail. There are 114 tables of statistical data based on reports of agricultural experiment stations and university studies, together with a large number of photographs and drawings.

CLINE, LEWIS EDGAR

Turkey production; a complete text on breeding, feeding, handling, marketing and disease control. Prepared for the use of turkey producers and agricultural students. Revised edition. New York: Orange Judd Publishing Company, Inc., 1933. 436 p. illus. 24 cm. \$3.50. 5034

Contents (abridged): Origin and history. Development. Distribution and outlook of the industry. Varieties. Selection for exhibit. Selection of foundation breeding stock. Care and management of breeding stock. Equipment for natural methods. Development of artificial methods of production. Artificial incubation. Artificial brooding. Care and feeding baby turks. Care and feeding of growing young turkeys. Relation of vitamins to normal growth and development. Deformities. Fattening for market. Cost of production. Studies and requirements for financing. Preparing for market. Marketing. Cooperative marketing. Sanitation. Disinfection and medication. Diagnosing diseases. Internal and external parasites. Chicken pox in turkeys. Blackheads. Cholera. Roup. Limberneck. Crop bound. Mycosis of crop. Tympany of the crop. Coccidiosis and control measures. Chronic coccidiosis. White diarrhea. Index.

Note: A text and reference work for students of the turkey industry, for use in agricultural colleges and as a guide to the practical problems of turkey-farm operation. The book reviews the available literature and important research on the subject and makes original suggestions for the practical producer based on years of direct association with the turkey industry. Technical terms are avoided for the most part. There are numerous tables of data and statistics relative to the care and feeding of turkeys and their preparation for market. Diseases and treatment are also included.

EWING, WILLIAM RAIFORD

Handbook of poultry nutrition, for the use of feed manufacturers, veterinarians, hatcherymen, and poultrymen. Revised edition. South Pasadena, Calif.: W. R. Ewing, 1943. 1245 p. illus. (part col.) 23 cm. \$10.00. 5035

Contents (abridged): Importance of quality feeds. The egg factory. Digestibility and palatability. Energy value of poultry feeds. Various feeding systems. Proteins and amino acids. Carbohydrates in the poultry ration. Fats in the poultry ration. Fiber in the poultry ration. Minerals in the poultry ration. Perosis, or slipped tendon. Vitamins in poultry nutrition. Riboflavin. Pantothenic acid. Biotin. Chick gizzard factor. Nutritional encephalomalacia. Condensed facts about turkey feeding. Condensed facts about duck feeding. Dietary control of coccidiosis. Poisons and feeds. Formulating poultry mashes. Analyses and conversion tables. Index.

Note: A comprehensive reference book on this subject. The data presented have been compiled and condensed from United States documents, poultry and feed journals, and proceedings of societies and congresses. References to the sources are given, hence the work serves both as a guide to practice and a guide to the literature. This second edition contains important additional material.

FLOREA, J. H.

A-B-C of poultry raising. New York: Greenberg, 1944. 206 p. illus. (part col.) 21 cm. \$2.50. 5035a

Contents: Introduction. How to get started. Equipment needed. Brooding and rearing chicks. Managing the laying flock. Controlling diseases and parasites. Breeding for improvement. Preparation of poultry and eggs for use. How to expand. Index.

Note: A well-written book for the layman who wants to raise chickens on a small scale. Colored illustrations identify breeds of chickens, and there are 68 illustrations demonstrating fundamental practices in poultry raising.

HARTMAN, ROLAND C., AND G. S. VICKERS

Hatchery management. New York: Orange Judd Publishing Company, Inc., 1932. 386 p. illus. 20 cm. \$3.00. 5036

Contents: History of mammoth incubation. Commercial hatching in America. Establishing the hatchery. The hatchery plant. Equipping the hatchery. The egg supply. Flock improvement. Crossbred chicks. Getting hatchable eggs. Incubation practices. Hatchery sanitation. Getting the chicks to the customer. The battery brooder. Some management problems. Chick prices and hatchery costs. Baby chick shows. Planning the advertising program. Appeals that sell chicks. Building the advertisement. Mail advertising. Outdoor advertising. Window displays. Personal selling methods. Other forms of advertising. Good will builders. Selling feed and supplies. Handling adjustments. Hatchery records. Bibliography. Index.

Note: This volume attempts to bring together in a brief and systematic fashion present-day knowledge concerning the problems encountered in the commercial production and marketing of chicks. It is written for beginners as well as for experienced hatching operators. A large portion of the work is devoted to the merchandising phase of hatchery management, including the essentials of good advertising and selling methods.

HAYS, FRANK ALFRED, AND G. T. KLEIN

Poultry breeding applied. Mount Morris, Ill.: Poultry-Dairy Publishing Co., 1943. 192 p. illus. 22 cm. \$2.00. 5037

Contents (abridged): Introduction. Reproduction in poultry. Breed characters and their inheritance. Physiological characters. Characters affecting egg production. Characters of eggs. Linkage relations in poultry. Inbreeding and outbreeding. Crossbreeding. Breeding for high egg production. The mechanics of pedigree breeding. Applying genetics to turkey production. Index.

Note: This guide for the average poultryman is based on genetic science but the language is non-technical. Theory and terminology are developed at some length in the introductory sections. The discussion of practical application of the theory is detailed and illustrated by numerous tables. References appear at the ends of chapters.

HURD, LOUIS MERWIN

Modern poultry farming. New York: The Macmillan Company, 1944. 599 p. illus. 21 cm. (Rural science series) \$4.00. 5038

Contents (abridged): The business of poultry-keeping. Choosing a breed. Investment, returns and expenses in poultry farming. Poultry-house construction. Hatching the eggs. Require-

ments for brooding chickens. Feeding the laying stock. Egg production. Marketing eggs. Marketing poultry. Culling and selecting poultry by external characters. Selection and management of breeders for egg production. Principles of breeding poultry for egg production. Poultry diseases. Turkeys, guinea fowls and peafowls. Ducks, geese and swans. Pigeons. Pheasants. Index.

Note: A practical guide for poultry-keepers and for those interested in starting a poultry business. It is a second revised edition of the author's *Practical poultry farming*, new and revised edition, New York, 1939. This work differs from the 1939 edition by the addition of a chapter on investment, returns and expenses, and a chapter on recent developments in poultry-keeping, the rewriting of many chapters, and the revision of the illustrative material. The latest methods of disease control, feeding, hatching, brooding, caponizing, marketing, etc., are discussed in relation to their money-making value.

JULL, MORLEY ALLAN

Poultry breeding. Second edition. New York: John Wiley & Sons, Inc., 1940. 484 p. illus. 23 cm. (Poultry science series, J. E. Rice, editor) \$4.00. 5039

Contents: Breeds and varieties and their significance. The physiology of reproduction. The mechanism of inheritance. The inheritance of color characters. The inheritance of morphological characters. The inheritance of physiological characters. The inheritance of egg production. The inheritance of egg characters. Breeding practice. Index.

Note: The advances in breeding methods, rearing, feeding and kindred subjects are given in this revised edition. Fundamental principles involved in the study of the manner in which various characters possessed by the domestic fowl are inherited are discussed. Such matters as the significance of breed standards, problems of reproduction, inheritance of plumage color, body size, egg production, hatchability are included.

JULL, MORLEY ALLAN

Successful poultry management. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1943. 467 p. illus. 23 cm. \$3.00. 5040

Contents: Keeping good stock. Culling to maintain efficient production. Breeding for more efficient production. Renewing the flock. Brooding and housing the growing stock. Housing the laying stock. Providing the chickens with good nutrition. Feeding for efficient meat and egg production. Controlling losses from mortality and other causes. Marketing eggs. Marketing chickens. Making a success of the chicken business.

Note: A practical book particularly for general farmers and other owners of small flocks. It is designed to improve their methods and also to serve as a reference book of data on poultry production.

KING, DALE FRANKLIN, AND S. L. CHESNUTT

Poultry production in the South. Danville, Ill.: The Interstate Printers and Publishers, 1943. 243 p. illus. (part col.) 22 cm. \$2.00. 5041

Contents: Importance of poultry production in the South. Breeds of chickens. Breeding practices. Incubation. Brooding. Laying houses and equipment. Feeding hens for egg production. Culling the farm flock. Use of lights. Marketing eggs. Controlling diseases. Controlling parasites. Capon production. Broiler production. Management of the home flock. Index.

Note: This manual is for poultrymen, farmers, and students in vocational agriculture. It includes the necessary general information required for poultry raising. Particular attention is paid to weather, feeds, housing, breeds, and other poultry problems encountered in the southern United States.

LEVI, WENDELL MITCHELL

The pigeon. With a preface by Oscar Riddle. 785 illustrations. Columbia, S.C.: Printed by the R. L. Bryan Company, 1941. 512 p. illus. (part col.) 29 cm. \$10.00. 5042

Contents (abridged): The relationship of pigeon and man. Breeds and varieties. Anatomy. Physiology. Genetics—variation and inheritance. Practical breeding. Behavior. Diseases, parasites, and pests—their treatment and control. Feeds and feeding. Housing. Commercial squab production. The pigeon fancy—

exhibiting, racing, training, organizations, etc. Bibliography. Index.

Note: A comprehensive and detailed reference work summarizing most of the more important knowledge of the pigeon, particularly the American breeds, of interest to the breeder, fancier, layman, veterinarian and scientist. Although a considerable amount of purely technical information on such topics as the neurology, physiology, and biochemistry of the pigeon is omitted, the material includes those subjects of most significance to the non-specialist and presents the fundamentals of anatomy, physiology, and genetics in adequate detail. The chapter on breeds and varieties contains descriptions and illustrations of a large variety of types. There are numerous references to the literature of the field, and the bibliography contains about 1000 publications in English, French, German, and other languages. The work is intended for everyone who handles or studies pigeons in any way.

LIPPINCOTT, WILLIAM ADAMS

Poultry production. Sixth edition, thoroughly revised by Leslie E. Card. Illustrated with 215 engravings and a colored plate. Philadelphia: Lea & Febiger, 1939. 603 p. illus. (part col.) 20 cm. \$4.00. 5043

Contents: The breeds of chickens. The structure of the chicken and the formation of the egg. Principles of poultry breeding. Selection and improvement. The principles of incubation. The practice of incubation. Brooding and rearing. Houses and equipment. The principles of poultry nutrition. The feeds. The nutrient requirements of poultry. Management practices. Marketing poultry products. The business of poultry keeping. Index.

Note: A comprehensive guide for the student of poultry and the practical poultryman, presenting a summary of the recent methods and practice in poultry raising and marketing. Breeding, housing, flock management, and the economics of poultry keeping are among the subjects emphasized. Based upon the literature of the field and the author's practical experience in poultry husbandry, the work contains reference lists at the end of each chapter and 67 tables of statistical data. The sixth edition contains minor revisions and additions.

NAETHER, CARL ALBERT

The book of the pigeon. Third, completely revised edition. Philadelphia: David McKay Company, 1944. 242 p. illus. 21 cm. \$3.00. 5044

Contents: Till death do part? The iron in the velvet. Billing and cooing. Breeding and keeping. Lofts—equipment and management. Home at any cost. Fleet wings—origin, care, handling, management, and breeding. Fancy breeds. For pelf and palate. Commercial breeds. Concerning foreign doves. Glossary. Pigeon literature. Index.

Note: Intended for the novice as well as for the experienced fancier, this book affords practical and up-to-date information pertaining to every important phase of modern pigeon-keeping. Approximately 100 varieties, including fancy, racing, utility pigeons and foreign doves, are described. Helpful hints are offered on the care, housing, feeding, and breeding of these varieties. The subjects of the anatomy, physiology, and diseases of the pigeon are not included. The third edition contains a new chapter on the sport of flying homing pigeons, plus new photographs to make a total of 230.

RICE, JAMES EDWARD, AND OTHERS

Judging poultry for production, by James E. Rice, Goldan O. Hall, and Dean R. Marble. New York: John Wiley & Sons, Inc., 1930. 425 p. illus. (part col.) 24 cm. (Poultry science series, edited by J. E. Rice) \$3.75. 5045

Contents: Principles of production judging: Introduction. The history of judging poultry for production. Constitutional vigor and its relation to production. Physiology of egg production. Pigmentation and its relation to production. Moulting and its relation to production. The head and its relation to production. Body type, internal anatomy and changes in physical condition as affecting egg production. The distribution of egg production as a factor in selection. Influence of the environment on production. The inheritance of egg production. Practice of culling and selection: Culling the farm flock. The selection of commercial layers and breeders. Culling and selecting pullets and cockerels. Judging birds for meat production. Judging eggs. Judging baby

chicks. Production judging in the showroom. Educational facilities in poultry judging: Conducting poultry judging schools. Poultry judging contests. Production poultry shows. Organization for poultry improvement. General information. Glossary. Bibliography. Index.

Note: Assembles and classifies data about judging of vitality and production, as well as the relation of those qualities to the selection of fancy poultry. The book explains the principal factors affecting production and tells how those principles may be put into practice. A complete analysis of systems for judging by head points, as well as a balanced system harmonizing all the known characters in judging, is given in the volume.

RICE, JAMES EDWARD, AND HAROLD E. BOTS-FORD

Practical poultry management. Fourth edition. New York: John Wiley & Sons, Inc., 1940. 604 p. illus. (part col.) 21 cm. (The Wiley farm series; A. K. Getman and C. E. Ladd, editors) \$2.75. 5046

Contents: Culling the flock. Principles of selection. Housing the laying and breeding stock. Principles of housing poultry. Feeding the laying and breeding stock. Principles of feeding layers and breeders. Anatomy and physiology of the domestic fowl. Using artificial illumination on laying and breeding stock. Keeping records of the flock. Studying the records. Diagnosing common diseases. Treating diseases and combating parasites, pests, and vices. Maintaining sanitary conditions. Preparing eggs for market. Preparing poultry for market. Selecting breeders. Mating the breeders. Renewing the flock. Hatching the eggs. Formation of the egg and chick. Brooding the chicks. Preventing and treating chick diseases, parasites, and vices. Caponizing. Maintaining egg production during the summer. Mid-season care of young stock. Fitting, exhibiting, and judging poultry. Classes, breeds, and varieties. Shall I be a poultryman? Index.

Note: For beginners in the subject, farmers as well as agricultural college students. The book was thoroughly revised in its fourth edition. The chapters are again organized around the major activities involved in conducting a poultry enterprise. Specific instructions are given for the performance of each operative activity, followed by a discussion of principles and practices. Improvement is particularly to be noted in the chapters on feeding layers and breeders, selecting breeders, mating breeders, and renewing the flock and hatching the eggs. The material on illumination has been condensed into one chapter, and that on incubation extended to fill two chapters. Many other changes appear throughout the book.

STROUD, ROBERT

Stroud's digest on the diseases of birds. An alphabetically arranged compendium consisting of a complete report of the researches of the author and a digest of the extant knowledge of this subject, written from the point of view of the practical canary breeder. Illustrated by the author. Minneapolis, Minn.: L. G. Marcus and Robert Stroud, 1943. 500 p. illus. 24 cm. \$5.00. 5047

Note: This book presents practical information essential to the diagnosis, control, and treatment of bird diseases. It is of use to the poultryman, veterinarian, student, zoologist, pet dealer, and breeder. The author admits that some of his remedies have been arrived at through hunches in advance of sound proof or accurate identification. A secondary object of the book is the presentation of the author's specific discoveries in avian therapeutics and their underlying principles which have been demonstrated by numerous clinical tests. The emphasis is upon the treatment of disease by chemotherapy, and serums and vaccines are given little space in the work. Case histories are related in informal and colloquial style in order to illustrate specific symptoms or remedies, and the presentation is purposely simplified for the reader without formal education. Three indexes; illustrations, prescriptions, and subject are provided.

THOMPSON, WILLARD CHANDLER

Egg farming; a practical reliable manual upon producing eggs and poultry for market as a profitable business enterprise. New York:

Orange Judd Publishing Company, Inc., 1936. 385 p. illus. 20 cm. Cloth, \$2.00. 5048

Contents: The modern industry of egg farming in the U.S.A. The economically useful types and breeds of poultry. Poultry laying flock improvement. Maintaining the health and productivity of poultry stock. Methods and practices of chick production and rearing. Economical and efficient housing of young and adult poultry. Practical feeding program for egg farm flocks. Handling, candling, grading, and packaging of eggs. Index.

Note: A guide for the student or practical poultry farm operator. Based partly on the writings of other poultrymen and partly on the author's own experience, the book is not intended as a reference volume but rather as a brief discussion of egg farming as a means of earning a livelihood. The directions to the beginner are phrased in a conversational style and make use of the question-and-answer method.

WINTER, ALDEN RAYMOND, AND E. M. FUNK

Poultry science and practice. Edited by R. W. Gregory. Philadelphia: J. B. Lippincott Company, 1941. 739 p. illus. 23 cm. (Lippincott's agricultural science series) \$4.00. 5049

Contents: The poultry industry. Classes, breeds, and varieties of chickens. The anatomy and physiology of the chicken. Breeding principles. Breeding practices. Incubation principles and practices. Rearing principles and practices. Housing principles and practices. Feeding principles. Feeding practices. Disease and parasite prevention and control. Marketing eggs. Marketing poultry. Poultry farm management. Turkey varieties and breeding problems. Turkey production and management. Ducks, geese, and miscellaneous poultry. Game bird production. Appendix. Index.

Note: Prepared for use as a comprehensive text in college poultry courses and also as a reference book for students of vocational agriculture, poultrymen, and general farmers, this book offers practical factual information on general poultry production, including breeding, incubation, brooding, housing, feeding, diseases, marketing, and poultry farm management. There is a large number of photographs, charts, and tables of pertinent data. Long lists of related literature are given at the end of each chapter, those on the subjects of feeding principles, feeding practices, and disease and parasites being particularly extensive.

Fur and Game Animals

ASHBROOK, FRANK GETZ

Rabbits for food and fur. New York: Orange Judd Publishing Co., Inc., 1930. 212 p. illus. 20 cm. \$2.00. 5050

Contents: Growth of rabbit raising. Advice to beginners. Location of the rabbitry. Choosing a breed. Breeding. Feeding. Prevention and treatment of disease. General management. Judging rabbits. Fitting for exhibition. Preparing rabbits for market. Tanning rabbit skins. Marketing meat and fur. Cooking domestic rabbit. Index.

Note: This book does not attempt to cover the entire subject in detail but rather to present the more important phases of rabbit production for meat and fur, to include some of the newer practices, and to indicate trends in the industry. Working plans are included for rabbit hutches, nest boxes, and developing pens.

GABRIELSON, IRA NOEL

Wildlife conservation. New York: The Macmillan Company, 1941. 250 p. illus. 24 cm. \$3.75. 5051

Contents: Preface. Conservation of renewable resources. Soil erosion and wildlife. Water conservation. Life of the waters. Forest conservation. Relationship between forestry and wildlife. Grassland conservation and its relation to wildlife. Some basic facts in wildlife conservation. Resident game. Migratory birds. Fur animals. Nongame birds and mammals. Rare and vanishing species. Predator relationships. Wildlife refuges and their place in conservation. Surmounting the obstacles to conservation. Index.

Note: This account of the restoration and preservation of wildlife in this country includes the history of our wildlife and explanation of the interrelationships between wildlife, water, the soil, forests, and grassland. The author offers a constructive out-

line and discussion of the restoration of our renewable resources, and shows how these efforts are to be fitted in with the national programs of soil and water conservation, of forestry and land utilization.

GABRIELSON, IRA NOEL

Wildlife refuges. New York: The Macmillan Company, 1943. 257 p. illus. 24 cm. \$4.00. 5052

Contents: History of the refuge movement. Purposes, values and limitations of refuges. Types of refuges. Management of refuges. Alaska's great bird cities. Special refuges. The fur-seal islands. Big-game refuges. General wildlife refuges. Mysterious Okefenokee. Patuxent wildlife research refuge. Migratory waterfowl refuges. Refuges on lands used primarily for other purposes. Refuges administered by other Federal agencies. State refuges. Private refuges. Canadian and Mexican refuges. Bibliography. Index.

Note: This book tells the story of the national wildlife refuge system. It includes also the history and status of all types of wildlife refuges, public and private, in America and gives an over-all picture of conditions at the time of the writing.

GRINNELL, JOSEPH, AND OTHERS

Fur-bearing mammals of California; their natural history, systematic status, and relations to man, by Joseph Grinnell, Joseph S. Dixon, and Jean M. Linsdale. Contribution from the Museum of Vertebrate Zoology, University of California. Berkeley, Calif.: University of California Press, 1937. 2 v. illus. (part col.) 26 cm. \$15.00. 5053

Contents: Volume I: Preface. History of fur trapping in California. Present-day fur trapping in California. Effects of fur mammals upon the activities of man. Effects of the activities of man upon fur mammals. Population trends in the fur bearers of California. Fur farming in California. Plan of the species accounts. Definitions. Systematic list of species. Opossum. Bears. Coons. Ring-tailed cats. Martens. Fisher. Weasels. Mink. Wolverine. River otters. Sea otter. Spotted skunks. Striped skunks. Badgers. Volume II: Red foxes. Kit foxes. Gray foxes. Island foxes. Coyotes. Wolf. Mountain lions. Wildcats. Fur seals. Beavers. Muskrats. Literature cited. Index.

Note: The complete, standard work on this subject, based on the great collection in the Museum of Vertebrate Zoology of the University of California, on personal observation, and on the reports of trappers and hunters. Description, measurements, and distribution in California are given for each animal, as well as its history and observed behavior. There are over 350 illustrations. The work is of interest not only to professional and amateur zoologists, but also to trappers, hunters, and farmers of the region.

HARDING, ARTHUR ROBERT

Fur farming; a book of information about fur bearing animals, enclosures, habits, care, etc. Revised by L. H. Adams. Columbus, O.: A. R. Harding Publishing Co., 1936. 442 p. illus. 18 cm. \$2.00. 5054

Contents: Introduction. What animals to raise? Different species of foxes and their habits. Silver fox raising. Raising cross foxes. Raising the prolific blues. Mink raising. Marten raising. Fisher raising. Fitch raising. Weasel raising. Muskrat raising. Beaver raising. Otter raising. Nutria raising. Raccoon raising. Opossum raising. Skunk raising. Badger raising.

Note: A guide to practical methods for the raising of fur-bearing animals. It is designed for those who are already in the industry or considering it. The housing, feeding, physical care, pelting, and raising of various animals are discussed and illustrated. This revised edition covers developments in the design of pens and in scientific food diets between 1909, when the original edition was published, and 1937.

HEILNER, VAN CAMPEN

Our American game birds, with a foreword by Colonel Theodore Roosevelt; paintings and drawings by Lynn Bogue Hunt. Garden City,

N.Y.: Doubleday, Doran and Company, Inc., 1941. 178 p. illus. (part col.) 34 cm. \$5.00. 5055

Contents: Greater scaup duck, lesser scaup, ring-necked duck. Common and Greenland mallard. American and Bahama pintail, black duck, red-legged black duck, Florida duck, mottled duck, baldpate or American wigeon, European wigeon. Gadwall or gray duck, shoveler or spoonbill. Wood duck, green-winged and blue-winged teal, cinnamon teal. Canvasback, redhead. American, surf, and white-winged scoter, golden-eye, Barrow's golden-eye, ruddy duck, buffhead. Canada goose, lesser Canada goose, cackling goose, Hutchin's goose, white-checked goose, greater and lesser snow goose, Ross's goose, white-fronted goose, tule goose, blue goose, emperor goose. American and black brant. Greater yellow-legs, black-bellied and golden plover, Wilson's snipe. Woodcock. Upland plover. Hudsonian curlew, jack curlew. Bobwhite quail. Mountain, plumed, San Pedro, California, Valley, Gambel's, and scaled quail, European partridge. Dusky, ruffed, and spruce grouse, willow ptarmigan. Prairie chicken, sage hen, sharp-tailed grouse. Virginia, clapper, and king rail, sora, coot. Mourning and white-winged dove, band-tailed pigeon. Wild turkey. Ring-necked pheasant. Bibliography.

Note: Presents the scientific names, habits, migration routes, breeding and wintering grounds of the game birds of the Western Hemisphere. Appendix includes articles on bird flight including a table of flight speeds; what is behind the waterfowl regulations with maps of breeding ranges; wintering grounds, flyways; and a field guide for identification. There is a bibliography and nineteen full-color plates by Lynn Bogue Hunt.

MCATEE, WALDO LEE

Wildfowl food plants; their value, propagation, and management. Ames, Ia.: Collegiate Press, Inc., 1939. 141 p. illus. 23 cm. \$1.50. 5056

Contents: Productivity, value, and utilization of wildfowl food plants. Account of wild-duck food plants by families. Environmental limitations on the growth of aquatic plants. Planting suggestions. Construction of ponds. Control of undesirable plants and animals. Vernacular names of wildfowl food plants. Bibliography. Index.

Note: The author has drawn upon his experience in studying birds and their food habits in 23 states and in Canada over a period of 30 years, as well as upon the investigations of others, for the thorough coverage of this subject. Field studies are supplemented by tabulated results of laboratory findings of the United States Biological Survey for which the author has served as technical adviser and research specialist.

MITCHELL, HORACE

Game farming; a text-book for the more efficient and economical propagation of pheasants, quail, wild ducks and ornamental birds. Portsmouth, N.H.: Haley Publishing Company, 1930. 162 p. illus. 23 cm. \$2.50. 5057

Contents: Survey of the industry. Ring-neck pheasants. Winter care and feeding. Preparation for the breeding season. Hatching and rearing. Vermin control. Ornamental birds. Quail. Wild ducks.

Note: A practical book for persons interested in developing game-farms. Detailed information is included on construction of bird pens, seasonal feeding, predatory vermin, and related subjects. The financial aspects of game-farming are not discussed.

MURIE, OLAUS JOHAN

Alaska-Yukon caribou. Washington, D.C.: Government Printing Office, 1935. 93 p. illus. 23 cm. (United States. Bureau of Biological Survey. North American fauna. No. 54) Paper, \$0.20. 5058

Contents: The caribou in relation to man. Status and abundance of caribou. General description of the caribou. General habits and temperament. Breeding habits. Food habits. The migratory habit. Habitat. Distribution and migration of herds. Taxonomic status of Alaska-Yukon caribou. Caribou of British Columbia and Alberta. Bibliography. Index.

Note: The study reported in this volume was undertaken to provide the information needed in administering the caribou herds in Alaska. It is based for the most part upon information obtained in the field.

UNITED STATES. NATIONAL PARK SERVICE

Fading trails, the story of endangered American wildlife, prepared by a committee of the United States Department of the Interior, National Park Service, Fish and Wildlife Service, Daniel B. Beard, chairman, Frederick C. Lincoln [and others]. Illustrations by Walter A. Weber. Edited by Charles Elliott. New York: The Macmillan Company, 1942. 279 p. illus. (part col.) 22 cm. \$3.00. 5059

Contents: Foreword. Primitive days. Civilization's heavy heel. American tragedies. Plans and progress. The grizzly bear. The bighorn. The woodland caribou. The sea otter. Rare fur bearers. The manatee. The wolf. The mountain lion. The California condor. The nene. The trumpeter swan. The pinnated grouse. The Hudsonian godwit. The snail bird. The Florida crane. The roseate spoonbill. The whooper. The swallow-tailed kite. The white hawk. The ivory-billed woodpecker. The Puerto Rican parrot. The Great Lakes whitefish. The Atlantic salmon. The lobster. The green turtle. The American crocodile. Close to the shadows. Selected bibliography. Index.

Note: An authoritative and dramatic presentation of the story of American wildlife—its discovery, exploitation, and present status. Wildlife authorities offer reasons for the extinction of some species of wildlife found by the first explorers of the New World, and tell what species are now endangered and why. There are life stories for each animal, bird and fish listed in the contents. Thirty-six illustrations include half-tone drawings and full-color plates.

Fish Culture and Fisheries

COMPTON, LAWRENCE VERLYN

Techniques of fishpond management. Washington, D.C.: Government Printing Office, 1943. 22 p. illus. 22 cm. (United States. Department of Agriculture. Miscellaneous publication no. 528) Paper, \$0.10. 5060

Contents: Introduction. Production and yield. The aquatic environment: The pond. Fish food. Fish populations. Stocking. Fertilizing: Commercial fertilizers. Organic fertilizers. Comparative effectiveness of fertilizers. Harvesting. How to obtain fish for farm ponds. Summary. Literature cited.

Note: In this publication are presented some of the underlying principles of fish culture in farm ponds and an outline of management methods that have been tested and proved. It is intended for the farmer or rancher wanting to stock and manage properly his pond or reservoir for a crop of food fish.

CRAIG, JOSEPH A., AND ROBERT L. HACKER

The history and development of the fisheries of the Columbia River. Washington, D.C.: Government Printing Office, 1940. 83 p. illus. 28 cm. (United States. Bureau of Fisheries. Bulletin no. 32) Paper, \$0.20. 5061

Contents: Introduction. General description of Columbia River basin. Chronicle of Columbia basin. Salmon fisheries of Columbia River basin: Indian fishing. Intermediate period. Modern salmon industry. Salted and mild-cured salmon. Frozen salmon. Salmon byproducts. Fishing methods and gear: Gill nets. Traps. Haul seines. Fish wheels. Set nets. Dip nets. Troll fishery. Purse seines. Boats. Factors influencing salmon production. Total salmon production. Shad fishery of Columbia River basin. Sturgeon fishery of Columbia River basin. Smelt fishery of Columbia River basin. Summary. Literature cited.

Note: This bulletin describes the history and development of the fisheries of the Columbia River basin. The major portion of the bulletin is devoted to the salmon.

DAVIDSON, FREDERICK ALEXANDER, AND SAMUEL J. HUTCHINSON

The geographic distribution and environmental limitations of the Pacific salmon (genus *Oncorhynchus*). Washington, D.C.: Government Printing Office, 1938. 26 p. illus. 28 cm. (United States. Bureau of Fisheries. Bulletin no. 26) Paper, \$0.10. 5062

Contents: Introduction. Geographic distribution: Native. Foreign. Environmental limitations to occurrence: North Pacific region. South Pacific region. North Atlantic region. South Atlantic region. Summary. Literature cited.

Note: This study was made for the purpose of determining the geographic distribution of the Pacific salmon and gaining knowledge of the environmental limitations to their occurrence. Reports are given of the results of attempts to introduce the Pacific salmon into oceanographic regions other than the North Pacific and comparisons made of conditions in the old and new environments.

DAVIS, HERBERT SPENCER

Care and diseases of trout. Revised edition, 1937. Washington, D.C.: Government Printing Office, 1937. 76 p. illus. 23 cm. (United States. Bureau of Fisheries. Investigational report no. 35) Paper, \$0.15. 5063

Contents: Introduction. Care of fingerling trout. Care of ponds and raceways. Trout foods. Feeding methods. Improvement of stock. Parasites and diseases: External animal parasites. Internal animal parasites. Bacterial diseases. Miscellaneous diseases, including those of uncertain origin. Bibliography.

Note: The tendency to hold trout until they reach between 6 and 12 inches in length before planting them led to the need for this publication on the care and diseases of trout. It is intended for use in trout hatcheries.

DAVIS, HERBERT SPENCER

Instructions for conducting stream and lake surveys. Washington, D.C.: Government Printing Office, 1938. 55 p. illus. 23 cm. (United States. Bureau of Fisheries. Fishery circular no. 26) Paper, \$0.10. 5064

Contents: Introduction. Stream survey: Planning the work. Method of study. Stocking program. Lake and pond survey: Method of study. Classification of lakes. Appendix: Methods for making chemical analyses. Description of stream-bottom sampler. Method of determining area of lake. Instructions for collecting fish scales. Condition factor. Simple methods for measuring flow of water. Blank forms for use in the field. References.

Note: It is the purpose of these instructions to indicate the information that will be of greatest value for the adoption of systematic plans of fish management for inland waters and to outline the methods to be employed in obtaining this information. The instructions are intended primarily for an extensive survey of some region or drainage basin.

ELLIS, MAX MAPES

Detection and measurement of stream pollution. Washington, D.C.: Government Printing Office, 1937. 73 p. illus. 28 cm. (United States. Bureau of Fisheries. Bulletin no. 22) Paper, \$0.20. 5065

Contents: Introduction. Stream pollutants and aquatic environment: Physical and chemical characteristics of waters suitable for fresh-water stream fishes: General field methods. Equipment. Dissolved oxygen. Hydrogen-ion (pH) limits. Ionizable salts. Bottom conditions as affected by stream pollution. Action of pollutants on fishes: Injuries to gills and external structures. Pollutants entering the body of the fish and exerting true toxic action. Lethality of specific substances occurring in stream pollutants: General consideration. Test animals. Water types. Specific lethality tables. Lethal limits of 114 substances which may be found in stream pollutants. Acknowledgments. Bibliography.

Note: This study of water pollution in inland streams and

ivers presents findings from scientific literature supplemented by experimental and field work. It covers the conditions which should be maintained if good fish faunae are to thrive, as well as the specific effects of various types and components of effluents which pollute streams and rivers. It is intended to serve as a basis for corrective measures.

GALTISOFF, PAUL SIMON, AND VICTOR L. LOOS-ANOFF

Natural history and method of controlling the starfish (*Asterias forbesi*, Desor). Washington, D.C.: Government Printing Office, 1939. 132 p. illus. 28 cm. (United States. Bureau of Fisheries. Bulletin no. 31) Paper, \$0.20. 5065a

Contents: Introduction. General appearance, distribution, and destructiveness of starfish. Distribution of starfish in Buzzards Bay. Distribution of starfish in Narragansett Bay. Distribution of starfish in Long Island Sound. Distribution of starfish in Chesapeake Bay. Reproduction. Growth of starfish. Locomotion and migration. Food and feeding. Parasitism. Methods of control: Mechanical methods. Chemical control. Utilization of starfish. Recommendations. Summary. Literature cited.

Note: The studies of the natural history and methods of controlling the common starfish of the Atlantic coast reported in this bulletin were carried out for the benefit of oyster growers, who find the starfish one of the most destructive enemies of the oyster crop in eastern waters. Principal attention was focussed on Long Island Sound. The bulletin describes the distribution, natural history, and recommended means of control of the starfish.

LEACH, GLEN CLIFTON

Artificial propagation of brook trout and rainbow trout, with notes on three other species. Appendix vi to the Report of the U.S. Commissioner of Fisheries for 1923. Revised July 15, 1939. Washington, D.C.: Government Printing Office, 1939. 74 p. illus. 22 cm. (United States. Bureau of Fisheries. Document no. 955) Paper, \$0.20. 5066

Contents: Brook trout: Description. Size. Food. Commercial importance. Range and spawning season. Character of the eggs. Propagation. Rainbow trout: Description. Range and variation. Transplanting. Size and growth. Propagation. Black-spotted trout. Loch Leven trout. Brown trout. Diseases common to trout under domestication and their treatment.

Note: This pamphlet is a revised and enlarged edition of the material appearing as Appendix vi to the Report of the U.S. Commissioner of Fisheries for 1923, itself a revision and enlargement of the chapters on trout in *A manual of fish culture, based on the methods of the United States Commission of Fish and Fisheries*, revised edition, 1900. Artificial propagation of the brook trout and rainbow trout is described under such headings as: Water supply. The hatchery site. Aeration. Hatchery equipment. Taking the spawn. Production of eggs. Care of eggs and fry. Rearing ponds. Food. Preparing eggs for shipment. Distributing and planting fry and fingerlings.

MERRIMAN, DANIEL

Studies on the striped bass (*Roccus saxatilis*) of the Atlantic coast. Washington, D.C.: Government Printing Office, 1941. 77 p. illus. 28 cm. (United States. Fish and Wildlife Service. Fishery bulletin 35) Paper, \$0.20. 5066a

Contents: Abstract. Introduction. Acknowledgments. Description of the striped bass. Size and range of the striped bass. Review of the literature on the life history of the striped bass. Fluctuations in abundance of the striped bass. Spawning habits and early life history of the striped bass. Sex and age at maturity. Age and rate of growth. Migrations. Origin of the dominant 1934 year-class. Food of the striped bass. Parasites and abnormalities of the striped bass. Discussion. Recommendations. Summary and conclusions. Tables. Bibliography.

Note: This bulletin reports the results of an investigation of the striped bass of the Atlantic coast. The investigation, which was originally sponsored by the Connecticut State Board of

Fisheries and Game, and which lasted from 1936 to 1938, was undertaken to obtain information on the life history and habits of the striped bass, to study the fluctuations in abundance of this species and their causes, and to accumulate material on the effect of the fishery—both commercial and sporting—on the supply.

MOULTON, FOREST RAY, EDITOR

The migration and conservation of salmon. Publication committee: A. G. Huntsman, chairman, Henry B. Bigelow, Frank R. Lillie. Washington, D.C.: Published for the American Association for the Advancement of Science by the Science Press, 1939. 106 p. illus. 26 cm. (The American Association for the Advancement of Science. Publication no. 8) \$2.50. 5067

Contents (abridged): Migrations of European salmon, by W. J. M. Menzies. Atlantic salmon of the Gulf of St. Lawrence, by D. L. Belding. Migration and conservation of Atlantic salmon for Canada's Maritime Provinces, by A. G. Huntsman. Conservation of Pacific salmon in western states and Alaska, by W. H. Rich. Migration of Pacific salmon in British Columbia waters, by W. A. Clemens, R. E. Foerster and H. L. Pritchard. Factors controlling salmon migration, by H. B. Ward. Chemical factors affecting migration of Pacific salmon, by E. B. Powers.

Note: The first symposium in the field of the biological sciences to be published for the American Association for the Advancement of Science. Since salmon are found in waters of the United States, Canada, and Great Britain the papers have been submitted by specialists from each of these countries. The final paper is an edited report of a meeting held by participants of the symposium at which the papers were discussed informally. Each paper includes a list of references.

SETTE, OSCAR ELTON

Biology of the Atlantic mackerel (*Scomber scombrus*) of North America. Part I: Early life history, including the growth, drift, and mortality of the egg and larval populations. Washington, D.C.: Government Printing Office, 1943. 88 p. illus. 27 cm. (United States. Fish and Wildlife Service. Fishery bulletin 38) Paper, \$0.25. 5067a

Contents: Abstract. Introduction: Account of field work. Synopsis of results. Significance of results. Life history: Reproductive age. Fecundity. Spawning grounds and spawning seasons. Number of eggs spawned and size of spawning stock. Spawning habits. The egg. The larva. Growth. Drift and migration. Mortality. Appendix: Methods of determining size at maturity. Methods of collecting eggs and larvae. Enumeration of eggs and larvae. Computations of catch per station. Records of tow netting and catches of 1932. Sizes of youngest post-planktonic mackerel. Literature cited.

Note: This portion of a comprehensive study on the Atlantic mackerel treats of its early life history from spawning up to about the time the schooling habit develops. Emphasis is on the quantitative aspects, and figures are presented showing the vital statistics of the mackerel population on the American side of the North Atlantic. The experiments reported were carried on during the ten-year period 1926-1935. This is the first of a series of four papers to be published on the life history of the mackerel, with special reference to its fluctuations in abundance. This part gives particular attention to the problem of variations in the annual replenishment of the commercial stock.

WALFORD, LIONEL ALBERT

Effect of currents on distribution and survival of the eggs and larvae of the haddock (*Melanogrammus aeglefinus*) on Georges Bank. Washington, D.C.: Government Printing Office, 1938. 73 p. illus. 28 cm. (United States. Bureau of Fisheries. Bulletin no. 29) Paper, \$0.15. 5068

Contents: Introduction. The spawning areas of haddock on Georges Bank. Dispersal of eggs from the spawning areas. Distribution of larvae south of Nantucket Shoals. Results. Sum-

mary. Appendix: Methods used in this study. Identification and developmental stages of the eggs. Relation between rate of development and temperature. Age of the larvae. Summary of appendix. Bibliography.

Note: The aims of the study published in this bulletin were to chart the spawning grounds of the American haddock on Georges Bank in 1931 and 1932; to trace the drift of the eggs and larvae; to find whether Georges Bank was supplied with young haddock from other breeding grounds; and to learn the effect on the brood of changes in the direction of drift.

Veterinary Medicine

BAKER, EUSTACE THURMAN

The home veterinarian's handbook, a guide for handling emergencies in farm animals and poultry. New York: The Macmillan Company, 1944. 191 p. illus. 21 cm. \$2.50. 5069

Note: In this book approximately 700 terms and subjects are arranged in alphabetical order and defined briefly. The definition, symptoms, first aid, and special cautions for each disease are given in brief outline, and in many cases the reader is advised to call a veterinarian rather than attempt home treatment himself. There are 54 photographs of actual cases in the author's experience, and an index for ready reference.

BILLINGS, WILLIAM ARTHUR

Live-stock and poultry diseases, in five parts. New York: The Macmillan Company, 1930. 504 p. illus. 19 cm. (The Rural science series, edited by L. H. Bailey) \$3.50. 5070

Contents (abridged): How sanitation may prevent live-stock disease. Diseases and infectious diseases of cattle. Diseases of the udder. Diseases and parasites of the skin. Calving time and breeding troubles. Infectious diseases of the horse. Parasites of the horse. Diseases of the skin, legs, and feet. Infectious disease and parasites of sheep. Breeding and lambing time. Infectious diseases and parasites of swine. Farrowing time. Contagious diseases, parasites and other ailments of poultry.

Note: This book is primarily for the livestock owner. Contagious and parasitic diseases, injuries, unsoundnesses, and other ailments are classified under the livestock group which they affect—horses, cattle, sheep, swine, and poultry. Each disease is described so that it may be easily identified; suggestions are made for treatment, and advice is given on the occasions when professional help should be summoned. Illustrations of operations, etc., clarify the text.

BRUMLEY, OSCAR VICTOR

A text-book of the diseases of the small domestic animals. Fourth edition, thoroughly revised. Illustrated with 37 engravings. Philadelphia: Lea & Febiger, 1943. 422 p. illus. 24 cm. \$5.00. 5071

Contents: Diseases of the respiratory system. Diseases of the circulatory system. Diseases of the digestive tract. Diseases of the reproductive organs. Diseases of the blood and blood-producing organs. Diseases of metabolism. Diseases of the organs of locomotion. Diseases of the urinary system. Diseases of the nervous system. Diseases of the skin. Diseases of the ear. Diseases of the eye. Hernia. Infectious diseases.

Note: This work includes all the important diseases of the dog, cat, rabbit, and other small animals, both medical and surgical. The definition, etiology, symptoms, diagnosis, prognosis, and treatment of each disease are covered. The book is designed as a guide for the practitioner and a practical text for the student.

DYKSTRA, RALPH RALPH

Animal sanitation and disease control. Danville, Ill.: The Interstate Printers and Publishers, 1942. 558 p. illus. 22 cm. \$2.85. 5072

Contents: Some animal health factors. Some animal disease factors. Some methods of disease control. Infections and their handling. External parasites and their control. Non-infectious,

sporadic ailments. Infectious and communicable ailments. Some infectious and communicable ailments of barnyard fowl. Parasites and disease. Miscellaneous information. Livestock sanitary bureaus, boards, and commissions, and the veterinarian. Index.

Note: A text and reference book presenting the fundamentals of veterinary service and the part played by the veterinarian in conserving livestock. Written for the teacher, student, and farmer, the work outlines principles and methods for the prevention of animal ailments by reducing the danger of infection through cleanliness and other sanitary measures. No attempt to discuss treatment of animal ailments is made in this book.

FELDMAN, WILLIAM HUGH

Avian tuberculosis infections. Baltimore: The Williams & Wilkins Company, 1938. 483 p. illus. 23 cm. \$7.00. 5073

Contents: General considerations. Biologic characteristics of *Mycobacterium tuberculosis avium*. Isolation and culture of avian tubercle bacilli. Tuberculosis in chickens. Pathogenicity of avian tubercle bacilli for fowl other than chickens, for certain mammals other than man; for cattle and swine; for human beings. Tuberculin and the tuberculin test. Dissemination and control of avian tuberculosis.

Note: A thorough reference book for the research worker and the veterinarian concerning the characteristics of avian tuberculosis, its diagnosis, its pathogenicity, and its dissemination and control.

FOUST, HARRY LEWIS

Atlas and dissection guide for the study of anatomy of domestic animals. Ames, Ia.: Collegiate Press, Inc., 1939. 10 p. illus. (part col.) 30 cm. \$1.75. 5074

Note: An eight by twelve inch atlas containing twenty-seven full-page plates, several in color, of the anatomy of the horse, cow, pig, dog, and chicken. Legends are in the terminology of the *Nomina anatomica veterinaria* compiled by the Committee on Anatomical Nomenclature of the American Veterinary Medical Association. Bibliographies are included with the text sections. The book is designed for students and for practicing veterinarians.

FRANK, EDWARD RAYMOND

Veterinary surgery notes. Revised edition. Minneapolis, Minn.: Burgess Publishing Co., 1942. 258 p. illus. 28 cm. \$5.00. 5075

Contents: Surgical technic. Anesthesia. Sutures, fractures, shock, gangrene. Neoplasms and cysts. Wounds. Affections of the head. Affections of the neck. Affections of the front limb. Affections of the thoracic and abdominal cavities. Affections of the anus, rectum, vagina, and penis. Affections of the hind limb. Index.

Note: This volume is the second revision of a work that was issued in 1939 and revised in 1942. Its purpose is to furnish up-to-date reference information on large animal surgery. The author is professor of surgery at Kansas State College of Agriculture and Applied Science. The book is intended both for students and for practicing veterinarians.

HADLEY, FREDERICK BROWN

Principles of veterinary science. Third edition, entirely reset. Philadelphia: W. B. Saunders Company, 1939. 594 p. illus. (part col.) 20 cm. \$4.00. 5076

Contents: Introductory. The animal body in general. The skeletal system. Muscular system. Nervous system. Circulatory system. Respiratory system. Digestive system. Urogenital system. Special systems. Animal disease in general. Veterinary medicine. Common pathologic changes. Wounds and wound infections. Animal restraint and surgery. Veterinary obstetrics. Diseases of the horse's foot. Mineral deficiency, bone and joint diseases. Diseases of the digestive organs, the urinary and reproductive organs. Unsoundness, blemishes and vices. Animal parasites and parasitic diseases. Other noncommunicable diseases. Poisons and poisoning. Appendix. Index.

Note: The purpose is to so present the subject to agricultural college students that the close relationship existing between veterinary science and natural and physical sciences is clearly brought out. The sections on structure and function are designed

to be of practical value in judging animal form, capacity, productivity, as well as in solving problems connected with the feeding and breeding of animals. Later chapters are devoted to descriptions of the nature, causes, symptoms, first-aid treatment, and control of the more common diseases to which farm animals are subject. The third edition is 155 pages larger than its predecessor as a result of a rewriting and broadening of scope. There are new sections on the origin and uses of the various economic products derived from the animal body.

HAGAN, WILLIAM ARTHUR

The infectious diseases of domestic animals, with special reference to etiology, diagnosis, and biologic therapy. Ithaca, N.Y.: Comstock Publishing Company, Inc., 1943. 665 p. illus. 24 cm. \$6.00. 5077

Contents: Part I, Mechanisms of infection and resistance: Causes of disease. Protective mechanisms of the body. Toxins and antitoxins. Lytic antibodies. Agglutinins and precipitins. Phagocytosis. Hypersensitization, anaphylaxis and allergy. Iso-antibodies. Part II, Pathogenic bacteria: Streptococci. Staphylococci. Pyogenic diphtheroid bacilli. The bacillus of green pus. Anthrax bacillus. The Brucella group. Other organisms associated with abortions in animals. The Pasteurella group. Enteric organisms. Hemophilic bacteria. The Bartonella group. The Listeria group. The swine erysipelas group. The organism of glanders. The acid-fast organisms. Pathogenic spore-bearing, and non-spore-bearing, anaerobic bacteria. The Actinobacillus group. Pathogenic actinomycetes. Part III, Bacteria-like pathogenic organisms of uncertain classification: Spirochetes. Rickettsiae. The pleuropneumonia group. Part IV, Pathogenic fungi: Dermatophytic fungi. Fungi causing mycoses of internal organs of animals. Part V, Pathogenic Protozoa: Mastigophora. Sporozoa. The pathogenic ciliates. Pathogenic Protozoa of undetermined classification. Part VI, Viruses: Virus diseases characterized by lesions of the skin. By lesions of the central nervous system. By catarrhal or generalized infections. By tumor formation. Index.

Note: Since the main purpose of this book is to instruct students of veterinary medicine, the material is presented, not as a systematic discussion of disease-producing organisms, but as an account of infectious diseases of animals with special reference to etiological factors. A knowledge of general principles of bacteriology is assumed. In the case of animal pathogens transmissible to man, what is known of the mode of transmission is reported, together with a brief discussion of the disease in man. Bergey's *Manual* has been followed in respect of the nomenclature of bacteria. This book is intended for use as a textbook in schools of veterinary medicine, and for veterinary practitioners, laboratory workers, and for research workers using experimental animals.

HEWITT, REDGINAL IRVING

Bird malaria. Baltimore: The Johns Hopkins Press, 1940. 228 p. illus. (part col.) 23 cm. (The American journal of hygiene; monograph series. No. 15, July, 1940) \$1.10. 5077a

Contents: The discovery and early history of bird malaria. Geographical distribution, incidence and host records. Experimental hosts and methods. Species of bird malaria parasites. Characteristics of laboratory infections. Symptomatology and pathology. Immune reactions. The effects of drugs and chemicals on infections. The sexual cycle and mosquito transmission. Exoerythrocytic stages associated with the life cycle. Problems for investigation. General bibliography. Classified bibliography. Index.

Note: The purpose of this monograph is to present a survey of the materials, methods, and results of the entire field of bird malaria for graduate students and research workers who may or may not be familiar with the early history of the subject. The literature of the field from 1885 to 1940 is summarized and the various contributions to the knowledge of the subject are evaluated, tabulated, and graphically illustrated. The bibliography covers 532 entries and is indexed by author and by subject.

KELSER, RAYMOND ALEXANDER, AND HARRY W. SCHOENING

Manual of veterinary bacteriology. Fourth edition. Baltimore: The Williams & Wilkins Company, 1943. 719 p. illus. (part col.) 23 cm. \$6.50. 5078

Contents: Morphology, physiology, and classification of bacteria. Bacteriological methods. Infection and immunity. Bacterial variation. Pathogenic organisms of the class Schizomycetes. Pathogenic fungi. The Protozoa. The filtrable viruses and Rickettsiae. Serology. Hematology. Preparation of veterinary biological products. Bacteriological examination of milk and water. Index.

Note: In this textbook only those organisms are considered that are of interest in veterinary medicine. Sections on Protozoa and hematology have been included, since knowledge of these subjects is also essential to the veterinarian. In this edition the book has been given a careful revision, special attention having been directed to the chapters on virus diseases, stains and staining methods, streptococci and staphylococci, Brucella, and Protozoa. The volume is intended for students and practitioners of veterinary medicine, technicians working in this field, and also for research workers engaged in animal experimentation.

LUCKER, JOHN THOMAS

Development of the swine nematode *Strongyloides ransomi* and the behavior of its infective larvae. Washington, D.C.: Government Printing Office, 1934. 31 p. illus. 23 cm. (United States. Department of Agriculture. Technical bulletin no. 437) \$0.05. 5079

Contents: Introduction. Scope and methods of investigation. Preparasitic development of *Strongyloides ransomi*. Paths of entry of infective larvae into host. Development of *Strongyloides ransomi* in normal and other hosts. Discussion of preparasitic and parasitic development of *Strongyloides ransomi*. Effects of environmental factors on viability of eggs and survival of larvae. Reactions of infective larvae to stimuli and environment. Clinical symptoms of pathogenicity. Suggestions for the control of the parasite. Summary and conclusions. Literature cited.

Note: This bulletin presents the results of studies of the life cycle and behavior of the infective larvae of *Strongyloides ransomi*, the species of common occurrence in pigs in the United States, which were undertaken for the purpose of discovering facts that might be of value in connection with the control of this parasite. The investigations were conducted at Beltsville, Maryland, from October, 1932 to May, 1933.

MERCHANT, IVAL ARTHUR, AND R. ALLEN PACKER

Handbook for the etiology, diagnosis and control of infectious bovine mastitis. Minneapolis, Minn.: Burgess Publishing Company, 1944. 66 1. illus. 21 cm. Paper, \$1.25. 5080

Contents: Introduction. Predisposing factors in mastitis. Bacteriology of mastitis. Diagnosis of mastitis. The control of mastitis. Treatment of mastitis. Conclusion. References.

Note: This volume on bovine mastitis, an infectious disease of the udder was prepared largely for students, but it is intended also to be helpful to practicing veterinarians.

MERCHANT, IVAL ARTHUR

Veterinary bacteriology. Second edition. Ames, Ia.: The Iowa State College Press, 1942. 640 p. illus. 23 cm. \$6.50. 5081

Contents: Part I, General biology of micro-organisms: The scope and history of bacteriology. Morphology and colony characteristics of bacteria, yeasts, and molds. The physiology of micro-organisms. Bacteriological techniques and methods. Sterilization and disinfection. Part II, Infection, resistance, and immunity: The mechanism of infection. The principles of immunity. Toxin and antitoxin. Agglutination and precipitation. Cytolysis and alexin fixation. Phagocytosis. Anaphylaxis and allergy. Part III, Classification and characteristics of pathogenic bacteria. Index.

Note: The third part, the major section of the book, includes detailed discussion of all of the significant species of bacteria pathogenic to animals and of many of the common species pathogenic to man. Each organism is discussed and described according to the following outline: Synonyms and history, distribution and transmission. Morphology and staining. Cultural requirements and characteristics, resistance, biochemical properties. Antigenic structure and toxins. Pathogenicity, immunity, and diagnosis. The morphology and physiology of bacteria in

general, technical methods, disinfectants and disinfection, infection, resistance and immunity are treated. There are chapter bibliographies.

MORGAN, BANNER BILL

2. Bovine trichomoniasis: a monograph on *Trichomonas foetus*. Minneapolis, Minn.: Burgess Publishing Company, 1944. 150 l. illus. 27 cm. Paper, \$3.25. 5082

Contents: Introduction. Morphology and life cycle. Isolation of *Trichomonas foetus*. Cultivation. Symptoms and lesions. Diagnosis. Serology. Immunity. Hydrogen-ion concentration. Animal experimentation. Prevention and control. Miscellaneous. Bibliography. Appendix: Parasite-host list of *Trichomonas*. Instructions on the use of equipment for the diagnosis of bovine trichomoniasis.

Note: This monograph on bovine genital trichomoniasis, an infectious venereal disease first discovered in the United States in 1932, contains a survey of the literature on the subject, supplemented by the researches and experience of the author. As the disease is of microbial origin and causes abortions and infertility in cattle, this treatise contains information of reference value to micro-biologists, protozoologists, parasitologists, veterinarians, and other students of animal husbandry. It describes the disease, and methods for its diagnosis, prevention, and control.

MYERS, JAY ARTHUR

Man's greatest victory over tuberculosis. Springfield, Ill.: Charles C. Thomas, 1940. 419 p. illus. 26 cm. \$5.00. 5083

Contents: Cattle as the core of civilization. Diseases among animals. The veterinarian. Recognition and sacrifices of veterinarians. Some accomplishments of the veterinarians. The United States Bureau of Animal Industry. Quarantine. Federal inspection of meats. Geographic distribution and prevalence of tuberculosis in cattle. Nature of tuberculosis. The tubercle bacillus. Tuberculin. The tuberculin test. Diagnosis of tuberculosis in cattle. Treatment of tuberculosis in cattle. Immunity. Bovine type of tuberculosis in man. Efforts of veterinarians to protect man against the bovine type of tuberculosis. Attempts to control tuberculosis among cattle in Europe. Early attempts to control tuberculosis in the United States. Education and legislation. Eradication of bovine tuberculosis. The economy of eradication of bovine tuberculosis. Opposition to the eradication program. Tuberculosis in animals other than cattle. Lessons for physicians in human medicine. Bibliography. Index.

Note: An arresting and authentic account of the control and eradication of bovine tuberculosis from the animal herds of the United States. For more than two decades this was the objective of the organized veterinary forces of the United States. With the control of tuberculosis among animals, there has been a tumbling down of mortality and morbidity rates, as well as a sharp decline in the infection attack rate in man. These investigations of the veterinarians have resulted in the discovery of many facts concerning tuberculosis in animals and man which are of great value.

RUNNELLS, RUSSELL ALGER

Animal pathology. Third edition. Ames, Ia.: The Iowa State College Press, 1944. 594 p. illus. 23 cm. \$6.00. 5084

Contents: Part I, General pathology: Introduction. Predisposing factors of disease. The causes of disease. Disturbances of development. Disturbances in circulation. Disturbances in the nutrition and growth of cells. Disturbances of cell metabolism. Death. The defenses of the body against injury. Disturbances due to food deficiencies. Concretions. Tumors. Part II, Systemic pathology: Cardiovascular system. Blood-forming organs. Respiratory system. Digestive system. Urinary system. Genital system. Nervous system. Part III, Special pathology of the specific infectious diseases: Streptococcal diseases. Botryomycosis. Diseases caused by the colon-typhoid organisms. Brucellosis. Pasteurellosis. Anthrax. Clostridial diseases. Actinomycosis and actinobacillosis. Necrobacillosis. Swine erysipelas. Tuberculosis and paratuberculosis. Diphtheroid bacterial infections. Glanders. Dermatropic virus diseases. Neurotropic virus diseases. Organotropic virus diseases. Acute general virus diseases. Index.

Note: This text has been adopted by a majority of veterinary colleges in the United States and Canada for beginning courses in general and special pathology. In addition to textbook use, it is used as a reference book by practicing veterinarians. It contains 184 photographs and drawings. Bibliographies are ap-

pended to the chapters. The third edition contains new introductory sections on functional disturbances in each of the chapters of part II, plus minor textual additions. The work was first published in 1935 under title: *A guide to the study of special veterinary pathology*.

SISSON, SEPTIMUS

The anatomy of domestic animals. Revised by James Daniels Grossman. With 770 illustrations, many in colors. Third edition, revised. Philadelphia: W. B. Saunders Company, 1938. 972 p. illus. (part col.) 27 cm. \$12.00. 5085

Contents (abridged): Osteology. Arthrology. Myology. Splanchnology. Respiratory system. Urogenital system. Male genital organs. Female genital organs. Angiology. Neurology—the nervous system. Aesthesiology. The chicken. Index.

Note: The purpose of this book is to provide a presentation of veterinary comparative anatomy to meet the requirements of courses in the subject as taught in schools of veterinary medicine in the United States. The approach is systematic and logical with a view to training the student in fundamentals. Because of the 770 illustrations, nearly 100 of them in colors, the book is in many respects also an anatomic atlas. By a special method of formalin injections, the errors caused by changes taking place between time of death and postmortem have been overcome, thus the frozen and formalin-hardened sections shown in this book present the correct anatomic relations as they exist in the living animal. In practically every case, parts are marked directly on the illustrations, or fully detailed in descriptive legends, in order that the student may comprehend relational anatomy without necessity of reading the text. Arteries, veins, nerves are shown in different colored inks. In the revision for the third edition, necessary changes have been made to incorporate newer concepts. An entirely new chapter has been included on the anatomy of the chicken. The number of illustrations has been increased and numerous older figures have been replaced by more up-to-date illustrations.

UDALL, DENNEY HAMMOND

The practice of veterinary medicine. With one hundred and two illustrations. Fourth revised edition. Ithaca, N.Y.: Published by the author, 1943. 723 p. illus. 24 cm. \$6.50. 5086

Contents (abridged): Diseases of the respiratory system. Diseases of the digestive system. Diseases of the urinary system. Diseases of the heart. Diseases of the blood-forming organs. Diseases of the nervous system. Diseases of the skin. Disorders of metabolism. Infectious diseases: Acute bacterial diseases. Virus diseases. Chronic infectious diseases. Protozoan diseases. Metazoan diseases. Poisoning. Index.

Note: A comprehensive reference work for the practicing veterinarian and student, presenting concise and systematic descriptions of the various internal diseases of herbivorous animals and swine. The material is based on a survey of the extant literature of the field as well as upon the author's clinical experience and research projects, the latter particularly in the case of diseases of the newborn, chronic mastitis, and various affections of the respiratory and digestive systems. Diseases and disorders are listed in anatomical order under each of the main systems, and definition, etiology, symptoms, treatment, and morbid anatomy are given, together with occasional photographs and lists of additional references. The fourth edition includes about 50 pages of new material, including the treatment and control of certain parasitic diseases, the treatment of numerous infectious diseases with sulfa drugs, and the control of specific infections with improved vaccines. There is also a new section on allergy and new references.

UNITED STATES. DEPARTMENT OF AGRICULTURE

Keeping livestock healthy, edited by Gove Hambidge and Marion Julia Drown. Washington, D.C.: Government Printing Office, 1942. 1276 p. illus. 23 cm. (United States. Department of Agriculture. Yearbook of agriculture 1942) \$1.75. 5087

Contents: 1942 yearbook committee. Foreword—Keep 'em healthy! by Claude R. Wickard. Keeping livestock healthy—a summary, by Gove Hambidge. Part I, Fundamentals of disease and insect control: Losses caused by animal diseases and para-

sites. Causes of disease. Protective mechanisms against disease. The endocrine glands in health and disease. The relation of genetics to disease. Artificial insemination and disease control. Disinfection and disinfectants. How research aids in disease control. Origin and spread of important insect pests of animals. Regulatory activities in animal-disease control. Fighting disease with knowledge. Part 2, Important general diseases common to several species: Tuberculosis and its eradication. Anthrax. Foot-and-mouth disease. Parasites and insects affecting livestock. Bacterial infections and parasites common to man and animals. The screwworm and blowfly problem. Nutritional diseases of farm animals. Plants poisonous to livestock. Part 3, Common diseases and parasites of horses and mules: Equine encephalomyelitis. Equine infectious anemia, or swamp fever. Periodic ophthalmia of horses. Glanders. Dourine. Miscellaneous diseases of equines. Internal parasites of horses and mules. Mange in equines. Horse bots and their control. Some insect pests of horses and mules. Part 4, Diseases and parasites of cattle: Brucellosis of cattle. John's disease. Bovine mastitis. Blackleg. Shipping fever, or hemorrhagic septicemia. Milk fever. Miscellaneous diseases of cattle. Cattle coccidiosis. Cattle tick fever. Anaplasmosis; a disease of cattle. Cattle scab and its control. Tapeworm and roundworm parasites of cattle. Bovine genital trichomoniasis. Cattle grubs, or heel flies. The stablefly. The horn fly. Cattle lice. Cattle injuries caused by ingesting foreign objects. Paint poisoning in cattle. Nutritional diseases of cattle. Part 5, Diseases and parasites of swine: Hog cholera. Swine erysipelas. Enteritis of swine. Swine influenza. Miscellaneous diseases of swine. Brucellosis (infectious abortion) in swine. Mange of swine. Hog lice. Internal parasites of swine. Trichinosis. Salt tolerance and salt poisoning of swine. Nutritional diseases of swine. Part 6, Diseases and parasites of sheep and goats: Foot rot of sheep. Sore mouth of sheep and goats. Miscellaneous diseases of sheep and goats. Internal parasites of sheep and goats. Sheep scab and its control. Sheep ticks. Goat lice. Pregnancy disease of sheep. Lunger disease of sheep. Part 7, Common diseases and parasites of poultry: Pullorum disease. Fowl paralysis and other forms of the avian leukosis complex. Respiratory diseases of chickens and turkeys. Fowl pox (diphtheria). Psittacosis. Miscellaneous diseases of poultry. Internal parasites of poultry. Coccidiosis of the chicken. Poultry lice and their control. Poultry mites. The fowl tick. Bedbugs as pests of poultry. The pigeon fly. Nutritional diseases of poultry. Part 8, Common diseases and parasites of dogs and cats: Rabies and its control. Distemper of dogs. Feline enteritis. Miscellaneous diseases of dogs and cats. Internal parasites of dogs and cats. Mange of dogs. Ticks affecting dogs. Fleas. Running fits (fright disease). Nonparasitic skin diseases of dogs and cats. Nutritional diseases of dogs and cats. Part 9, Wildlife diseases and parasites: Diseases of wildlife and their relationship to domestic livestock. Diseases of farm-raised game birds. Diseases of fur animals. Index.

Note: This volume is a complete popular handbook on the diseases and parasites that attack domestic animals. The chapters are written by various scientists of the Department of Agriculture. Effort was made to give both the needed practical information and the scientific background of each disease; to this end for most of the diseases described the following facts are treated: history, symptoms, diagnosis, treatment, method of eradication, literature cited. The book is intended to be of

use to students of agriculture and technical workers as well as to farmers and veterinarians.

UNITED STATES. BUREAU OF ANIMAL INDUSTRY

Index-catalogue of medical and veterinary zoology. Parts 1-6. By Albert Hassall, Margie Potter, Mildred A. Doss, Marion M. Farr, Gertrude B. Carson, Dorothy Bero, Ruth M. Taylor, Dorothy B. Segal, Zoological Division, Bureau of Animal Industry. Washington, D.C.: Government Printing Office, 1932-42. 6 v. 23 cm. Part I, \$0.10; part II, \$0.55; part III, \$0.40; part IV, \$0.30; part V, \$0.45; part VI, \$0.40. 5088

Note: This set is in progress of publication. The six parts so far published comprise an author catalogue through the letter G indexing, alphabetically by author, articles in the field of medical and veterinary zoology from serial publications, lists of which are given. The set is a revision and continuation of the *Index-catalogue of medical and veterinary zoology—Authors*, by Charles Wardwell Stiles and Albert Hassall, published in 1902-12 as Bureau of Animal Industry Bulletin 39, which has been incorporated in the present publication.

VAN ES, LEUNIS

The principles of animal hygiene and preventive veterinary medicine. New York: John Wiley & Sons, Inc., 1932. 768 p. illus. 24 cm. \$6.50.

5089

Contents: Introduction. Heredity. Soil. Air and ventilation. Water. Food. Radiant energy. Weather and climate. Stables and enclosures. Individual care and management. Disposal of wastes. Disinfection and disinfectants. Disinfection and disinfectants. Equine epizootic lymphangitis. Actinomycosis. Tuberculosis. Paratuberculosis. Glanders. Strangles. Joint-ill of foals. Bovine mastitis. The abortifacient infections. Anthrax. Blackleg. Malignant edema. Braxy. Tetanus. Hemorrhage septicemia. Pig typhus. Bacillary white diarrhea. Fowl typhus. White scours. Swine erysipelas. Contagious bovine pleuro-pneumonia. Foot and mouth disease. Hog cholera. Fowlpest. African horse sickness. Canine distemper. Cattle plague. Swamp fever. Bluetongue. Heartwater. Rabies. Pox. The piroplasmoses. The trypanosomes. Coccidiosis. Blackhead. Helminthoses. Scabies. Index.

Note: A summation and evaluation of the evidence presented in literature in the light of the author's observation and analysis. The subject is given in a conservative manner, and a brief list of bibliographic references is appended to each chapter. A general correlation between all phases of the text is a feature of the treatment. A separate division of the book is given to genetics or heritable factors as they apply to animal health and well being.

FORESTRY

ALLEN, SHIRLEY WALTER

An introduction to American forestry. First edition. New York: McGraw-Hill Book Company, Inc., 1938. 402 p. illus. 23 cm. (American forestry series) \$3.50. 5090

Contents: Man and the forest. Building the country with forests. Where our forests are and what they produce. What a forest is. Forestry which has a forest to start with. Forestry which starts with bare ground. Defending the forest from fire. Defending the forest from insects and attacks of other animals. Defending the forest from fungous pests and the elements. Measuring the forest. Harvesting the forest crop. Making forest products adaptable and durable. Beneficial influences and services from the forest. Forestry as public policy in the United States. How the Forest Service and other federal bureaus practice. How the states and communities practice forestry. The practice of forestry on private lands. Education in forestry—the profession of forestry. Forestry and national planning. Appendix.

Note: A discussion of the part played by forests in the life of the people of the United States and how they may be conserved and used to the advantage of all concerned. The greater part of the volume deals with the science of forestry, what it is, and what it can accomplish with the cooperation of public and private enterprise. The author describes how depleted and ravaged forests may be reestablished, and how they may be protected from fire and injurious insects. Appendixes summarize forest-fire statistics, activities of state departments of forestry, and outline the attractions of forestry as a career. References are listed at the end of each chapter. There is an index.

BAKER, FREDERICK STORRS

Theory and practice of silviculture. New York: McGraw-Hill Book Company, Inc., 1934. 502 p. illus. 23 cm. (American forestry series) \$5.00. 5091

Contents: Introduction. Part I, Plant physiology: Forest genetics. The water cycle. The carbon cycle, photosynthesis. The nitrogen and mineral cycles. Growth of trees. Reproduction of the forest. Injury, disease and death of forest trees. Part II, Forest ecology: Forest types and sites. Form and composition of stands. Density of stands. Tolerance. The theory of succession. Crown classification. Part III, Systematized silvicultural experience: Silvicultural systems depending on seed for reproduction. Coppice forests. The analysis of silvicultural systems. Intermediate cuttings. Part IV, The forest itself as a source of silvicultural knowledge: Field studies in silviculture. Part V, Silvicultural literature: Applied silviculture. Applied silviculture—western United States.

Note: This book is designed for the practicing forester. Special attention is given to the relationship of trees to light and to soil moisture.

BALDWIN, HENRY IVES

Forest tree seed of the north temperate regions, with special reference to North America. Waltham, Mass.: Chronica Botanica Company, 1942. 240 p. illus. 27 cm. (A new series of plant science books, edited by Frans Verdoorn. Vol. VIII) \$4.75. 5092

Contents: Structure and development of tree seeds. Seed production of forest trees. Seed origin or provenance. Seed collection. Extraction and cleaning of seed. Storage and longevity. Biotic enemies of tree seeds. Germination. Internal factors affecting germination. Environmental factors influencing germination. Chemistry of seeds and germination. Seed stimulation. Seed testing. Purity analysis. Determination of origin. Determination of seed viability without germination. Testing of germination. Seed testing stations and seed certification. True seed

research. Glossary of tree seed terms. Index of plant and animal names. Author index.

Note: A brief compilation of the widely scattered knowledge of the life history and behavior of tree seeds, and the problems encountered by the forester and nurseryman in collecting, extracting, storing, and preparing seeds for sowing. The significance of seed source for the success of plantings is emphasized. A special feature is the glossary of tree seed terms which includes many equivalents in other languages. Extensive references to the literature are found at end of all but the last chapter.

BAXTER, DOW VAWTER

Pathology in forest practice. New York: John Wiley & Sons, Inc., 1943. 618 p. illus. 23 cm. \$5.50. 5093

Contents: Plant disease. The fungi which cause disease. Loss and appraisal of damage. Relation of nursery site and practice to disease incidence. Relation of site and cultural practice to disease incidence in plantations. Relation of site and cultural practice to disease incidence in the mature forest. Relation of fungi and certain other plant pests to disease in the mature forest. Relation of site and care of shade and park trees to disease incidence. Handling and treatment of forest products in relation to decay and certain other defects. Discolorations, stains, and molds in forest products. Index.

Note: The problems of pathology in forest practice are discussed in this book in the aspect in which they present themselves to the practicing forester in the nursery, the plantation, the forest, the park, and in industry. Stress is placed on a working knowledge of the conditions which favor the development of various diseases and on the practical measures which can be taken to reduce their incidence or severity. A large amount of source material not commonly reached by foresters, such as unpublished reports, mimeographed material, data from commercial organizations, and journals devoted to other fields, were consulted in the preparation of the book. The author not only cites the results of investigations, but freely interprets these results for the reader. Abundant illustrations are included.

BOYCE, JOHN SHAW

Forest pathology. New York: McGraw-Hill Book Company, Inc., 1938. 600 p. illus. 23 cm. (American forestry series, W. Mulford, consulting editor) \$5.00. 5094

Contents: Introduction. Disease. The fungi. Noninfectious diseases. Seedling diseases. Root diseases. Foliage diseases of hardwoods. Foliage diseases of conifers. Stem diseases: rusts of conifers. White pine blister rust. Stem diseases: cankers of conifers. Stem diseases: cankers of hardwoods. Stem diseases: galls and witches' brooms. Stem diseases: diebacks and wilts. Stem diseases caused by mistletoes, dwarf mistletoes, epiphytes, and climbers. Stem diseases: decay. The rots. Deterioration of dead timber. Deterioration of forest products: decay. Deterioration of forest products: sap stains. Principles of forest-disease control.

Note: A text and reference book on the diseases of forest trees and of forest products of the United States and Canada and how they can be controlled. Discusses the causal organisms, symptoms, and control of diseases, beginning with trees as seedlings, progressing through maturity, and then considering the deterioration of dead timber and the manufactured products. Diseases of living trees are grouped according to the parts of the tree on which they occur.

BUTTRICK, PHILIP LAURENCE

Forest economics and finance. New York: John Wiley & Sons, Inc., 1943. 484 p. illus. 23 cm. \$4.50. 5095

Contents: Part I, The economic and financial bases of forest enterprises: Introduction. The financing of forest enterprises. Business and financial organization. Nature of capital and credit.

The nature of investments. Interest and discount. Appreciation and depreciation. Value, cost, price, and profit. Part II, Special economic factors in forestry: Economic and social value of forests. The economics of forest exploitation and conservation. Economic history of American forest industries. Demand for forest products in relation to the practice of forestry. Land as the basis of forest enterprise. Costs and profits in forestry. Sustained-yield forestry. Economics of protection, recreation, and wildlife forestry. Forest taxation, tariffs, and insurance. The appraisal of forest values. Part III, Forestry as a private and a public enterprise: Forestry as a private enterprise. Economics of public forests. Public assistance and regulations of private forests. Appendix. Index.

Note: The author presents a background of economic fundamentals in forestry terms in a way that should be helpful to all foresters and to others who are interested in forestry. The subject matter of the book is so presented as to be readily understandable and interesting. The book gives a thorough discussion of the economic and financial aspects of forestry and the problems of forestry practice in various regions and under various types of ownership.

CHEYNEY, EDWARD GHEEN

American silvics and silviculture. Minneapolis: The University of Minnesota Press, 1942. 472 p. illus. 23 cm. \$5.00. 5096

Contents: Part I, Silvical factors: Moisture, soil, temperature, light, tolerance, hardness, reproduction, habits, snow, wind, sleet. Part II, The forest regions of the United States: Classifications and definitions. Types. Part III, Silviculture: Ideals. Basic factors. Classifications and definitions of the normal forest. The managed forest. Silvicultural systems. Clear-cutting. Seed-tree method. Shelterwood system. Selection system. Coppice. Coppice with standards. Conversion of coppice to high forest. Transition from virgin to managed forest. Application of the silvicultural systems. Part IV, Silvical descriptions of all important species: Species by scientific names. Bibliography. Index.

Note: A textbook compiling facts about the 150 commercially most important American forest species, their regional distribution and requirements, their life histories and general characteristics including hardness, tolerance and reproductive habits. In the second half of the book the author outlines a planned program of American silviculture, giving the basic factors involved, with a comparison of methods and costs for various systems. Methods of making transition from virgin to managed forests are discussed.

CLINE, ALBERT COLLINS, AND S. H. SPURR

The virgin upland forest of central New England; a study of old growth stands in the Pisgah Mountain section of southwestern New Hampshire. Petersham, Mass.: Harvard Forest, 1942. 58 p. illus. 23 cm. (Harvard Forest. Bulletin no. 21) Paper, \$0.50. 5096a

Contents: Introduction. Description of the Pisgah Mountain area. Method of study. The original forest. Disturbing influences in the virgin forest. Associations within the Pisgah virgin forest. Ecological status of the tree species. Shrubs and herbs. Soils. Summary and conclusions. Appendix. Bibliography.

Note: A monograph on the old-growth forest land situated in Cheshire county, N.H., in the northwest corner of the town of Winchester, covering an area of approximately 5,000 acres. Tables are presented giving average composition and volume, forest cover types and distribution, associations following old and recent disturbances, stand descriptions and histories, and frequency of occurrence of shrubs and herbs. Destructive agencies independent of man are also discussed.

CREAGER, DON BAKER

The Cephalosporium disease of elms. With 16 plates. Jamaica Plain, Mass.: The Arnold Arboretum of Harvard University, 1937. 91 p. illus. 25 cm. (Arnold Arboretum of Harvard University. Contributions. x) Paper, \$2.00. 5096b

Contents: Introduction. Review of literature. Symptomatology. Etiology. Control. Summary and conclusions. Acknowledgments. Literature cited. Explanation of plates.

Note: A disease of elms native to the United States similar to that of the Dutch elm disease has been found to exist practically throughout the natural range of the American elm and to be the

cause of extensive, hitherto baffling losses in nurseries, plantations, and natural stands. The present paper, which is based not only on a survey of the literature but also on three years of study both in the field and in the laboratory, discusses the causes, symptoms, course of the disease, pathogenicity of the *Cephalosporium*, the discovery of primary leaf lesions, and the discovery of the production of pycnidia on a large scale, the latter two being original contributions by the author. Studies on the control of the *Cephalosporium* disease are shown to indicate that the pathogene may be eradicated by judicious pruning and that spraying is also effective. Recommendations for combating the disease based on life history studies and control tests are listed. Thirty-nine references appear in the bibliography.

DEUBER, CARL GEORGE

Vegetative propagation of conifers. New Haven, Conn.: Yale University Press, 1940. 83 p. illus. 24 cm. (Connecticut Academy of Arts and Sciences. Transactions. Vol. 34, p. 1-83) Paper, \$1.30. 5097

Contents (abridged): General methods of procedure. Experimental. Norway spruce. Eastern white pine. Red pine. Lace bark pine. Japanese red pine. Hemlock. General discussion. Summary. Conclusions. Bibliography.

Note: Improvement in methods of securing superior planting stock for reforestation is advancing along three major lines as the transition from simple extractive forestry goes forward. These are: (1) knowledge and control of the source of the seed; (2) tree breeding, and (3) vegetative propagation. This article emphasizes the importance of vegetative reproduction in the case of conifers. The investigation here reported was largely concerned with detailed studies of cuttings of *Picea abies* and *Pinus strobus* from trees of young and old age classes, from trees in different plantations, collected throughout a year and placed under various propagating conditions, and given various physical and chemical treatments. Less extensive studies were made of the rooting of cuttings of *Pinus resinosa*, *Pinus bungeana*, *Pinus densiflora* and *Tsuga canadensis*.

DOANE, RENNIE WILBUR, AND OTHERS

Forest insects; a textbook for the use of students in forest schools, colleges, and universities, and for forest workers, by R. W. Doane, E. C. Van Dyke, W. J. Chamberlin and H. E. Burke. New York: McGraw-Hill Book Company, Inc., 1936. 463 p. illus. 23 cm. (American forestry series, W. Mulford, consulting editor) \$4.50. 5098

Contents: Importance of forest entomology. The control of forest insects: general considerations. Bark-beetle control. The control of insects injurious to forest products. Bark-beetle and ambrosia beetles. The flatheaded and the roundheaded borers. Other families of beetles. The moths and butterflies. Sawflies, hornails, bees, and ants. Aphids, scale insects, and others. Some other orders of insects and the mites. Termites or white ants.

Note: A presentation of the important part that insects play in the forest, with descriptions of the various orders of insects that are injurious to forests and forest products, and discussions of the principal methods of control recommended for each order. Bibliographical lists are appended to the chapters.

EHRlich, JOHN.

The beech bark disease: a *Nectria* disease of *Fagus* following *Cryptococcus fagi* (Baer.) With nine plates. Jamaica Plain, Mass.: The Arnold Arboretum of Harvard University, 1934. 104 p. illus. 25 cm. (Arnold Arboretum. Contributions. VII) Paper, \$2.00. 5098a

Contents: Introduction. Suspects. Names. History and range. Importance. Symptomatology. Etiology. Factors influencing development of infection and mortality. Control. Acknowledgments. Bibliography. Explanation of plates.

Note: This paper is concerned with a disease of beech (*Fagus*) caused by the sequent activity of a scale insect and a parasitic ascomycetous fungus. The European history of the disease, gleaned largely from the literature of the insect, is reviewed and its reported activity traced to the present. The conclusion is

reached that the disease in America is assuming the proportions of a fatal and spreading epiphytotic, but that it can be controlled on ornamental trees by the early use of insecticides and in forest stands by salvage and proper forest management. One hundred forty-three titles are listed in the bibliography.

GRAHAM, SAMUEL ALEXANDER

Principles of forest entomology. Second edition. New York: McGraw-Hill Book Company, Inc., 1939. 410 p. illus. 23 cm. (McGraw-Hill publications in the zoological sciences, A. F. Shull, consulting editor) \$4.00. 5099

Contents: Introduction. Historical review. Biotic potential environmental resistance. Insect abundance. Direct control of tree insects. Direct control by chemical methods. Indirect control of tree insects. Other indirect control methods. Leaf-eating insects. Meristem insects of the terminal parts. Meristem insects of the phloem region. Phloem-wood insects. Wood destroyers. Sap-sucking insects. Insectivorous parasites. Insectivorous predators. Other relations of forest insects. Bibliography. Index.

Note: A presentation of forest entomology from the forestry viewpoint, with emphasis upon the influence of insects on the forest. Various forest insects are used to illustrate principles, and a limited number of species typical of the different ecological groups and geographic regions are selected for discussion. In this edition, the sections dealing with insect abundance, termites and bark beetles, and insect-caused losses have been revised and a new chapter on indirect effects of forest insects has been provided. The bibliography has been revised and new illustrations have been added.

GUISE, CEDRIC HAY

The management of farm woodlands. New York: McGraw-Hill Book Company, Inc., 1939. 352 p. illus. 23 cm. (American forestry series, Walter Mulford, consulting editor) \$3.00. 5100

Contents: The origin and condition of farm woodlands. Forestry and farm woodlands. The structure and physiology of trees. Ecology of woodlands. The volumes of woodland products. Surveys and maps. The volumes of trees and stands. The increment and yield of growing timber. The care and improvement of woodlands. Establishing new woodlands—forest planting. Protection of farm woodlands. The utilization of woodland products. The marketing of woodland products. The durability and preservative treatment of farm timbers. Woodland management.

Note: In a comprehensive but concise manner the author deals with the economic, biologic, and technical relationships involved in growing, harvesting, and managing farm forests for continuous production. Stressing practical applications, the book offers numerous concrete examples prepared to illustrate the measuring of stands and their products, surveying and mapping of woodlands, silvicultural treatments of farm forests, etc.

HAWLEY, RALPH CHIPMAN

Forest protection. New York: John Wiley & Sons, Inc., 1937. 262 p. 23 cm. \$2.75. 5101

Contents: General considerations. Man as a source of injury to the forest. Protection against atmospheric agencies. Protection against injurious plants. Protection against insects. Protection against domestic animals—grazing. Protection against wild life—animals other than insects and domestic animals. Forest fires—effects and character. Causes of forest fires and their prevention. Presuppression activities in fire control. Fire suppression. Fire control costs and standards; fire plans. Forest fire insurance. Appendix—definitions of selected terms used in fire control. Index.

Note: A treatment of the principles which underlie protection rather than detailed instructions for carrying on specific types of work. It is not intended to be an engineering or administrative manual for any of the phases of the subject, but it affords a complete coverage of the subject as a unit, so that the reader obtains from it a balanced picture of the forest protection problem as a whole in its relation to the growing of forests. It contains in expanded and revised form the material that comprised the last nine chapters in the first three editions of the author's *The practice of silviculture*.

HAWLEY, RALPH CHIPMAN

The practice of silviculture, with particular reference to its application in the United States

of America. Fourth edition. New York: John Wiley & Sons, Inc., 1937. 252 p. illus. 23 cm. \$3.00. 5102

Contents (abridged): General considerations. Reproduction methods; treatment of the stand during the period of regeneration or establishment. The clearcutting method. Clearcutting with natural reproduction. The seed tree method. The shelterwood method. The selection method. The coppice method. The coppice with standards method. Intermediate cuttings. Slash disposal. Index.

Note: This fourth edition covers reproduction methods and intermediate cuttings. Those chapters which in former editions dealt with forest protection have been removed, thus allowing space to revise the remainder. Considerable material on clear cuttings with artificial regeneration has been added. Illustrations of modern practice are included.

HOSLEY, NEIL WETMORE

Norway spruce in the northeastern United States; a study of existing plantations. Peter-sham, Mass.: Harvard Forest, 1936. 80 p. illus. 23 cm. (Harvard Forest. Bulletin no. 19) Paper, \$0.50. 5103

Contents: Introduction. Natural range. Characteristics of the tree. Development of plantations. Silviculture of the species. Damage to plantations. The timber and its uses. Summary. Appendix. Bibliography.

Note: This is a study of 57 plantations ranging from seven to 70 years of age in Massachusetts, Vermont, Connecticut, and New York, including the natural range and characteristics of the tree, development of plantations, and the silviculture of the species. Includes data through 1933.

HUBERT, ERNEST EVERETT

An outline of forest pathology. New York: John Wiley & Sons, Inc., 1931. 543 p. illus. 24 cm. \$6.00. 5103a

Contents: Part I, Introduction: Historical. The trend in forest pathology. Classification of tree diseases. The influencing factors. The relative importance of tree diseases. Economic losses. Symptoms. Part II, Forest pathology, the principal tree diseases: Non-organic or physiogenic agencies. Organic agencies. Control methods. Part III, Wood pathology: The properties of wood affected by decay. The relative resistance of wood to decay. Saprophytic agencies. Semi-parasitic agencies. Control methods. Index.

Note: This work brings together in concise form the valuable data on forest pathology many of which are widely scattered and difficult to obtain. It covers the principles and practices of forest pathology in the United States but is general enough so that it may also be applicable both in principle and practice to forest conditions in Canada. The information is intended to serve a comparatively large group who are interested primarily in such activities as conservation, forestry, tree surgery, logging, lumbering, wood preservation, pulp and paper manufacturing, the manufacture and sale of various kinds of forest products, and all those concerned in the erection, maintenance, and protection of wooden structures. The inclusion of all available data on wood pathology as a separate branch of forest pathology extends the scope of the work to those interested in the forest as a crop, a conservation unit, or a recreation ground. There are numerous references after each topic in the text.

HUNT, STUART SHERMAN

European larch in the northeastern United States; a study of existing plantations. Peter-sham, Mass.: Harvard Forest, 1932. 45 p. illus. 22 cm. (Harvard Forest. Bulletin no. 16) \$0.50. 5103b

Contents: Introduction. Distribution of European larch. Growth and yield. Silvical characters and their influence upon the establishment of larch plantations in the northeast. Susceptibility to injury. Culture and management. Summary. Properties and uses. Bibliography.

Note: A brief, non-technical account of the qualities of the European larch from the standpoint of practical forestry. This tree, a native of the high mountains of central Europe, has been successfully planted in the United States for about 100 years and is well known for its soil improving qualities, its rapid

height growth, and its durability in outdoor construction without the use of creosote and other preservatives. Twenty-nine titles are listed in the bibliography.

McKINNON, FINDLAY STEWART, AND OTHERS

Cut-over old field pine lands in central New England; a regional study of the composition and stocking of the ensuing volunteer stands; by F. S. McKinnon, G. R. Hyde, and A. C. Cline. Petersham, Mass.: Harvard Forest, 1935. 80 p. illus. 23 cm. (Harvard Forest. Bulletin no. 18) Paper, \$0.50. 5104

Contents: Introduction. Review of related studies. Cut-over old field pine lots: conditions immediately following logging. Method of collecting data. Analysis of data. Conclusion. Bibliography and appendix.

Note: To ensure a reliable appraisal of growing stock conditions on the cut-over "old field" pine lands of central New England and to bring conclusive evidence to bear on the question of their susceptibility to cultural treatment, the authors examined two hundred and twenty-five individual stands within an area of fifteen hundred square miles. The findings show that over three-quarters of the area formerly covered with pine now supports mixed hardwood stands, and that the great majority of these have at an early age the requisites of high quality saw-timber production.

MATTHEWS, DONALD MAXWELL

Management of American forests. New York: McGraw-Hill Book Company, Inc., 1935. 495 p. illus. 24 cm. \$5.00. 5105

Contents (abridged): Part I, The foundations of forest management: The growth of the tree and the stand. The rotation and silvicultural methods of treatment. The growth and growing stock of the regulated or normal forest. Regulation of the growing stock and yield. The practical adaptation of regulatory methods to extensive American forests. The adaptation of normal yield-table data to all-age forest conditions. Field examination and report on the forest property. Part II, Financial aspects of forest management: An outline of the financial problems. The nature of capital and income in forest business. The valuation of forest land. Valuation of the timber stand or growing stock. Valuation of the forest property—financial aspects of destructive logging vs. sustained yield management. Forest taxation. Forest insurance. The appraisal of damage. Appendix. Bibliography. Index.

Note: This book deals with the practical problems of management of forest property in the United States from both the technical and the financial standpoint. Although designed primarily as a textbook, the business objectives of management have been emphasized and the illustrative material presented in a manner intended to be of use both to the student and to the forest administrator.

MITCHELL, HAROLD LOREN

Pot culture tests of forest soil fertility, with observations on the effect of varied solar radiation and nutrient supply on the growth and nitrogen content of Scots and white pine seedlings. Cornwall-on-the-Hudson, N.Y.: The Black Rock Forest, 1934. 137 p. illus. 22 cm. (Black Rock Forest. Bulletin no. 5) Paper, \$2.00. 5105a

Contents: Introduction. Available methods for determining soil fertility. Method employed in present study. Details of experimental method. Discussion of results. Quantitative evaluation of the available nitrogen in natural soils. Summary. Comment, by P. R. Gast. Appendixes. Bibliography.

Note: A detailed report of a pot culture technique for determining soil nutrient deficiencies and estimating the nutrients in forest soils available to tree species. The material is based upon the principle of nutrient extraction by plants and utilizes silvical information gained from a series of experiments at Black Rock Forest in the gross relations of various nutrient elements to the growth and chemical composition of coniferous seedlings. The method forms a sound basis for determining the success of cultural treatments designed to improve the soil of degenerate forest stands such as comprise a large portion of the Black Rock Forest. One hundred and seven references are listed in the bibliography.

MOON, FREDERICK FRANKLIN, AND NELSON COURTLANDT BROWN

Elements of forestry. Third edition, revised and reset. New York: John Wiley & Sons, Inc., 1937. 397 p. illus. 22 cm. \$3.50. 5106

Contents: Part I, History, economics and technique: Definitions, history and scope. Economic, social and technical considerations. Forest resources, ownership, areas, and volume of standing timber. The tree—functions and characteristics. Silvics—relation to environment. Silvicultural systems of management—forest renewal. Cuttings and thinnings to improve forests. Tree planting or reforestation. Forest protection against injurious agencies. Measuring the growth and yield. Harvesting (logging and manufacturing) the lumber product. Principal forest products and their utilization. Wood technology—structure and properties. Timber preservation. Forest management and sustained-yield policies. Examples of Federal, state, industrial, farm and estate forestry. Part II, Opportunities for service with organizations practicing and promoting forestry: Introduction. Federal organizations. State organizations. County, town, municipal and territorial organizations. Industrial, railroad, estate and other private organizations. Associations (forestry, lumber, protective, etc.), teaching, and consulting forestry. Appendix. Index.

Note: This book, besides the history, economics, and technique of forestry, includes recent accepted practices, legislation, etc., and outlines the various types of forest managements, national, state or private, and the opportunities for service in these fields. An appendix containing a selected bibliography and references for more extended reading, and a glossary of terms used in forestry have been included.

MUNNS, EDWARD NORFOLK

A selected bibliography of North American forestry. Washington, D.C.: Government Printing Office, 1940. 2 v. (1142 p.) 23 cm. (United States. Department of Agriculture. Miscellaneous publication no. 364) \$0.75 per volume. 5107

Contents: Volume I, General forestry. Forest botany. Forest protection. Forest mensuration. Logging and lumbering. Volume II, Wood technology. Forest economics. Forest influences. Forest aesthetics. Authors index.

Note: This bibliography of North American forestry includes 21,413 references to the more important literature on forestry published in continental North America, the West Indies, and the Hawaiian Islands prior to 1940. It supplements the material contained in *Catalogue of publications relating to forestry in the Library of the United States Department of Agriculture* (U.S. Department of Agriculture Library. Bulletin 76), 302 p., 1912. It was issued as part of a series of similar forestry bibliographies being prepared by various nations under the general impetus of the International Union of Forest Research Organizations.

RAUP, HUGH MILLER, AND REYNOLD E. CARLSON

The history of land use in the Harvard Forest. Petersham, Mass.: Harvard Forest, 1941. 64 p. illus. 23 cm. (Harvard Forest. Bulletin no. 20) Paper, \$0.65. 5108

Contents: Foreword. Introduction. Previous work. Methodology. History of agriculture. Local industries. Petersham in decline. Forest history. Appendix. Bibliography.

Note: This history since 1733 of the land in the Harvard Forest of 2,300 acres at Petersham, Massachusetts, is based upon the premise that present-day forest management cannot be carried on effectively without some knowledge of past land use. Although the study is chiefly of interest to foresters, it also presents a valuable picture of the economic and social development of this typical small New England town.

SCHROEDER, GEORGE HARWOOD

The art and science of protecting forest lands from fire. Corvallis, Oregon: O.S.C. Cooperative Association, 1938. 184 p. illus. 26 cm. Paper, \$3.50. 5110

Contents: Part I, Foundation material to the study of protection of forest land from fire: Introduction. The history of forest fires

and their control. The necessity for forest protection from fire. Causes of forest fires. Part II, Fire prevention: Public education. Law enforcement. Hazard reduction. Part III, Presuppression: Fire control planning. Organization of men, equipment and supplies. Detection. Communication. Transportation. Part IV, Fire suppression: The science of fire. Finding the fire. Extinguishing small fires. National forest fire policy. Appendix: Glossary. National and state fire laws. Selected references.

Note: A manual for students of forestry and forest-fire control, designed to give a broad picture of the causes of the fires, the extent of destruction caused, and the various methods of preventing and extinguishing forest fires. Some of the topics discussed under the latter heading are: selection of the point of attack, judging air movements and time element, locating and constructing the fire line or artificial fire break, backfiring, and patrolling. A detailed account of detection and lookout systems is also included. The bibliography contains 417 titles arranged by subject heading.

SOCIETY OF AMERICAN FORESTERS

Forestry terminology. A glossary of technical terms used in forestry. Compiled and edited by the Committee on Forestry Terminology, Ralph C. Hawley, chairman. Washington, D.C.: Society of American Foresters, 1944. 84 p. 26 cm. \$2.00. 5111

Note: The glossary has been limited to (1) terms used in a special sense by foresters, and (2) terms from other sciences and industries the meaning of which a forester should know and which may not be defined in other glossaries or texts likely to be available to the average forester. The primary aim of the work is to promote among foresters a uniformity in usage of terms of special meaning in forestry. Self-evident or ordinary dictionary terms have been excluded. There are approximately 3,000 terms listed.

TOUMEY, JAMES WILLIAM

Foundations of silviculture upon an ecological basis. Second edition, revised by Clarence F. Korstian. New York: John Wiley & Sons, Inc., 1937. 456 p. illus. 23 cm. \$4.50. 5112

Contents: Introduction, definitions and generalities. Environment of the forest: Solar radiation. Air temperature. Atmospheric moisture. Climate. Soil conditions. Soil moisture and its influence on forest vegetation. Physiographic conditions. Biotic conditions. Interaction of site factors. Influence of the forest on its environment: Reactions of forest vegetation on its physical environment. Effects of forests on animal life, particularly mankind. The forest: The tree. Differentiation and development of stands. Reproduction, growth, and yield of stands. Tolerance. Forest vegetational units and their classification. Origin and development of forest communities. Forest succession. Index.

Note: A comprehensive exposition of the principles behind sound silviculture. This edition has been revised and greatly expanded to include important developments in the field. New material has been added in the sections dealing with solar radiation, climate, and soil conditions. A special effort has been made to clarify the treatment of these subjects.

TOUMEY, JAMES WILLIAM, AND CLARENCE F. KORSTIAN

Seeding and planting in the practice of forestry; a manual for the guidance of forestry students, foresters, nurserymen, forest owners, and farmers, by the late James W. Toumey and Clarence F. Korstian. Third edition. New York: John Wiley & Sons, Inc., 1942. 520 p. illus. 23 cm. \$5.00. 5113

Contents: Introduction—historical and economic basis. Silvicultural and silvicultural basis for seeding and planting. Objects of silviculture and methods of reproduction. Choice of species in artificial regeneration. Principles which determine spacing. Principles which govern composition of stand. Formation of forests by seeding and planting. Natural versus artificial regeneration. Planting surveys and plans. Forest tree seed: collection, extraction and storage. Quality of forest tree seed and seed testing. Protection of seeding and planting sites. Preliminary treatment of seeding and planting sites. Establishing forests by direct seeding. Forest nursery: selection and development of site. Preparation

tion of nursery seed beds and seeding culture. Transplant culture and distribution of nursery stock. Nursery diseases and injuries. Forest planting. Appendix. Index.

Note: Included in the third edition is a discussion of the changes brought about by the activities of state and Federal government and other agencies engaged in planting forests and shelterbelts. Increased emphasis upon the production of nursery stock for planting on specific sites, and the more extensive planting programs, both governmental and private, have necessitated an expansion of the treatment of planting surveys and plans. Modern methods of direct seeding in artificial regeneration are given.

TRYON, HENRY HARRINGTON

The Black Rock Forest, with an introduction by R. T. Fisher. Cornwall-on-the-Hudson, N.Y.: The Black Rock Forest, 1930. 44 p. illus. 22 cm. (The Black Rock Forest. Bulletin no. 1) Paper, \$0.60. 5113a

Contents: Location. Physiography. History. Areas. Types. List of species. Volume. Utilization and markets. Forest protection. Management policy. Public use. The plan.

Note: The Black Rock Forest is a private property of 3,108 acres on the west bank of the Hudson river between West Point and Cornwall-on-the-Hudson, and is organized as a forest laboratory for research in problems of forest management and for the demonstration of successful methods in practice. This bulletin outlines the physiography of the region, the various types of growths, and the general plan of operation.

WESTVELD, RUTHFORD HENRY

Applied silviculture in the United States. New York: John Wiley and Sons, Inc., 1939. 567 p. illus. 23 cm. \$5.00. 5114

Contents: Northeast spruce-hardwood region. New England white pine region. Oak region. Allegheny hardwood-pine-hemlock region. Southern Appalachian region. Southern pine region. Southern bottomland hardwood region. Central hardwood region. Lake States region. Douglas fir region. Northern Rocky Mountain region. Lodgepole pine region. Southwest ponderosa pine region. California pine region. Northwest ponderosa pine region. Black Hills ponderosa pine region. Redwood region. Southeastern Alaska. Appendix. Index.

Note: Deals with the application of principles and practices directly to specific conditions found in the various important forest regions of the United States. Detailed information is given on the reproduction and growth requirements of the important trees of the United States. Timber production is the primary objective of the silvicultural measures recommended. A full treatment is given the fundamental principles of forest ecology and economics applicable to the regions covered.

WESTVELD, RUTHFORD HENRY, AND RALPH H. PECK

Forestry in farm management. New York: John Wiley and Sons, Inc., 1941. 339 p. illus. 23 cm. \$3.00. 5115

Contents: Farm forestry and agricultural economy. Trends in farm forestry. Growing forest-tree crops—economic basis. Growing forest-tree crops—biological basis: tree habits and requirements; the farm forest; how a forest reproduces; how a forest grows; forces that tend to destroy. How to improve and perpetuate existing farm forests; management of immature forests; management of mature forests; care in logging; treatment of slash; continuous yield. How to establish new farm forests: special considerations. Protecting farm forests, measuring volumes of farm-forest products. Measuring volumes and growth of farm forests: volume of trees and stands; measuring growth of forests. Making trees into the most valuable wood products. Marketing farm-forest products. Best use of wood on farms. Management of farm forests for special products: naval stores; maple sugar and syrup; Christmas trees; miscellaneous products. How farm forests may aid wildlife. Farm forest plans and records. Appendices. Index.

Note: Fundamental principles are stressed in this book to give a good background of knowledge of timber growing and utilization practices. All phases of farm forestry are covered, including wildlife management. Discussions are given of some of the more important uses of farm forests and their products. The appendixes offer basic data on the habits and requirements of important tree species in the United States, and on diseases and insects.

FOREST PRODUCTS

BELYEA, HAROLD CAHILL

Forest measurement. New York: John Wiley & Sons, Inc., 1931. 319 p. illus. 24 cm. \$3.50.

5116

Contents: Introduction to forest measurement. The instruments used in forest measurement. Units of volume. Log rules. Measurement of volume—scaling. The determination of volume in standing trees. The determination of volume in forests. The application of statistical methods. Graphs and curves. Alinement charts and anamorphic curves. Form and taper. Volume tables. The age of forests. The study of growth. The yields of forests. Bibliography. Appendix. Index.

Note: This book describes the measurement of forest products, of individual trees, and of forest areas from the practical as well as the theoretical standpoint. Included are the numerous "rules of thumb" which should be known to every timber cruiser, and the more technical refinements of mathematical formulae which only the forest engineer is capable of using. Special attention is paid to the measuring of growth and yield, the development of yield tables, and the application of statistical methods to forest mensuration and to the development of alinement and anamorphic charts.

BROWN, HARRY PHILIP, AND A. J. PANSHIN

Commercial timbers of the United States, their structure, identification, properties, and uses. New York: McGraw-Hill Book Company, Inc., 1940. 554 p. illus. 23 cm. (American forestry series; Walter Mulford, consulting editor) \$5.00.

5117

Contents: The plant origin of wood. The tree. The gross features of wood of value in identification. The woody plant cell. The cambia of trees. The minute structure of coniferous woods. The minute structure of porous woods. Miscellaneous information on wood.

Note: This volume, written for the use of both college student and practicing forester, is intended to replace the authors' *Identification of the commercial timbers of the United States*, New York, 1934. Although some of the original material has been retained, the book has been considerably enlarged with the inclusion of information on the structure, properties and uses of the woods mentioned. Two keys are provided for the identification of woods, one based on photographs of characters visible to the naked eye, the other on those visible only with the use of a microscope. A final chapter summarizes the general characteristics, properties and uses of each species. There is a glossary of terms and an index.

BROWN, NELSON COURTLANDT

Logging—principles and practices in the United States and Canada. New York: John Wiley & Sons, Inc., 1934. 284 p. illus. 23 cm. \$3.50.

5118

Contents: Part I, Forest utilization: General. Forest resources. Forest labor and housing. Felling and preparation of logs for transport. Selective logging. Part II, Regional logging practices: General. Summary of minor and major transportation methods. Pacific Coast region. Southeast region. General Rocky Mountain region. General Eastern forest region. Bibliography. Index.

Note: Suitable for use as a reference for foresters, timber operators, and lumbermen. This book affords an introduction to the principles and practices of logging. It deals with forest utilization through the felling and preparation of logs for transport. The major portion of the book is given over to discussions of logging practices in sixteen regions of the United States and Canada.

BROWN, NELSON COURTLANDT

Logging—transportation; the principles and methods of log transportation in the United States and Canada. New York: John Wiley & Sons, Inc., 1936. 327 p. illus. 23 cm. \$4.00.

5119

Contents: Introduction. Transportation. Part I, Minor transportation—log assemblage: Animal skidding. Tractors. Power logging—cable hauling systems. Combined minor and major transportation. Part II, Loading for transport: Landings. Loading. Part III, Major land transportation: Chutes. Wheeled vehicles—animal and tractor draft. Sleds. Motor vehicles. Forest railroads. Part IV, Major water transportation: General. Floating and driving. River, bay and lake rafts and booms. Ocean rafts. Flumes. Barges and steamers. Bibliography. Index.

Note: This book stresses essential features and fundamentals of operation in the field of log transportation, and gives examples of actual procedures now in use in the important logging centers of the United States and Canada. It offers a discussion of the principles followed in getting out logs at minimum cost, with considerable detail in treating changes mechanization has brought to the logging industry.

BROWN, NELSON COURTLANDT

Timber products and industries; the harvesting, conversion, and marketing of materials other than lumber, including the principal derivatives and extractives. New York: John Wiley & Sons, Inc., 1937. 316 p. illus. 23 cm. \$3.50.

5120

Contents (abridged): Part I, Introduction. Economics and general considerations. Part II, Construction materials. Part III, Chemically derived products. Part IV, Wood containers. Part V, Mechanically reduced products. Part VI, Wood as fuel. Part VII, Miscellaneous products. Index.

Note: An elementary and introductory description of the principal methods pursued in converting products from raw materials as found in standing timber to useful commodities. Emphasis is placed upon those products which provide means of converting wood formerly wasted into some useful forms. The content includes chapters on technical properties in relation to uses, developments in reducing waste, factors determining the most profitable form of product, development of stable community life through permanent and diversified industries.

BRUCE, DONALD, AND FRANCIS X. SCHUMACHER

Forest mensuration. Second edition. New York: McGraw-Hill Book Company, Inc., 1942. 425 p. illus. 23 cm. (American forestry series; Walter Mulford, consulting editor) \$4.00.

5121

Contents (abridged): Direct measurement. Direct estimate by sampling. Indirect estimate based on one or more independent variables. Prediction of growth and yield.

Note: A textbook of forest mensuration, stressing the principles on which the subject is based and the applications to timber problems through new techniques. Numerous illustrative examples are given to emphasize the treatment. The conventional arrangement of scaling, estimating and growth study is superseded by an arrangement based on classification of the technique required, rather than of the subject to be studied.

BRYANT, RALPH CLEMENT

Lumber, its manufacture and distribution. Second edition. New York: John Wiley & Sons, Inc., 1938. 535 p. illus. 23 cm. \$5.00.

5122

Contents: Introduction. Part I, The manufacturing plant: Character and arrangement. Log storage. Sawmill equipment. Saws. Lumber handling and transfer equipment and methods. The sawmill power plant. Part II, Lumber manufacture: Labor. Sawing, edging, and trimming. Seasoning lumber. The remanufacture of lumber. Products of the lumber industry. Mill refuse and its disposal. Fire prevention and insurance. Part III, Lumber markets and marketing: Lumber trade associations. Lumber grades and inspection. Transportation. Domestic markets. Foreign markets. Import trade—lumber tariff. Appendix. Index.

Note: For the lumberman, forester, and forest ranger. The book covers recent developments in lumber manufacturing equipment and technique and the progress made in the utilization of sawmill waste. It surveys also the recent trends in the lumber trade association movement, lumber grading and the standardization program, the lumber code, foreign and domestic trade and tariff legislation, and the labor problems of the industry. The text is amplified with statistical tables, many sketches and diagrams, and photographs of operations and machines.

CHAPMAN, HERMAN HAUPT, AND DWIGHT B. DEMERITT

Elements of forest mensuration. Albany, N.Y.: J. B. Lyon Company, 1932. 452 p. illus. 24 cm. \$3.50. 5123

Contents (abridged): The field of forest mensuration. Cord or stacked measure. Cubic volume of logs. The cubic volume of standing trees. The cubic volume of felled trees. Timber estimating for cubic and cord measure. The boundary survey and determination of total area. Construction of log rules. Timber estimating for board feet by use of volume tables. The growth of trees and of stands. The construction of normal yield tables. The periodic or current growth of trees and stands. Bibliography. Appendix.

Note: A thorough treatment of the subject. Rather than a handbook, it is a combination of scientific discussion with practical methods. It is intended for use in schools of forestry, and by foresters, lumbermen, and others concerned with the measurement of timber. The authors have treated the subject from the economic viewpoint, because they have learned that this method enables students and others to grasp the subject more quickly.

HALL, J. ALFRED, AND T. J. MOSLEY

Products of American forests. Washington, D.C.: Government Printing Office, 1939. 48 p. illus. 26 cm. Paper, \$0.20. 5123a

Contents: Importance of forest resources. Utilization of products is essential. Wood and some of its primary uses: House construction. Veneer and plywood. Furniture. New developments in timbered construction. Railway uses. Poles, posts, piling, and mine timbers. Wood as fuel. Products of wood conversion: Pulp and paper. Rayon and related products. Lignin products. Wood-floor products. Sugar and ethyl alcohol. Products of cellulose fermentation. Products of hardwood distillation. Seasonal crops and extractive materials: Naval stores. Other resins. Maple syrup. Honey. Tannins. Dyestuffs. Nuts. Pharmaceuticals. Volatile or essential oils. Christmas greens and greenery. Fruits. Miscellaneous. Relative value of forest crops.

Note: This is a brief and generalized survey of the important products of America's forests, prepared by the Forest Products Laboratory of the United States Forest Service.

HENDERSON, HIRAM LEROY

The air seasoning and kiln drying of wood. Albany, N.Y.: J. B. Lyon Company, 1936. 332 p. illus. (part col.) 23 cm. \$3.50. 5123b

Contents: Reasons for air drying of wood. How wood dries. Factors influencing seasoning. Yard seasoning. Staining of lumber. Necessities for kiln drying wood. Defects in wood resulting from air seasoning and kiln drying. Measuring condition of lumber. Piling lumber for kiln drying. The drying process. Dry kiln practices. Drying schedules. Kiln drying veneers and plywood. Types of kilns. Layouts and arrangement of lumber dry kilns. Dry kiln doors. Dry kiln building construction. Kiln records. Index.

Note: An illustrated manual and guide for the sawmill operator, the wood worker, and the lumber merchant outlining the methods by which wood drying can be accomplished in the most efficient manner. Since the drying problem of the sawmill is generally different from that of the wood-working factory, the subject has been segregated into two main divisions although there are many factors common to both, and air drying is covered in the early chapters while kiln drying occupies the latter part

of the work. Considerable space is devoted to the proper methods of piling lumbers to ensure adequate drying and freedom from warping, checking, splitting, or fungus growth. Two hundred and two photographs and drawings and 33 tables of data are included.

MATHEWSON, JAMES STANLEY

The air seasoning of wood. Washington, D.C.: Government Printing Office, 1930. 56 p. illus. (part col.) 23 cm. (United States. Department of Agriculture. Technical bulletin no. 174) \$0.35. 5124

Contents: Introduction. Moisture in wood. General principles of drying wood. Application to air seasoning of the general principles of drying wood. Seasoning defects and their causes. Commercial methods of piling boards, planks, and other shapes of wood for air seasoning. Drying rates and final moisture content. Special treatments. Storage of dry lumber. Additional details. Literature cited.

Note: This bulletin reports the results of investigations concerned with air seasoning of wood carried on over a period of years at the Forest Products Laboratory at Madison, Wisconsin. The purpose of the bulletin is three-fold: to present the general principles involved in the drying of wood, to show their application to air seasoning, and to offer suggestions for better air-seasoning practice. There are 22 plates containing photographs of various methods of storage of lumber for seasoning.

RECORD, SAMUEL JAMES

Identification of the timbers of temperate North America, including anatomy and certain physical properties of wood. New York: John Wiley & Sons, Inc., 1934. 196 p. illus. 23 cm. \$3.00. 5124a

Contents: Part I, Anatomy and certain physical properties of wood: Classification of trees. Principal parts of a tree. Primary tissues. Origin and development of secondary tissues. Secondary thickening of the cell wall. Pits. Tracheids and wood fibers. Vessels. Wood parenchyma. Rays. Tyloses and tylosoids. Inter cellular canals and cavities. Storied structure. Growth rings. Sapwood and heartwood. Texture, grain and figure. Color and luster. Scent and taste. Density and specific gravity. Woods of anomalous structure. Part II, Timbers of temperate North America: Descriptive key to the woods. Notes and references pertaining to the trees and their utilization. Index.

Note: A presentation of the pertinent facts concerning the anatomy of trees of temperate climates, and particularly the commercial timber of North America. As in the author's previous work, *Identification of the economic woods of the United States*, New York: John Wiley & Sons, Inc., revised edition, 1918, which this work replaces, this volume is in two parts. Part I deals with the whole field of wood anatomy in respect of woods of both temperate and tropical climates, while Part II affords means of identifying the commercial timbers of the United States and Canada. This is the first book to adopt the terminology proposed by the International Association of Wood Anatomists.

RECORD, SAMUEL JAMES, AND ROBERT W. HESS

Timbers of the New World. New Haven: Yale University Press, 1943. 640 p. illus. 27 cm. \$10.00. 5125

Contents (abridged): Gymnosperms. Angiosperms. Explanation of wood descriptions. Lists of families classified with reference to special properties and uses of their bark, leaves, and timber. Sources of information and material. Bibliography. Explanation of the photomicrographs. Index.

Note: An encyclopedia covering the trees and larger shrubs of the entire western hemisphere, exclusive of the Pacific islands. The bulk of the treatise concerns Latin America. The book describes the trees and their woods; supplies the vernacular, trade and scientific names, and indicates their present and potential economic value in classified lists which suggest substitute woods and possible sources of rubber, resins, oil tannins, dyestuffs, drugs, and fibers.

SCHEFFER, THEODORE COMSTOCK, AND RALPH M. LINDGREN

Stains of sapwood and sapwood products and their control. Washington, D.C.: Government

Printing Office, 1940. 124 p. illus. 23 cm.
(United States. Department of Agriculture.
Technical bulletin no. 714) \$0.20. 5126

Contents: Introduction. Economic aspects. Stains resulting from chemical changes in the wood. Stains caused by fungi. Difference between sap stain and decay. Seasonal and regional distribution of sap stain. Factors influencing development of sap stain. Manner of spread of sap-stain fungi. Wood properties affected by sap stain. Commercial aspects of stain control in the South. History of chemical stain-control experiments in the United States. Recent experiments on chemical control of sap stain and mold in lumber. Choice of chemical treatment. Practices and precautions essential to successful use of chemical treatments. Use of chemical treatments at small mills. Cost of dipping lumber. Control of sap stain in export stock. Control of sap stain in stored logs. Effect of stain control on the distribution of stain, number of stained boards, and average amount of stain sustained by individual boards in the seasoning pile. Present trends in commercial use of chemical treatments for stain control. Summary. Literature cited. Appendix: Summary of field and laboratory experiments by other investigators on chemical control of sap stain and mold in lumber and other wood products (United States). Chemicals which, at concentrations used in small-scale lumber tests, were ineffective in controlling stain in both pine and red gum sapwood.

Note: This bulletin summarizes the work done in the United States within recent years on the control of sapwood stains. The problems of the Southern States receive particular attention.

TRYON, HENRY HARRINGTON

A portable charcoal kiln, with a foreword by Austin Cary. Cornwall-on-the-Hudson, N.Y.: The Black Rock Forest, 1933. 34 p. illus. 22 cm. (The Black Rock Forest. Bulletin no. 4) Paper, \$0.60. 5126a

Contents: Local history of charcoal manufacture. The Black Rock Forest portable kiln. The product. Analysis of results. Patents and royalties.

Note: A description, with detail drawings and photographs, of the design, construction, and operation of the charcoal kiln designed by the author. The kiln yields an average of 32.7 bushels of charcoal per cord of wood, using low-grade cuttings or light thinnings.

UNITED STATES. DEPARTMENT OF AGRICULTURE

A naval stores handbook dealing with the production of pine gum or oleoresin. Compiled by the Forest Service, the Bureau of Entomology and Plant Quarantine, and the Bureau of Plant Industry. Washington, D.C.: Government Printing Office, 1935. 201 p. illus. 22 cm. (United States. Department of Agriculture. Miscellaneous publication no. 209) Paper, \$0.20. 5127

Contents: Introduction. Purpose. Pines in the United States that yield naval stores in commercial quantities. Oleoresin and its occurrence in the tree. Methods of obtaining gum. Variables which influence yield. Forest management for slash and longleaf pine lands. Fire, grazing, insects, fungi, and other factors affecting forest production. Naval stores production in other countries: France. India. All other countries. Literature cited. Index.

Note: This handbook aims to give in encyclopedic form, for ready reference, an illustrated summary of information on where and how pine gum, or oleoresin, is obtained from living trees, with suggestions for improving methods of production. The information given is intended to help increase returns from the forests, reduce forest wastes, and improve products from the second-growth longleaf and slash pines in the southeastern states. Literature cited runs to 581 items.

FIREARMS

CHAPEL, CHARLES EDWARD

Gun care and repair, a manual of gunsmithing. New York: Coward-McCann, Inc., 1943. 454 p. illus. 21 cm. \$3.75. 5128

Contents: Shop and bench. Measuring tools. General tools and equipment. Power tools. Drawings and blueprints. Woods for gunstocks. Stock design. Checkering and carving stocks. Stock finishing. Stock repairs and alterations. Inletting the action and bedding the barrel. Etching and engraving. Cleaning guns and removing obstructions. Temperatures. Bluing and browning. Soldering and brazing. Hand forging. Welding. Metallurgy. Heat treatment of steel. Surface hardening. Drilling, reaming, and chambering the barrel. Rifling. Striking and polishing barrels and parts. Barrel removing and changing. Head space. Sights. Trigger-pull adjustments. The Springfield rifle. Remodeling military rifles. The Garand rifle. Thompson submachine gun, caliber .45, model 1928 A-1. Automatic pistol, caliber .45 M 1911 and M 1911 A-1. The revolver. Pistol and revolver problems. Field kits. Restoring antique firearms. General safety precautions. How to get a gunsmithing job. Index.

Note: A comprehensive work primarily for advanced amateurs. It runs the complete gamut from shop, bench, and tools, through drawing, finishing, detailed operations (such as inletting, bluing, etc.), and metallurgy, to adjustments, remodeling military rifles, and restoring antique firearms. Plates clearly illustrate all operations and processes.

CHINN, GEORGE MORGAN, JR., AND BAYLESS EVANS HARDIN

Encyclopedia of American hand arms, a book of fact about American short arms, detailing their birth and development, and describing in minute detail models from the early eighteenth century through to the present time. Huntington, W. Va.: Standard Printing and Publishing Company, 1942. 349 p. illus. 27 cm. \$8.00. 5128a

Contents: Introduction. Nomenclature of gun parts. Illustrations and description. A list of gun makers. Identification of odd hand arms. List of patents.

Note: Hand arms are listed with place and date of manufacture, complete descriptions, and illustrations for each. The list of American and foreign hand-arms manufacturers is not limited to those whose products illustrate the encyclopedia. The list of patents is arranged by manufacturer.

GUNTHER, JACK DISBROW, AND CHARLES O. GUNTHER

The identification of firearms from ammunition fired therein, with an analysis of legal authorities. New York: John Wiley & Sons, Inc., 1935. 342 p. illus. 23 cm. \$4.00. 5129

Contents: Table of cases. Introduction. The principles of firearms identification from ammunition fired therein. The Sacco-Vanzetti case: The vital importance of the evidence on firearms identification; analysis of the firearms exhibits; expert testimony at the trial; the summary of counsel and Judge Thayer's charge to the jury; motions for new trial. Analysis of the authorities on firearms identification. Bibliography. Index.

Note: This book opens with a statement of the types of problem which may be answered by a scientific identification of firearms. From this it progresses to a description of the various means used in identification, together with a description and definition of the parts of firearms and the composition and construction of suitable ammunition. The discussion is logical, sound

and thoroughly illustrated, not only by innumerable photomicrographs and halftones, but by excerpts from records of cases in which expert testimony on firearms was called.

HAGIE, CLARENCE EDWIN

The American rifle for hunting and target shooting. New York: The Macmillan Company, 1944. 174 p. illus. 21 cm. \$1.95. 5130

Contents: Foreword. Elementary ballistic terminology. Evolution of the modern rifle. Single shot rifles of today. Modern hand-operated repeating rifles. The modern automatic rifle. Rifles not using powder for propulsion. The evolution of modern rifle ammunition. Modern rim-fire cartridges. Center-fire cartridges for small game. American big-game rifle cartridges. Bullet design in relation to killing power. The effect of impact upon bullets. Factors affecting accuracy in sporting rifles. Some advice on rifle handling in the field. Big-game shooting and its problems. Care of game in the field. The combination rifle in America. Target rifles and target ammunition. Target shooting—indoors and out. Positions in shooting. Snap and wing shooting at small game. Rifle sights. Index.

Note: Designed for returning soldiers who plan to use a rifle or civilians in the field or on the range, and for men who want additional information on American rifles and cartridges for hunting purposes and for target work. The book is a guide to the selection and use of rifles and ammunition for particular purposes. Illustrations are used to show positions in firing and care of the weapon.

HAVEN, CHARLES TOWER

A comprehensive small arms manual for state guards, regular police departments, auxiliary police departments, coast guard auxiliaries, plant guards and civilians. New York: W. Morrow & Co., 1943. 159 p. illus. 19 cm. \$1.50. 5131

Contents (abridged): Problems and possibilities. General instructions. Military type rifles. Sporting rifles. Shotguns. Submachine guns. Pistols and revolvers. Ammunition. Knives and rough and tumble. General firearms tactics. Bibliography.

Note: For those who have occasion to use a variety of older arms, some of which are outdated for regular army use. Discusses operation, care and limitations of these arms, ammunition and its problem of supply, safety factors. Includes ballistics tables.

HOWE, JAMES VIRGIL

The amateur guncraftsman; a practical handbook for those who like guns. New York: Funk & Wagnalls Company, 1938. 301 p. illus. 23 cm. \$4.00. 5132

Contents: The initial trial. Choosing a location. The necessary tools. Getting acquainted with the tools. Instruments, aims, and methods. Necessary home-made appointments. Woods for the craftsman. Selecting the gunstock design. The inletting of actions. The exterior form. The final finish. Lines and diamonds. Wood engraving. Simplified bluing methods. Selecting arms for remodeling. Gun-barrel alterations. The A B C of shotgun facts. Practical trigger details. What to do with handguns. Attaching sights and telescopes. Metal decoration. Elementary metallurgy. Hints of value. Directory. Index.

Note: Offered for the use of the amateur who likes to work with guns, and intended largely for the beginner in the hobby of guncraftsmanship who has a small home workshop. The practical rules and essential facts of the craft are put into colloquial language, and the details of designing and making barrels, stocks, trigger actions, and other mechanical parts are outlined in practical step-by-step method. Illustrated with line drawings.

JOHNSON, MELVIN MAYNARD, AND CHARLES T. HAVEN

Ammunition; its history, development and use, 1600 to 1943—.22 BB cap to 20 mm. shell. New York: William Morrow and Company, 1943. 374 p. illus. 24 cm. \$5.00. 5133

Contents: General definitions and terminology. Cartridge development—1600 to the beginning of smokeless powder. European military rifle cartridges—1886 to 1943. United States military rifle and carbine cartridges—1886 to 1943. Smokeless powder sporting-rifle cartridges. Pistol and revolver cartridges. Shotgun cartridges or shells. .50 caliber, 20 mm., 37 mm., and 40 mm. A.A. and A.T. ammunition. Functioning—general characteristics. General defects on small-arms ammunition. Stoppages. Beyond the muzzle. Accuracy. Fire power. Combat notes. Current trends and future developments. Ballistics charts. Index.

Note: Traces the development of ammunition, both sporting and military, from the beginning of the paper musket cartridge to the present day. Covers both early and modern pistol or revolver cartridges and the foreign as well as American sporting and military cartridges. Includes a discussion of the larger type of fixed ammunition—the .50 caliber, 20 mm., 37 mm., 40 mm. shells and cartridges now being used in aircraft, anti-aircraft and anti-tank cannon. Discusses the functioning of ammunition and its stoppages in the field, ballistics, sights, etc. Numerical tables of data and ballistic charts are included. For the army instructor as well as the layman.

ROBERTS, NED HENRY

The muzzle-loading cap lock rifle. Second edition, revised and enlarged. Illustrated with photographs and drawings by the author and others. Manchester, N.H.: The Author, 1944. 530 p. illus. 23 cm. \$6.00. 5133a

Contents: General construction of the rifle. Iron sights and telescopic sights. Accessories and equipment. Ammunition for the muzzle-loading rifles. Loading, cleaning and care of the rifle. The target rifle and target shooting. The hunting rifle. Tools used by the old-time rifle makers. Some noted makers of muzzle-loading rifles and their rifles. The mountain riflemen. Miscellaneous hints and suggestions. Partial list of old-time makers of muzzle-loading cap lock rifles. Making a muzzle-loading rifle. Niedner muzzle-loading rifles and Niedner system of patching bullets. Sketches of famous early riflemen. The beef shoot at Jintown. Miscellaneous addenda.

Note: A collection of the most important facts, useful hints and suggestions, and illustrations of rare arms and accessories relating to the muzzle-loading cap lock rifle, including a history of its development in America, a résumé of the scores of several rifle matches in which this type of rifle figured, and an account of the outstanding marksmen and riflemen of the past. There are numerous photographs of rifles and accessories.

ROBINSON, CLARK SHOVE

The thermodynamics of firearms. New York: McGraw-Hill Book Company, Inc., 1943. 175 p. illus. 23 cm. \$2.50. 5134

Contents: Introduction. Basic thermodynamic principles. Basic mechanics. Basic stoichiometry. Basic physical chemistry. Heat of explosion. Heat capacity of powder gases. Calculation of explosion temperature and pressure. Ignition of propellant powders. Rate of explosion. Loading density. Surface factor. Propellant-powder composition. Recoil. Rotation of projectile. Friction. Flash and smoke. Stability of propellants. Measurement of pressure. Measurement of temperature. Closed-chamber experiments. Graphical study of experimental firings. Calculation of interior-ballistic curves. Rockets.

Note: The author covers the behavior of propellant explosives in firearms in an elementary manner intended for the beginner rather than the expert.

SHARPE, PHILIP BURDETTE

Complete guide to handloading. A treatise on handloading for pleasure, economy, and utility.

New edition. New York: Funk and Wagnalls Company, 1944. 557 p. illus. 26 cm. \$7.50. 5134a

Contents: Introduction. Part one: Problems of the hand-loader. Equipment, fixtures, supplies. The cartridge case—its development and manufacture. Case inspection and preparation. Alteration and adaptation of special cases. Primers—development and manufacture. The non-corrosive primer. Casting bullets. Bullet sizing and lubricating. Lead, gas—check, hollow-base, hollow-point, and patched bullets. Metal-case bullets—target and hunting. Seating of bullets. Powder—its history and types. The manufacture and use of black and semi-smokeless powders. History of smokeless powder. Smokeless powder development in the United States. Manufacture and use of bulk, single-base, and double-base powders. Smokeless powders for the handloader. Storage, transportation, and handling of powder. Powder balances and scales. Powder measures and their use. Commercial loading tools and their use. Dies and gauges. The headspace problem in handloading. The pressure problem. Reduced mid-range and target loads—reason and importance. Obsolete black powder and foreign cartridges. Fouling and its cleaning problem. Handgun ammunition. Magnum handgun and rifle possibilities. Shot loads for revolvers. Quantity production for police and clubs. Testing bullets. Practical handloading computations with the slide rule. Records—value and method of keeping. Making muzzle loaders perform. Part two: Rifle loading data. Handgun loading tables. Part three: Appendix. Index. Part four: Supplement.

Note: This comprehensive volume is a practical guide to handloading, covering all aspects of the subject, including ballistics, fouling, velocity, pressure, and safety. The author discusses every model of rifle and revolver, every kind of powder, every shape of bullet and bullet mould, and every handloading tool on the market. Tables record the actual performance of all the various powders and bullets, with the velocities and pressures developed and the danger point in size of load. The appendix lists firms dealing in powders, diameters and energies of bullets, and other information in tabular form. The new edition has been enlarged by a 72-page supplement.

SHARPE, PHILIP BURDETTE

The rifle in America. Introduction by Julian S. Hatcher. New York: W. Morrow and Company, 1938. 641 p. illus. 27 cm. \$10.00. 5135

Contents: Rifle history. The early Springfields. The percussion rifle. The development of the cartridge. The early American cartridge rifle. The birth and development of the modern rifle. The small game rifle. Metallic sights. Telescope sights, target and hunting. Colt and his rifles. The Sharps rifle. Winchester—its growth and development. The Winchester rifle. Remington and UMC—growth and development. The Remington rifle. The Savage rifle. The story of Stevens and Pope. The Stevens rifle. The Ballard rifle. The Marlin rifle. The Iver Johnson rifle. The Newton rifle. The Mossberg rifle. Choosing your gun and ammunition. Home gunsmithing. The custom gun. The military rifles of the World War. The care of your rifle. What's the range? The National Rifle Association and target shooting. The future American rifle. Appendix: American cartridges of today. Ballistic specifications for centerfire rifle cartridges. Barrel dimensions. Reference addresses. Index. Index of illustrations.

Note: A reference text on the development of rifle manufacture. Beginning with a general history, the author's aim is to cover every type of rifle manufacture in America, going into detail about metallic sights, target sights, hunting sights, telescopic sights, and other rifle equipment. A book for collectors as well as for sportsmen.

SMITH, WINSTON OLIVER

The Sharps rifle, its history, development and operation. New York: W. Morrow & Company, 1943. 138 p. illus. 24 cm. \$3.00. 5136

Contents: The Sharps rifle. The Sharps in service. The manufacturers of the Sharps. Development of the Sharps rifle. Identification of models. Sharps ammunition and its manufacture. Operation and maintenance. Appendixes: Chronological outline, Henry S. Rowan vs. Sharps Rifle Manufacturing Company. Christian Sharps' residence and business addresses. Officials of the Sharps Rifle Manufacturing Company. Directors of the Sharps Rifle Manufacturing Company. Serial numbers of carbines in shipment stolen by Border ruffians. Materials used in the percussion Sharps rifles and carbines. List of patents. List of private firms and foreign governments. Bibliography. Index.

Note: The Sharps rifle was the first successful breech-loading rifle. It was an important weapon in the Civil War in the United States.

MILITARY SCIENCE

General

APPLEGATE, REX

Kill or get killed. Harrisburg, Pa.: Military Service Publishing Company, 1943. 175 p. illus. 21 cm. \$2.00. 5137

Contents: Unarmed offense. Disarming. Attack with miscellaneous weapons. Strangulations. The fighting knife. Hand gun offense. Practical ranges. Practical indoor combat course. Jap close combat tactics.

Note: A compilation of close combat methods and techniques as taught in the United States Army. It is applicable in part to all law enforcement agencies, civilian defense organizations, and police units. It includes instruction in unarmed combat, knife fighting, and fighting with unconventional weapons, with indoctrination in the offensive as the basic idea in effective combat methods throughout.

BOND, PAUL STANLEY

Basic infantry training. With illustrations and questions. Fourth edition. Washington, D.C.: P. S. Bond Publishing Co., 1942. 324 p. illus. 24 cm. Paper, \$1.50; cloth, \$2.00. 5138

Contents: The military policy of the United States. Infantry drill regulations. Addenda. Physical training. Rifle training. Military sanitation and first aid. Military discipline, courtesies and customs of the service. Interior guard duty. Military organization. Map reading. Characteristics of infantry weapons. Scouting and patrolling. Tactics, rifle and automatic rifle squads and rifle platoon. Automatic rifle. Bayonet training. Revised tables of infantry organization (1942).

Note: This is not an official United States Army publication, although the material is based very largely upon the various *Field manuals* and *Training manuals* issued by the War Department for official use. Each of the topics listed above is described in considerable detail and illustrated with pictorial drawings and diagrams. Questions for home study are included in each section. The work is intended as a reference work for the infantry soldier, the instructor, and the infantry officer. The text of the first ten sections as listed in the table of contents has been published also under the title *Infantry drill and elementary training*, U.S. Army, Washington, D.C., 1942. The same publisher has issued a number of other titles by this author in the field of military science. Most of them are based on U.S. Army publications and otherwise follow the general pattern of the book described above. Some, but not all of them, are described in this work.

BOND, PAUL STANLEY

Military science and tactics; a manual for the Reserve Officers' Training Corps. Washington, D.C.: P. S. Bond Publishing Co., 1941. 278 p. illus. 24 cm. \$1.00. 5138a

Contents: The national defense. Infantry drill regulations. Physical training. Rifle training, U.S. rifles M 1903 and M 1. Military sanitation and first aid. Military discipline, courtesies and customs of the service. Interior guard duty. Military organization. Map reading. Characteristics of infantry weapons. Scouting and patrolling. Tactics. Rifle and automatic rifle squads and rifle platoon.

Note: The introductory chapter outlines briefly the necessity for maintaining an army, and explains the place of the R.O.T.C. in the United States military training program. Each of the remaining chapters constitutes an extract from a War Department field manual and treats a particular phase of infantry training. There are numerous line drawings and diagrams, and review questions are included with each chapter.

BUNKLEY, JOEL WILLIAM

Military and naval recognition book; a handbook on the organization, uniforms and insignia of rank of the world's armed forces; etiquette and customs of the American services; complete description and colored plates of U.S. decorations, medals and ribbons. Fourth edition. New York: D. Van Nostrand Company, Inc., 1943. 444 p. illus. (part col.) 17 cm. \$2.50. 5139

Contents: The organization of the War Department. The Arms and the Services of the United States Army. Composition and organization of the United States Army, past and present. Rank and precedence in the United States Army. United States Army uniforms and flags. Military etiquette and courtesy. Military customs. Composition of the United States Navy. Organization of the United States Navy ashore. United States naval districts. The organization of the United States Navy afloat. Navy ships. Naval Air Force. The organization of a ship and duties of naval officers and men aboard ship. Rank and precedence in the United States Navy. United States Navy uniforms. United States naval etiquette and customs. United States Marine Corps. United States Coast Guard. United States Merchant Marine. United States Coast and Geodetic Survey. United States Public Health Service. Combat aircraft markings of various nations. United States decorations, citations, medals and ribbons. Foreign decorations and medals. Foreign insignia and uniforms.

Note: This book shows in full-color illustrations, the uniforms, insignia of rank, medals and decorations worn by members of the armed forces in all the countries in the world. It includes insignia of members of their army, navy, air forces. There are descriptions of the organization, composition, and functions of all these services, the duties and functions of their personnel, and their rank, precedence, etiquette and customs. The fourth edition has been revised to include recent changes.

BURR, JOHN GREEN

The framework of battle. Philadelphia: J. B. Lippincott Company, 1943. 254 p. illus. 21 cm. \$3.00. 5140

Contents: Foreword. Part I, The foundation of the framework: Military language. The foundation of strategy. Part II, The framework: Strike first and unexpectedly. Strike hard and swiftly. Too many cooks. Teams, not individuals. Part III, The application of the framework: Generals are human beings. Knowledge precedes action. The general plans a campaign. Part IV, The framework in use: This war. The general's school books. Index.

Note: A book for the civilian on military strategy and tactics intended to permit the general reader to obtain the necessary background for an intelligent following of the military campaigns of World War II. Written by a retired lieutenant colonel of the United States Army. Illustrated with 52 battle charts. The last chapter is a brief bibliographical guide to the subject.

CAVALRY JOURNAL

Modern reconnaissance; a collection of articles from the Cavalry journal. Harrisburg, Pa.: The Military Service Publishing Co., 1944. 230 p. illus. 19 cm. \$1.50. 5140a

Contents: Introduction. Reconnaissance. Principles and modern methods of reconnaissance. German reconnaissance. Armored reconnaissance. Vehicular reconnaissance. The Division reconnaissance—troop and squadron. G-2 and reconnaissance troop training in new divisions. Training the brigade reconnaissance platoon. The reconnaissance squadron in the motorized division. The reconnaissance squadron, armored division. Combat intel-

ligence for armored units. Communications notes. Reconnaissance with an armored division. Battle lessons on reconnaissance. Reconnaissance lessons from Tunisia. Patrols and OP's of the 81st. Reconnaissance battalion in Tunisia. Mechanics of battlefield reconnaissance. 91st Reconnaissance Squadron in Tunisia (a brief day-by-day account). 91st Reconnaissance Squadron in Tunisia (a detailed study). A desert reconnaissance. A provisional reconnaissance unit. Action of a patrol when fired upon. A Russian illustration of the value of reconnaissance. A Soviet reconnaissance platoon in action. Red cavalry reconnaissance behind enemy lines. Reconnaissance in street fighting. Reconnaissance lessons from Stalingrad. Japanese reconnaissance for night assault. Jungle reconnaissance. The air-cavalry team in reconnaissance. Air-tank-cavalry in active reconnaissance.

Note: A collection of articles written by various authors. Some are detailed accounts of actions between small units, some are theoretical discussions of the importance of obtaining information about the enemy, and some are concerned with training.

DOLLARD, JOHN

Fear in battle. With the assistance of Donald Horton. Washington, D.C.: The Infantry Journal, 1944. 64 p. illus. 18 cm. (Fighting forces series) \$0.25. 5140b

Contents: Some facts about fear. Changes in fear. Techniques of fear control. Fear and morale. Facts about the report.

Note: A brief analysis and discussion of replies made by 300 veterans of the Abraham Lincoln Brigade to questionnaires provided in a well controlled research study. Charts are used to indicate on a percentage basis the differing replies to each question.

EARLE, EDWARD MEAD, EDITOR

Makers of modern strategy; military thought from Machiavelli to Hitler. Edited by Edward Mead Earle with the collaboration of Gordon A. Craig and Felix Gilbert. Princeton: Princeton University Press, 1943. 553 p. illus. 24 cm. \$3.75. 5140c

Contents (abridged): Introduction, by Edward Mead Earle. Section I, The origins of modern war—from the sixteenth to the eighteenth century. Machiavelli—the renaissance of the art of war, by Felix Gilbert. Vauban—the impact of science on war, by Henry Guerlac. Frederick the Great, Guibert, Bülow—from dynastic to national war, by R. R. Palmer. Section II, The classics of the nineteenth century—interpreters of Napoleon: Jomini, by Crane Brinton, Gordon A. Craig, and Felix Gilbert. Clausewitz, by H. Rothfels. Section III, From the nineteenth century to the first World War: Adam Smith, Alexander Hamilton, Friedrich List—the economic foundations of military power, by Edward Mead Earle, Engels and Marx—military concepts of the social revolutionaries, by Sigmund Neumann. Moltke and Schlieffen—the Prussian-German school, by Hajo Holborn. Du Picq and Foch—the French school, by Stefan T. Possony and Étienne Mantoux. Bugeaud, Gallieni, Lyautey—the development of French colonial warfare, by Jean Gottmann. Delbrück—the military historian, by Gordon A. Craig. Section IV, From the first to the second World War: Churchill, Lloyd George, Clemenceau—the emergence of the civilian, by Harvey A. DeWeerd. Ludendorff—the German concept of total war, by Hans Speier. Lenin, Trotsky, Stalin—Soviet concepts of war, by Edward Mead Earle. Maginot and Liddell Hart—the doctrine of defense, by Irving M. Gibson. Haushofer—the geopoliticians, by Derwent Whitlesey. Section V, Sea and air war: Mahan, evangelist of sea power, by Margaret Tuttle Sprout. Continental doctrines of sea power, by Theodore Ropp. Japanese naval strategy, by Alexander Kiralfy. Douhet, Mitchell, Seversky—theories of air warfare, by Edward Warner. Epilogue: Hitler, the Nazi concept of war, by Edward Mead Earle. Who's who of contributors. Editor's note and acknowledgments. Bibliographical notes. Index.

Note: This volume was prepared from discussions in the seminar in military affairs of the Institute for Advanced Study at Princeton University. It deals with war in general, philosophy of war, preparation for war, and the waging of war from a national viewpoint, rather than with military tactics. It is addressed primarily to general readers.

GARBER, MAX BRUCE, AND P. S. BOND

A modern military dictionary. Ten thousand technical and slang terms of military usage. Second edition. Washington, D.C.: P. S. Bond Publishing Co., 1942. 272 p. 22 cm. \$2.00. 5141

Note: While emphasis is placed on current military terms in use in 1942, there have been included also some obsolescent terms and a few important terms from other languages. The definitions are intended to be easily understandable by the layman and numerous cross-references have been intentionally omitted. A small number of condensed technical and historical articles have been included as well as terms relating to ballistics, aviation, surveying, and other fields associated with the military profession. There are a limited number of changes in the main text of the second edition, and a five-page addenda of Army slang has been included. The absence of illustrations of any kind is a noticeable limitation. There are certain omissions such as *LST*, *LCI*, *flak*, *bazooka*, *intercom*, *half-track*, and *ATC*.

MARSHALL, SAMUEL LYMAN ATWOOD

Blitzkrieg; its history, strategy, economics, and the challenge to America. New York: William Morrow and Co., 1940. 188 p. illus. 21 cm. \$2.00. 5141a

Contents: Warfare turns a corner. Star-shells over Norway. Blitzkrieg is a bargain. Twilight of the battleship. Victor's delusions. The forgotten tank. Hell's symphony: grand tactics. Some notes on minor tactics. Blitzkrieg's politics. Hitler can't stop now. Blitzkrieg over America. Index.

Note: A survey of the technique of "lightning war" as exemplified by the Germans in the early years of World War II, written in the apprehensive days of 1940 before the Allied armies had effected certain basic improvements upon the Wehrmacht system.

MEIER, NORMAN CHARLES

Military psychology. Foreword by Lieutenant General Ben Lear. New York: Harper & Brothers, 1943. 395 p. illus. 21 cm. \$3.00. 5142

Contents: Why men fight: group conflict. Psychological aspects of warfare. Psychological preparation for combat: morale. Adaptation of skills to military needs. Learning military skills. Leadership and coordination. Leadership in combat situations. Adjustment to combat conditions and stress. Appendixes: Suggestions for handling interviews. Requirements for miscellaneous services. A rating scale for candidates for officer training schools. Proposed additional methods for selection of combat officers. Glossary. Index.

Note: A presentation in simple, non-technical language of some of the common ground on which military affairs and psychology meet, such as the selection of specialized personnel, the learning of military skills, the processes concerned in recognition and deception in field operations, the traits and qualities expected in the military leader, and problems of adjustment of men to the stresses of actual combat. The first part of the volume is concerned with general principles and practices, and the second part with applications and problems, including many valuable case histories. It was prepared under the editorship of Gardner Murphy. There are chapter bibliographies.

MULLER, HOLLIS LE ROY

Technique of modern arms. Harrisburg, Pa.: The Military Service Publishing Company, 1940. 417 p. illus. 23 cm. \$2.50. 5143

Contents: Part I, The science of war: Outline of tactical study. Doctrine of war. Tactical leader. Solution of tactical situations. Tactical team. Tactical language. Summary. Part II, The art of leadership: The commissioned officer. The commander. Army efficiency system. Breviary of service customs. Syllabus of military justice. Summary. Appendix. Index.

Note: The purpose of this book is threefold. First, to furnish a simple and concise scheme of study for beginners in the art of war. Second, to present technical details and reference data in a form that may assist students in translating their knowledge of theory into the actualities of warfare. And, third, to provide a progressive tactical course for junior officers preparing for service or extension schools, and for senior officers desiring a "refresher" on bare essentials of the military art.

NATIONAL RESEARCH COUNCIL

Psychology for the fighting man, prepared for the fighting man himself, by a committee of the National Research Council, with the collaboration of Science Service . . . Washington, D.C.:

Infantry Journal, 1943. 456 p. illus. 16 cm. Paper, \$0.25. 5143a

Contents: Psychology and combat. Sight as a weapon. Seeing in the dark. Color and camouflage. Hearing as a tool in warfare. Smell—a sentry. The sense of position and the sense of direction. The right soldier in the right job. Training makes the soldier. How the army teaches. Efficiency in the army. Heat, cold, oxygen and stimulants. Morale. Food and sex as military problems. The soldier's personal adjustment. Leadership. Mobs and panic. Differences among races and peoples. Rumor. Psychological warfare. Index.

Note: Military psychology in popular form written by experts. The matter is arranged so that chapters do not have to be read in sequence. An eight-page index includes many technical terms not used in the text.

OFFICERS' GUIDE. Tenth edition. A ready reference on customs and correct procedures which pertain to commissioned officers of the Army of the United States. Harrisburg, Pa.: The Military Service Publishing Company, 1944. 553 p. illus. 24 cm. \$2.50. 5144

Contents: The Army of the United States. Army educational system. First station. Orientation. Uniforms and equipment. Assumption of command. Leadership. Exercise of command. Mess and supply. The organization staff and its functions. Military courtesy. Customs of the service. Pay and allowances. Appointment, leaves, promotion, retirement. Efficiency reports and reclassification. Foreign service. Privileges, rights, and restrictions of officers. Practical public speaking. Life insurance analysis. Personal affairs of officers. Analysis of the selective training and service act legislation. The man selected for service, by Major General Lewis B. Hershey and Lieutenant Colonel Thomas M. Watlington. Management of the American soldier, by Major General David C. Shanks. Going home. Index.

Note: Designed to give the young officer the essential information required during his adjustment to commissioned status and to the numerous details of military life. Discussions are included which pertain to service in the field as well as in garrison and to the problems of the management of the citizen-soldier as well as the regular. A large portion of the text consists of the written or oral conclusions of officers whose experience is made available for the guidance of others, and there are pertinent extracts from official publications of the War Department. No attempt has been made to discuss technical aspects of warfare or the fundamentals of drill or combat, the emphasis being upon the personnel and administrative details and the relation of the officer to his organization. The tenth edition contains new material on national service life insurance, new organization charts, recent changes in laws relating to veterans, a new section on the Women's Army Corps and other women's organizations, plus numerous other additions to bring the work up to 1944.

PALMER, JOHN MCAULEY

America in arms; the experience of the United States with military organization. New Haven: Yale University Press, 1941. 207 p. 21 cm. \$2.00. 5144a

Contents: Prologue: An army of the people. Congress asks Washington for a military policy. Sentiments on a peace establishment. An ill-organized militia. A well-organized militia. Steuben and Knox. Washington's military policy. Congressional action. Washington in defeat. Jefferson and Madison. The War of 1812. A new military gospel—Washington in eclipse. From Florida to Mexico. Abraham Lincoln forms a war army. Upton versus Washington. Elihu Root, Secretary of War. Henry L. Stimson, Secretary of War. Woodrow Wilson's war army. The National Defense Act. Hitler drives us back to Washington. Epilogue. What of the future?

Note: A brief historical sketch of the policy of the United States in regard to the maintenance of peace time armies and the development of armies in war time. The author visualized the Selective Service Act of 1940 as the solution to the problem of rebuilding the United States Army and as a precedent to a permanent system of universal military training. He did not anticipate the entry of the United States into World War II.

PENNINGTON, LEON ALFRED, AND OTHERS

The psychology of military leadership, by L. A. Pennington, Romeyn B. Hough, Jr., and

H. W. Case. Foreword by Brig. Gen. Wilton B. Persons. New York: Prentice-Hall, Inc., 1943. 288 p. illus. 24 cm. (Prentice-Hall psychology series, F. A. Moss, editor) \$2.95. 5145

Contents: Introduction to military psychology. The officer as an instructor. The officer as a learner. The officer as a leader. The officer as a disciplinarian. The officer as a personnel technician. The officer and adjustment to military service. The officer and his men in battle. The officer and army morale. Glossary. Index.

Note: A textbook setting forth principles of action to which the officer may turn in solving problems involving the human element. Military problems frequently encountered are discussed, and the psychological principles and techniques having a direct bearing on each of the problems are correlated with them.

TILLOTSON, LEE STEPHEN

The Articles of war, annotated. Harrisburg: The Military Service Publishing Company, 1942. 266 p. 23 cm. \$2.50. 5146

Contents (abridged): Preliminary provisions. Courts-martial: Classification. By whom appointed. Jurisdiction. Procedure. Limitations upon prosecutions. Punishments. Action by appointing of superior authority. Punitive articles: Enlistment; muster; returns. Desertion; absence without leave. Disrespect; insubordination; mutiny. Arrest; confinement. War offenses. Miscellaneous crimes and offenses. Courts of inquiry. Miscellaneous provisions. Glossary of legal terms. Supplemental annotations, 1942 and 1943. Index.

Note: A reference book for trial judge advocates and summary court officers presenting the 121 Articles of war in numerical sequence accompanied by interpretative annotations, with references, based on the *Digest of opinions of the Judge Advocate General* from 1912 to 1940. The work applies solely to acts of personnel of the Armies of the United States.

UNITED STATES. INFANTRY SCHOOL, FORT BENNING, GEORGIA

Infantry in battle. Second edition. Washington, D.C.: The Infantry Journal, Inc., 1939. 422 p. illus. 23 cm. \$3.00. 5146a

Contents: Introduction. Rules. Obscurity. Simplicity. Scheme of maneuver and main effort. Terrain. Time and space. Mobility. Surprise. Decisions. The plan. Orders. Control. Command and communication. Supervision. Direction. Fire and movement. Fire of machine guns. Infantry-artillery team. Nearing the enemy. The advance to the attack. Soft-spot tactics. Battle reconnaissance. Counter-orders. Action and morale. Night attacks. Miracles. Optimism and tenacity. Index.

Note: The topic discussed in each chapter receives about one page of definition, after which examples of the experiences of units in actual battle are used to illustrate the points under consideration. Descriptions of combat are similar to the descriptions which appear often in the *Infantry journal*. Black-and-white maps illustrate positions and terrain, and a short discussion states conclusions to be drawn from each example.

UNITED STATES. WAR DEPARTMENT

Armored command field manual. The armored division. Field manual, FM 17-100. Washington, D.C.: Government Printing Office, 1944. 107 p. illus. 17 cm. \$0.20. 5146b

Contents (abridged): General. Training. Reconnaissance. Marches and bivouacs. Security. Offensive action. Defensive action. Special operations. Supply, evacuation, maintenance. Trains. Index.

Note: Designed as a guide for the training and the tactical employment of armored divisions. Numerous full-page diagrams illustrate how tactical objectives are attacked and held. Supersedes in part FM 17-10 (1942).

UNITED STATES. WAR DEPARTMENT

Armored force field manual. Tactics and technique. Field manual FM 17-10. Washington, D.C.: Government Printing Office, 1942. 471 p. illus. 19 cm. \$0.45. 5146c

Contents (abridged): Doctrine and organization. Tactical employment. Scouting and patrolling, mounted. Reconnaissance platoon and company, armored. Armored company and armored battalion, tank, light and medium. Maintenance company, armored regiment. The armored regiment. Reconnaissance battalion, armored. Headquarters company, armored. Service company, armored regiment and division. Division trains, armored. GHQ reserve tank battalion, light and medium. GHQ reserve tank group. Appendixes: Glossary of military terms. Radio channels of communication and radio nets. Index.

Note: A general discussion of the use and purpose of armored units in general, followed by directions, usually in outline form, for the conduct of each type of unit under various circumstances, such as the attack, defensive positions, weather and terrain problems, and night fighting. Superseded in part by FM 17-100.

UNITED STATES. WAR DEPARTMENT

Infantry drill regulations. Basic field manual. Field manual, FM 22-5. Washington, D.C.: Government Printing Office, 1941. 207 p. illus. 19 cm. \$0.30. 5146d

Contents (abridged): The soldier without arms. The soldier with arms. Drill for foot troops. Drill for units with animal-drawn carts for pack animals. Drill for units with motor carriers. Drill for motor and wagon units. Formations of battalion and regiment. Ceremonies. Extended order. Signals. Appendix: Special ceremonial parade. Index.

Note: Directions for posture and marching; manuals for carrying and handling various weapons; definitions; explanations of commands; and positions of units in formations well illustrated with photographs and diagrams.

UNITED STATES. WAR DEPARTMENT

Mission, functions, and signal communication in general. Signal Corps field manual. War Department Field manual, FM 11-5. Washington, D.C.: Government Printing Office, 1940. 217 p. illus. 18 cm. \$0.35. 5146e

Contents (abridged): Purpose of manual and references. Mission. Signal officer. Training. Signal supply. Photography. Signal intelligence service. Signal communication. Technical constructions, and supply data. Appendix. Index.

Note: A general description of the part troops of the Signal Corps perform in the United States Army, with brief descriptions of equipment (photographic, telephonic, and radionic) in use at the time of publication.

UNITED STATES. WAR DEPARTMENT

Quartermaster field manual. Quartermaster operations. Field manual, FM 10-5. Washington, D.C.: Government Printing Office, 1943. 114 p. illus. 17 cm. \$0.15. 5146f

Contents (abridged): Organization and training. Supply. Transportation. Quartermaster service in divisions and higher units. Index.

Note: The functions and responsibility of the Quartermaster Corps in the United States Army are treated very generally.

UNITED STATES. WAR DEPARTMENT

Quartermaster field manual. Quartermaster service in the theater of operations. Field manual FM 10-10. Washington, D.C.: Government Printing Office, 1942. 180 p. illus. 18 cm. \$0.25. 5146g

Contents: I, Communication zone: Organization and functions of theater of operations. Organization and operation of quartermaster service in communications zone. Supply installations. Transportation. II, Combat zone: Responsibility and functions. Definitions. Division quartermaster units. Cavalry and armored divisions. Army corps. Army. Quartermaster service. Troop movements. Plans, orders, estimate of situation, and reports. Protection of food supplies against poisonous gas. Appendix: Routing of requisitions, calls, and supplies. Index.

Note: Outlines the services from filling stations to bakeries, laundries and graves registration units, their functions and how they are performed, with references to other manuals which are more detailed.

VIRTUE, CLARENCE McCURDY

Company administration, including supply and mess management and personnel records, including personnel office organization and procedure. Twelfth edition. Harrisburg, Pa.: The Military Service Publishing Company, 1943. 403 p. illus. 24 cm. Paper, \$1.50; cloth, \$2.00. 5147

Contents: Introduction. Supply and property records. The company mess. The company fund. Morning report. Duty rosters. Daily sick report. Soldiers' deposits. Miscellaneous personnel matters pertaining to the company. Organization of the personnel office. Service record. Pay of enlisted men. Discharge and release from active service; discharge certificates and certificates of service. Correspondence. Miscellaneous personnel matters. Appendix. Index.

Note: Provides in convenient reference form a comprehensive guide covering the various United States Army regulations and other official instructions which have to do with the administration of a company or similar military unit. Based upon official U.S. War Department training manuals and circulars, the book explains and demonstrates the preparation of various reports required to be submitted and the various records which must be maintained. All statements are fully documented with references to the pertinent paragraph in the Army regulation or circular involved. The appendix contains a useful table of daily rates of pay for enlisted men in the United States Army as of 1944.

WILLOUGHBY, CHARLES ANDREW

Maneuver in war. Harrisburg: The Military Service Publishing Co., 1939. 286 p. illus. 25 cm. \$3.00. 5148

Contents (abridged): The historical basis of modern tactics. The principles of war. Mass and direction. Theory of maneuver. Central maneuver. Flank maneuver. The Napoleonic concept of maneuver. The Napoleonic concept of battle. The Spanish civil war, 1936-1939. The Sino-Japanese war. The Italo-Ethiopian war. Epilogue: The war of the future.

Note: A textbook for military schools and a book of discussion for military men. The present edition has been enlarged to trace the application of tactical principles to units from all sizes, ranging from companies to battalions and regiments and to include the military lessons of the wars of the 1930's. The first edition was entitled *The element of maneuver in war*.

Military Maps

LOBECK, ARMIN KOHL, AND WENTWORTH J. TELLINGTON

Military maps and air photographs, their use and interpretation. With an introduction by John K. Wright. New York: McGraw-Hill Book Company, Inc., 1944. 256 p. illus. 29 cm. \$3.50. 5149

Contents: Part I, Basic map reading: Fundamental requirements. The topographic sheet. Part II, Elementary problems and methods. Part III, Topographic forms. Part IV, Advanced map reading: Techniques and methods. In the field. Part V, Landscape types: Constructional forms: plains, plateaus and mountains. Destructional forms: landscape details. Part VI, Air photographs: The fundamentals. Uses in the field. Part VII, Problems: Comprehensive problems. The Mannheim map.

Note: A comprehensive text for students of cartography, especially those in war training courses. Emphasis is placed on the understanding and use of maps, rather than on the technique of their construction. The various symbols used to designate land formations and the grouping of these symbols are described in detail, together with instructions in the techniques and methods of map interpretation. The volume is well illustrated with typical maps, and exercises and problems are included in each section.

MACLEAN, NORMAN F., AND EVERETT C. OLSON

Manual for instruction in military maps and

aerial photographs. New York: Harper & Brothers, 1943. 138 p. illus. 24 cm. (Harper's geoscience series; Carey Croneis, editor) \$1.75.
5150

Contents: The soldier's map. Conventional signs and symbols. Military symbols. Direction on the ground. Direction on the map. Declination, intersection, resection, and orientation. Distance on the ground and the map. Arithmetic for construction and conversion of scales. Construction and conversion of the graphic scale and RF. The relief map: its military importance. The contour map. Training film, examination. Field exercise. Aerial photographs: principles of interpretation. Interpretation of detail of aerial photographs. Orientation, scale, distance, and direction; hasty maps. Appendix: Foreign maps. Synoptic outline. Index.

Note: This manual is designed both for individuals who need to use military maps and aerial photographs and for instructors in these subjects. It explains the signs and symbols used on maps, methods of estimating distances, construction of maps, relief and contour maps, the interpretation of detail in aerial photographs, and many other points. Five large reproductions of aerial photographs are provided for study, and are also available separately on lantern slides. The book is a contribution from the University of Chicago's Institute of Military Studies.

MAP AND AERIAL PHOTOGRAPH READING, COMPLETE.
Harrisburg, Pa.: The Military Service Publishing Company, 1943. 189 p. illus. 23 cm. \$1.00.
5151

Contents: Definitions. Conventional signs and symbols. Finding places on a map. Distance and time. Direction and azimuths. Elevation and relief. Map reading in the field. Approach to foreign map reading. Additional information. Topographical identification and military terrain features. Scales and azimuth. Stereovision. Restitution of aerial photographs. Answers to questions and exercises. Index.

Note: A brief summary for use in Army courses to supplement technical and field manuals on the subject, and as a practical book for enlisted men and officers in the field. The material, including foreign map reading, is based on official War Department publications and is not meant for professional cartographers. A topographic map, aerial photographs, and cardboard protractors accompany the text.

PUTNAM, WILLIAM CLEMENT

Map interpretation with military applications.
New York: McGraw-Hill Book Company, Inc., 1943. 67 p. illus. 28 cm. \$1.25.
5152

Contents: Contour maps. Aerial photographs. Geologic interpretation. Erosive processes.

Note: Describes in nontechnical terms the landforms represented on maps and shows the student how to recognize terrain features and to evaluate their military and tactical significance. The book includes a discussion of maps used in military operations. The illustrations, including topographic maps, vertical and oblique aerial photographs, and block diagrams, are integrated with the text.

Mathematics for Military Science

BLISS, GILBERT AMES

Mathematics for exterior ballistics. New York: John Wiley & Sons, Inc., 1944. 128 p. illus. 20 cm. \$2.00.
5153

Contents: The need for mathematics in exterior ballistics. The differential equations for a trajectory. The Siacci theory. Approximate integration of the equations of exterior ballistics. Differential corrections. Bombing from airplanes. Tables for computation. Bibliography. Index.

Note: This brief volume covers the elementary calculus and differential equations used in the theory and computation of the trajectories and their differential corrections which are listed in the range tables for artillery fire control. The treatment assumes that the reader will have a knowledge of engineering mathematics.

HANSON, PAUL PHILIP

Military applications of mathematics. New York: McGraw-Hill Book Company, Inc., 1944. 447 p. illus. 23 cm. (A McGraw-Hill practical manual) \$3.00.
5154

Contents: Military maps. Field-artillery gunnery. The mathematics of air navigation. Miscellaneous applications: Seacoast-artillery gunnery. Range finders. Bomb ballistics. Antiaircraft-artillery gunnery. Motor transport. Practical military engineering. Conclusion. Appendix: Mathematics refresher. Arithmetic. Elementary algebra. Geometry. Logarithms. Trigonometry. The slide rule. Probability. Verniers. Tables. Index. Answers.

Note: A textbook for use in army training programs which provides applications in military situations of the mathematics learned in grade school and high school. The examples and exercises are practical military problems presented in their natural setting in order to illustrate the way in which the various activities involved are related to each other in combat operations. A thorough knowledge of arithmetic is required, plus a knowledge of the fundamental principles of elementary algebra, plane geometry, trigonometry, logarithms, and the slide rule. A review section of nearly 100 pages is included, however, for those students whose mathematics fall short of these requirements.

LEVY, SOPHIA HAZEL

Introductory artillery mathematics and anti-aircraft mathematics. Berkeley: University of California Press, 1943. 100 p. illus. 22 cm. \$2.50.
5155

Contents: Algebra, geometry, trigonometry, coordinates in two dimensions. Coordinates in three dimensions (terrestrial and celestial), determination of true North. Logarithmic scales, slide rules, including the Crichlow slide rule, and solutions of triangles using slide rules and using logarithms. Motion of a projectile, the trial shot problem, lateral deviations in slant and horizontal planes. Solutions of triangles of the trial shot problem using slide rules and using logarithms. Graphical solutions of the trial shot problem. Summary of directions for solutions of triangles and the trial shot problem. Tables: Conversion tables for angles and lengths, four-place tables of natural trigonometric functions, logarithms of numbers and logarithms of the trigonometric functions for angles in mils. Index.

Note: This book has been written for the use of men in the armed services of the United States, primarily for those engaged in the anti-aircraft service. It concerns itself with the parts of mathematics essential to their work. The trial shot problem has received emphasis; descriptions of slide rules have been included. Only type problems have been given and all have been solved completely. Two slide rules and a protractor are included with the book.

THOMAS, JOSEPH MILLER

Elementary mathematics in artillery fire. With tables prepared by Vincent H. Haag. New York: McGraw-Hill Book Company, Inc., 1942. 256 p. illus. 23 cm. \$2.50.
5156

Contents: Angles. Tables. Some geometric theorems. Model solutions of triangles. Maps. Location. Parallax. Difference in level. Trajectory in vacuo. Range tables. Probability. Adjustment of fire. Index.

Note: A text for undergraduate college courses in mathematics, which presupposes a knowledge of elementary algebra, geometry, and trigonometry. Although it is written from the point of view of its military applications, the actual work on gunnery is limited to the last four chapters. Exercises are provided in each chapter and an appendix includes tables of trigonometric functions.

Military Engineering

BOND, PAUL STANLEY, EDITOR

Military science and tactics; engineers basic course; a text and reference of basic engineer training, conforming to the War Department

program. Washington, D.C.: P. S. Bond Publishing Co., 1941. 512 p. illus. 24 cm. \$2.60.

5156a

Contents: The national defense. Infantry drill regulations. Setting-up exercises. Rifle training. U.S. rifles M 1903 and M 1. Military sanitation and first aid. Military discipline, courtesies and customs of the service. Interior guard duty. Military organization. Map reading. Characteristics of weapons. Scouting and patrolling.

Note: A textbook for military courses in which each chapter approximates the War Department field manual on the same subject. Introductory chapter discusses the relationship of our army to the government and traces our general military policy. Questions for students appear at the end of each chapter.

MOTT-SMITH, MORTON CHURCHILL, AND MARJORIE VAN DE WATER

A course in the fundamentals of mechanics. Unless otherwise credited, all photographs are by Fremont Davis. Washington, D.C.: The Infantry Journal, 1944. 188 p. illus. 22 cm. Paper, \$0.25.

5156b

Contents (abridged): The mechanic works with matter. Atoms and molecules. Inertia, mass, and motion. Elasticity and the states of matter. Why we measure. System of measurement. Force, work, power. The lever. The wheel and axle. Gears and gear trains. The wedge and the screw. Independent motions. Syphons, pumps, and the hydraulic press. Surface tension, capillarity and flow. Heat and its measurement. Expansion. Change of state. Heat transfer. Combustion. The automobile. Military and industrial speeds. Useful formulas. Index.

Note: The fundamentals of practical physics. Intended for use in self-education by the soldier or war worker. The work offers numerous applications of physical theory to the everyday problems encountered by the soldier-technician and the mechanic in war industries. The authors are Science Service staff writers.

The R. O. T. C. manual. Engineers. Ninth edition. A textbook for the Reserve Officers' Training Corps. Harrisburg, Pa.: Military Service Publishing Company, 1941-42. 4 v. in 2. illus. (part col.) 24 cm. Vol. 1-2, \$4.00; vol. 3-4, \$6.00.

5156c

Contents (abridged): Volume i. Military courtesy and discipline. Military organization—general. Rifle and rifle marksmanship. Bayonet training. Map reading. Organization and duties of engineers. Volume ii. Tactical training of the individual soldier. Characteristics of infantry weapons. Aerial photograph reading. Knots, lashings and rigging. Volume iii. Administration. Defense against chemical warfare. Care and operation of motor vehicles. Military explosives and demolitions. Military bridges. Field fortifications. Volume iv. Military history and policy of the United States. Supply procurement. Mess management. Fixed bridges.

Note: A comprehensive and standard textbook designed to cover the full four-year training course of reserve officers. This edition has been extensively revised since the entry of the U.S.A. into World War II.

UNITED STATES. WAR DEPARTMENT

Construction and routes of communication. War Department Field manual 5-10, 28 January 1944. Washington: United States Government Printing Office, 1944. 596 p. illus. 17 cm. \$0.75.

5157

Contents (abridged): Roads. Advanced landing field. Construction of military railways. Port lay-out. Barging operations. Heavy construction equipment. Concrete. Fundamentals of bridging. Standard stream crossing equipment. Stream crossing expedients. Index.

Note: This manual covers principles and methods of construction, and routes of communication, in the theater of operations. It includes road, railway, and timber bridge design and construction; landing field construction and maintenance; hasty reinforced concrete construction; and summarizes the characteristics of standard stream-crossing equipment.

UNITED STATES. WAR DEPARTMENT

Corps of Engineers reference data. War Department Field manual 5-35, 24 March 1944. Washington, D.C.: United States Government Printing Office, 1944. 264 p. illus. 17 cm. Paper, \$0.35.

5158

Contents (abridged): Bivouacs. Explosives and demolitions. Field fortifications. Obstacles. Camouflage. Roads and airdromes. Bridges and stream-crossing equipment. Railways. Water supply. Materials. Rigging. Miscellaneous data. Index.

Note: This manual supersedes FM 5-35, 15 February 1941, including C 1, 16 October 1941, and C 2, 26 December, 1941. It contains ready reference data in the briefest possible form for use of engineer troops on common military engineering subjects. The contents consist principally of tables, diagrams, formulas, and other technical data.

UNITED STATES. WAR DEPARTMENT

Explosives and demolitions. Field manual FM 5-25. Washington, D.C.: Government Printing Office, 1944. 17 cm. \$0.25.

5158a

Contents (abridged): Explosives. Demolition equipment. Land- ing, storing and transporting explosives. Preparation of charges. Calculation and placing of charges. Demolition projects. Appendices: British standard explosives. Relieved-face cratering method. Index.

Note: Outlines characteristics of principal military explosives, describes methods of detonating them, and their uses in demolitions of bridges, tunnels, and railroads.

UNITED STATES. WAR DEPARTMENT

Field fortifications. War Department Field manual FM 5-15. Washington: United States Government Printing Office, 1944. 267 p. illus. 17 cm. \$0.35.

5159

Contents (abridged): Terrain evaluation. General fortification technique. Entrenchments and emplacements. Shelters. Index.

Note: This manual describes field fortification methods and gives details of construction of entrenchments, emplacements and shelters (all works of an engineering nature). It also outlines the principles of terrain appreciation and explains how to combine individual field fortifications into a unified system by means of organization of the ground.

UNITED STATES. WAR DEPARTMENT

Ground water supply for military operations. War Department Technical manual, TM 5-296, 1 February 1944. Washington, D.C.: United States Government Printing Office, 1944. 88 p. illus. 23 cm. Paper, \$0.15.

5160

Note: This manual presents fundamental information on the occurrence of ground water and on the location of ground-water supplies for military purposes. It covers the occurrence of water in rocks, the relationships between rock structures and ground-water movement, the location of usable water in coastal zones and desert regions, the occurrence of springs, the quality of water to be expected from various sources, and methods of ground-water reconnaissance. In geologic terms, "rocks" include loose deposits of gravel, sand, silt, and clay, as well as consolidated materials such as granite, basalt, and limestone. This is a geological study and military operations are, for all practical purposes, disregarded.

UNITED STATES. WAR DEPARTMENT

Operations of engineer field units. War Department field manual 5-6. Washington: United States Government Printing Office, 1943. 288 p. illus. 17 cm. Paper, \$0.20.

5161

Contents (abridged): Mission, duties, and employment. Engineer plans and orders. Engineer intelligence and reconnaissance. Combat operations. River crossing operations. Operations under special geographical conditions. Denial operations and lay-out and construction of defensive positions. Troop movements, shelters, and camps. Traffic circulation and control. En-

gineer supply. Operations of division engineer units. Operations of other units with ground forces. Operations of engineer troops with air forces. Operations of engineer units with Army Service Forces. Index.

Note: Objectives, general rules, and standard operating procedures for engineer troops under all types of conditions and circumstances.

UNITED STATES. WAR DEPARTMENT

Water supply and water purification. War Department Technical manual 5-295. June 2, 1942. Washington, D.C.: Government Printing Office, 1942. 312 p. illus. 23 cm. Paper, \$0.55. 5162

Contents (abridged): Sources of water and its impurities. Development of water sources. Water quality and effect of substances dissolved and suspended in water. Water purification. Storage, distribution, and measurement of water. Operation: General. Coagulation and sedimentation. Mobile water purification unit M-3, Model 1940. The portable water purification unit. Rotary drill rig. Percussion well rig. Drive point driven wells. Jetted wells. Screening, testing and development of wells. Portable field bathing unit. Portable distillation units. Appendixes. Index.

Note: Discusses those basic principles of water supply and water treatment which pertain to both civilian and military practice and in addition the expedients necessary in the field.

UNITED STATES. WAR DEPARTMENT

Well drilling. War Department Technical manual TM 5-297. War Department, 29 November 1943. Washington: United States Government Printing Office, 1943. 276 p. illus. 23 cm. Paper, \$0.35. 5163

Contents (abridged): Construction of dug wells. Bored wells. Jetting methods of well construction. Driven wells. Introduction to drilling methods. Rotary drilling method. Percussion drilling method. Well development. Pumps. Appendixes: Bibliography. Useful information for well drillers. Index.

Note: This manual covers the development of ground-water sources for military use. It includes detailed construction methods for the important types of wells and gives advantages and limitations of each type. The military aspects of the subject are not treated extensively here, emphasis being on the general subjects of wells and equipment used in constructing them.

Camouflage

BRECKENRIDGE, ROBERT P.

Modern camouflage, the new science of protective concealment. With a foreword by Brigadier General U. S. Grant, 3d. New York: Farrar & Rinehart, Inc., 1942. 280 p. illus. (part col.) 22 cm. \$2.75. 5164

Contents: What is camouflage? What is the purpose of camouflage? Aerial bombing. How does the bombardier identify his target? Types of protective concealment. Site selection. The development of a new site. Concealment of existing grounds and roads. Plant materials for protective concealment. Concealment of existing buildings. Other special and difficult problems. Decoy installations. Blackouts. Preparing the camouflage plan. The construction of models. Other aids to concealment. Looking ahead. Appendix: Data on shadows for protective concealment. Bibliography. Index.

Note: This material, prepared for courses in camouflage by an engineer officer active in the camouflage section of the United States Army, is illustrated by 132 photographs, drawings, and diagrams. It gives a comprehensive and realistic treatment of the subject.

WITTMANN, KONRAD F.

Industrial camouflage manual, prepared for the Industrial Camouflage Program at Pratt Institute, Brooklyn, New York. New York: Rein-

hold Publishing Corporation, 1942. 128 l. illus. 28 cm. \$4.00. 5165

Contents: Dedication. Introduction. Appreciation. Scope of industrial camouflage. New aspects, new requirements, new programs. Industrial camouflage principles, methods, and materials. Demonstration on models and examples for camouflage practice. Typical report for camouflaging a factory. In conclusion.

Note: This volume is based on experimental work carried on in the classrooms and laboratory of Pratt Institute, New York. It is made up entirely of plates illustrating practical methods for the camouflage of various types of buildings and terrain. The textual material consists of explanatory notes which accompany each diagram or photograph.

Ordnance and Gunnery

BASIC HEAVY WEAPONS MANUAL. Harrisburg, Pa.: Military Service Publishing Company, 1943. 1038 p. illus. 24 cm. \$3.00. 5166

Contents: FM 7-10, Rifle company, rifle regiment. FM 23-15, Browning automatic rifle, caliber .30, M1918A2 with bipod. FM 23-25, bayonet, M1905. FM 23-25, automatic pistol, caliber .45, M1911 and M1911A1. FM 23-45, Browning machine gun, caliber .30, HB M1919A4, ground. FM 23-55, Browning machine gun, caliber .30, M1917. FM 23-60, Browning machine gun, caliber .50, HB, M2, ground. FM 23-70, 37-mm gun, antitank, M3. FM 23-85, 60-mm mortar, M2. FM 23-90, 81-mm mortar, M1. FM 23-30, grenades.

Note: This is a technical guide, compiled from United States Army Field Manuals by qualified authorities on the operation, care, and use of rifles, machine guns, pistols, antitank guns, mortars and grenades of the United States military establishment. Construction of target ranges, marksmanship, field training, bayonet fighting, organization and firing exercises are some of the many aspects dealt with for each of the weapons discussed.

HAYES, THOMAS JAY, EDITOR

Elements of ordnance; a textbook for use of cadets of the United States Military Academy, prepared under the direction of Thomas J. Hayes. A revision of the "Textbook of ordnance and gunnery," by Colonel Earl McFarland. New York: John Wiley & Sons, Inc., 1938. 715 p. illus. 23 cm. \$6.50. 5167

Contents: Propellants and high explosives. The theory of explosives. Interior ballistics. Metals. Guns. Breech mechanisms. The theory of recoil and recoil systems. Artillery. Aiming and laying devices. Exterior ballistics. Probability of hitting. Bombing from airplanes. Off-carriage fire-control instruments. Fire control for anti-aircraft artillery. Artillery ammunition. Bombs and grenades. Small arms and small arms ammunition. Light armor. Automotive equipment. Appendix. Index.

Note: Considers the theory and basic principles underlying the construction, operation, and use of modern ordnance. Charts and pictures are used liberally to illustrate the text. Chapters x and xii have been published separately as follows: Thomas J. Hayes, *Exterior ballistics*, New York: John Wiley & Sons, Inc., 1938, 98 p., \$1.00.

JOHNSON, MELVIN MAYNARD, JR., AND CHARLES T. HAVEN

Automatic arms, their history, development and use. New York: W. Morrow and Co., 1942. 284 p. illus. 24 cm. \$5.00. 5168

Contents (abridged): Early multifiring arms. Automatic pistols. Automatic rifles up to and including the first World War. Post-war military developments. Classification of automatic weapons. Factors affecting design. Methods and systems of feed. Malfunctions and stoppages. Ammunition. Combat notes. Fire effect. Combat efficiency of the rifle. Automatics in the squad. Considerations affecting the L.M.G. The problem of ammunition supply. Accuracy. Design critique of automatic mechanisms. Appendixes. Index.

Note: A study of automatic weapons, how they work, how to keep them firing, how each type is used in combat, etc. New

material in this edition includes an ammunition chart of the world's military cartridges, material on new enemy weapons, and a section on current trends in aircraft and other automatic cannon.

JOHNSON, MELVIN MAYNARD, JR.

Rifles and machine guns; a modern handbook of infantry and aircraft arms. New York: William Morrow and Co., 1944. 390 p. illus. 24 cm. \$5.00. 5169

Contents: Part I, Classification and history: Classification and general function of weapons. Historical outline from 1900 to 1919. Historical outline since World War I. Part II, Small arms of World War II: Rifles and semi-automatic rifles. Automatic or machine rifles and light machine guns. Sub-machine guns, carbines, pistols. Anti-vehicle weapons. Part III, Theory and practice: Aircraft and other automatic cannon. Ammunition. Malfunctions, stoppages, care and cleaning. Accuracy, sighting, hitting, fire-power. Concepts of small arms.

Note: An illustrated guide to 64 modern small arms from the Mauser to the Bazooka, analyzing each from the practical standpoint of use. Describes all the important United States and foreign weapons of the period of World War II.

LEY, WILLY

Shells and shooting. New York: Modern Age Books, 1942. 223 p. illus. 21 cm. \$2.00. 5169a

Contents: Introduction. Anatomy and physiology of a gun. Masters of the "black art." The ancestors of artillery. As few types as possible. Trench artillery. Bigger cannon of today. Extreme guns. Rockets in battle.

Note: Articles describing the development of artillery in warfare for the general reader. The chapter on rockets was written before rockets and V-bombs were actually used as artillery. The author believed "it is not likely that rocket artillery will be revived during the present war."

SMITH, WALTER HAROLD BLACK

Basic manual of military small arms, American, British, Russian, German, Italian, Japanese, and all other important nations. Working drawings by George R. Gans; photography by Albert Losch, William Stack, Ray Snow, H. B. Flaum, Jack Bernstock. Harrisburg, Pennsylvania: Military Service Publishing Company, 1943. 213 p. illus. 27 cm. \$2.00. 5170

Note: This book is an illustrated manual of instruction on all the important military small arms in use in the world. It tells and shows by detail photographs and working drawings how to load, operate, disassemble, and maintain the various military rifles, revolvers, automatic rifles and machine guns used in Great Britain, Germany, Italy, Russia, and ten other countries, that a soldier may find anywhere in the world. Full operating data are given on such weapons as the German Luger (Parabellum) pistol, the Japanese Nambu machine rifle, the British Bren, Lewis and Vickers machine guns, and the small arms used in the United States services.

UNITED STATES. WAR DEPARTMENT

Ammunition, general. War Department Technical manual no. 9-1900. War Department, Washington, July 3, 1942. Washington: United States Government Printing Office, 1942. 212 p. illus. 22 cm. \$0.25. 5171

Contents (abridged): General. Basic types of ammunition. Care, handling and preservation. Destruction of unserviceable ammunition. Appendixes: Glossary. Abbreviations. List of references. Index.

Note: This manual supersedes TM 9-1900, September 8, 1941, including Training circulars 11 and 12, 1942. The information given is of a general technical nature. It concerns the several types of ammunition, their general characteristics, means of identification, care in handling and use, storage and maintenance, surveillance and grading, packing and marking, shipping,

and the destruction of duds and unserviceable ammunition. Subjects treated include cartridges, shells, grenades, mines, mortar ammunition, artillery ammunition, bombs and pyrotechnics. The bibliography lists only War Department publications.

UNITED STATES. WAR DEPARTMENT

Field artillery. Tactics and technique of division artillery and higher artillery echelons. Field manual FM 6-100. Washington, D.C.: Government Printing Office, 1944. 84 p. illus. 17 cm. \$0.15. 5171a

Contents (abridged): Infantry division artillery: Mission and organization. Principles of employment. Command and staff. Plans and orders. Fire directions. Signal communication. Survey. Corps artillery: Mission and organization. Principles of employment. Command and staff. Plans and orders. Fire direction. Intelligence. Signal communication. Survey. War department reserve artillery: Groups. Brigades. Army artillery. Estimate of artillery requirements: Counterbattery intelligence aids. Examples of survey control.

Note: A brief general outline of standard tactics designed for artillery staff officers. Examples of plans and orders in typical problems are included.

UNITED STATES. WAR DEPARTMENT

Orientation for artillery. War Department manual TM 44-225. War Department, 30 June 1944. Washington: United States Government Printing Office, 1944. 248 p. illus. 23 cm. \$0.40. 5172

Contents (abridged): Duties of reconnaissance officers. Instruments. Methods of designating location. Coordinate systems. Methods of determining position—traverse. Methods of determining position—intersection. Methods of determining position—resection. Vertical control. Elementary astronomy. Azimuth determination—approximate methods. Stellar observation. Solar observation. Star identification. Use of bearing charts for orientation for artillery. Observations for latitude. Appendixes: Charts and tables. Air defense and tables. Index.

Note: This manual supersedes TM 4-225, *Orientation*, 15 July 1941. "Orientation" as used in connection with artillery includes the location of points in both a horizontal and vertical direction and the establishment of lines of known length and azimuth. This manual includes both quick, approximate methods and more lengthy precise methods of solving orientation problems.

Chemical Warfare

HESSSEL, FREDERICK ADAM, AND OTHERS

Chemistry in warfare; its strategic importance, by F. A. Hessel, M. S. Hessel, and J. W. Martin. New revised and enlarged edition, with a technical appendix. New York: Hastings House, 1942. 179 p. illus. 21 cm. \$2.00. 5173

Contents: The soldier. Man-made man-killers. Machines of modern warfare. Crucibles of death. The chemical industry—America's first line of defense. Appendix. Bibliography.

Note: A concise but comprehensive outline of the role played by chemistry in modern warfare, describing briefly the chemical processes and chemical products required and the approximate quantities used. While intended primarily for the interested layman and army officers, the technical data presented in the appendix together with the bibliography of 80 references make the work useful to the chemist as well. The revisions in this edition consist of about 15 additional pages covering advances made between 1940 and 1942.

JACOBS, MORRIS BORIS

War gases, their identification and decontamination. New York: Interscience Publishers, Inc., 1942. 180 p. illus. 23 cm. \$3.00. 5174

Contents: Classifications of the chemical agents: Definition of terms. Physiological classification. Chemical classification. The physical characteristics and physiological response of the war gases: Lung irritants. Lachrymators. Vesicants. Systemic poisons. Screening smokes. Incendiaries. Effects of war gases on materials, water and food: Sampling. Metals. Textiles and leather. Water. Foods. Growing crops. Livestock. Sampling. Scheme of analysis: Sight. Smell. Chemical field tests. Chemical laboratory tests. Detection and determination of arsenic. Confirmatory tests: Classification according to chemical constituents. For instance: Group II B. Lewisite, methylchloroarsine, phenylchloroarsine, diphenylchloroarsine. Decontamination: Types: Weathering. Washing. Destruction. Sealing or burying. Methods: Road surfaces. Buildings. Household articles. Vehicles. Clothing. Water. Foods. Protection and salvage of foods.

Note: Deals with the detection, sampling, and identification of chemical warfare agents, as well as the decontamination of areas and materials polluted by them. This information is particularly useful to gas identification officers, war gas chemists, decontamination officers, and health officers. Many methods of analysis are given, and in some instances equipment is illustrated. Bibliographical references are included.

PRENTISS, AUGUSTIN MITCHELL

Chemicals in war; a treatise on chemical warfare. With chapters on the protection of civil populations and international situation, by George J. B. Fisher. New York: McGraw-Hill Book Company, Inc., 1937. 739 p. illus. (part col.) 23 cm. \$7.50. 5175

Contents: Fundamental considerations: Basic principles. Technical and tactical requirements. Dissemination of chemical agents. Military organization for chemical combat. Chemical agents: Classification. Lachrymatory agents. Lung-injuring agents. Systemic toxic agents. Vesicant agents. Respiratory-irritant agents. Smoke agents. Incendiary agents. Technique and tactics of chemical warfare: General chemical tactics. Chemical technique and tactics of infantry. Chemical technique and tactics of cavalry. Technique and tactics of chemical troops. Chemical technique and tactics of artillery. Chemical technique and tactics of air corps. Defense against chemical attack: Individual protection. Collective protection. Tactical protection. Protection of civil population. General considerations: Relation of chemical industry to chemical warfare. The effectiveness of chemical warfare. International situation.

Note: A comprehensive and authoritative work presenting the subject from scientific, military, and industrial viewpoints.

UNITED STATES. WAR DEPARTMENT

Military chemistry and chemical agents. War Department Technical manual no. 3-215. War Department, Washington, April 21, 1942. Washington: United States Government Printing Office, 1942. 171 p. illus. 21 cm. \$0.25. 5176

Contents (abridged): Fundamental principles. Nomenclature of organic compounds. Chemical agents. Index.

Note: This pamphlet supersedes TM 3-215, October 1, 1940. The first two sections form a simple outline of the general principles of elementary chemistry; the third is a discussion of substances used in war to produce a toxic physiological effect, screening smoke, or incendiary action.

WAIIT, ALDEN HARRY

Gas warfare, the chemical weapon, its use, and protection against it. New York: Duell, Sloan and Pearce, 1942. 327 p. illus. 21 cm. \$2.75. 5176a

Contents: Part I, The poison gases, smokes, and incendiaries: The ideal weapon. The birth of chemical warfare—the first gas attack. Properties of the agents of chemical warfare. The choking or suffocating gases. The blister gases. The tear gases and other agents. The screening smokes and incendiaries. Part II, Chemical weapons and their use in battle: The ground weapons of chemical warfare. Air chemical weapons. The employment of gas in battle. Gas on a hostile shore. Part III, Protection and first aid: The gas mask. Protection of individuals. Protection of groups. Tactical protection. Protection against air chemical attack and civil protection. First aid. Appendix: Description of chemical agents, properties. Use of civilian gas mask. Care of

gas masks. Disinfection of gas masks. Use and care of protective clothing. How to gasproof a shelter. Number of people to be accommodated in gasproof shelters. Bleach mixtures for decontamination. Index.

Note: Discusses in simple language the equipment and materials used in chemical warfare at the start of World War II.

Military Aviation

ARMY AIR FORCES AID SOCIETY

AAF: the official guide to the Army Air Forces; a directory, almanac and chronicle of achievement. New York: Simon and Schuster, 1944. 380 p. illus. (part col.) 22 cm. \$2.50. Also published by Pocket Books, Inc., New York, 1944, board, \$0.25. 5177

Contents: Foreword, by General H. H. Arnold. On target—an introduction to the AAF. What we are. Who we are. How we train. What we fight with. How we keep 'em flying. What we fight from. Our battlefield. Our air forces in action. Historical highlights: Chronological record from Civil War to Pearl Harbor. Awards and insignia. Rotogravure sections. Appendix. Index.

Note: This book is a useful, accurate guide to the operations of the United States Army Air Forces. It is intended primarily to give the general public in the United States a thorough understanding of their military air organization. Some of the many subjects covered are: the parts of an air force; command, staff and control; unified planning; training for pilots, navigators, bombardiers, gunners, glider pilots, radar observers; types and performance characteristics of AAF airplanes; engines and engineering; the need for airbases; maintenance and control of airfields; the Army Airways Communications System; aviation medicine; strategic and tactical operations; bombing problems; and air defense. While no detailed technical information on any of these subjects is offered, the work is valuable to student pilots and other AAF personnel as a work of general reference. There is a detailed index and 64 pages of photographs.

AYLING, KEITH

Bombardment aviation. Harrisburg, Pa.: Military Service Publishing Company, 1944. 234 p. illus. 19 cm. \$2.00. 5178

Contents: Beginnings. World War II development. Technique. Day bombing. Night bombing. Dive-bombing. Low-flying attack. Attack on ships. Bombs. Bombardment value. Bombers.

Note: A study of the development and use of bombing in warfare, from its first conception before World War I down to the end of 1943. The techniques, materials, and strategy of bombing both by night and day, and the various uses of the weapon are discussed as far as is consistent with military security. The possibilities of bombing in winning the present war and in maintaining the peace are treated, and a study made of the reasons behind the growing Allied superiority in this type of warfare.

AYLING, KEITH

Bombers. New York: Thomas Y. Crowell Company, 1944. 194 p. illus. 21 cm. \$2.50. 5178a

Contents: Short history of bombers. Heavy bomber. Flying fortress. Liberator. British heavies: Lancaster and Halifax, Stirling, Wellington, and Whitley. American medium bombers. The Boston. The Mosquito. Dive bombers. Torpedo bombers. Patrol bombers. Russian bombers. Axis bombers. The future. Index.

Note: A book written for the layman including accounts of incidents of World War II, but useful to anyone interested in airplanes as a manual of comparison and contrast in types of planes. There are 31 well-selected photographs, many of them United States Army and British official photographs.

AYLING, KEITH

Combat aviation. Harrisburg, Pa.: Military Service Publishing Company, 1943. 253 p. illus. \$2.00. 5179

Contents: Planes and men. Formations. Large formations. Single combat. Gunnery. Interception. Night interception. Ground support. Old masters and new. Recognition. Bibliography.

Note: A guide and refresher course for fighter pilots as well as for students, presenting the fundamentals of air combat with examples of modern tactics. Written in a non-technical style, it may be useful also to writers and radio commentators who have to discuss aviation, as well as to the general public.

CHANDLER, CHARLES DEFOREST, AND FRANK P. LAHM

How our army grew wings: airmen and aircraft before 1914. New York: The Ronald Press Company, 1943. 333 p. illus. 22 cm. \$3.75.

5179a

Contents: Early aeronautics. Civil War observation balloons. Events, 1890 to 1906. Influence of ballooning as a sport. Army aeronautics is revived. Langley mechanical flight experiments. Aerostation at Fort Omaha. First army dirigible balloon. The birth of aviation. The first army airplane. Thomas E. Selfridge. Army flying in Texas, 1910-1911. College Park and Augusta, 1911-1912. College Park, 1912. Aviation in the Philippine Islands. Augusta and Texas City, 1913. The school at North Island, San Diego. Conclusion. Appendixes. Index.

Note: An illustrated history of American Army aviation from its beginnings to 1914. Its purpose is to provide a source of accurate information for Air Corps personnel and historians. The authors as officers in the United States Army participated in many of the events recounted.

CUNEO, JOHN R.

Winged Mars. Harrisburg, Pa.: The Military Service Publishing Company, 1942. 338 p. illus. 23 cm. \$2.50.

5180

Contents (abridged): In the beginning. The rise and fall of German military ballooning. The beginnings of anti-aircraft defense. The first German dirigibles. The struggle for dirigible supremacy. The German navy tries Zeppelins. The awakening of German military aviation. Airplanes in the German navy. The theoretical use of the German air weapon. The enigma of French military aeronautics. The role of the French air weapon. The air weapon at the outbreak of hostilities. Appendixes: Parsevals accepted by the German army prior to August, 1914. Dirigibles built by the German army. Zeppelins accepted by the German army prior to August, 1914. Schutte-Lanz dirigibles accepted by the German army prior to August, 1914. Private dirigibles taken over by the German army at outbreak of war. Dirigibles acquired by the French and German armies prior to August, 1914. Zeppelins accepted by the German navy prior to August, 1914. Some German army airplanes of 1941. Some French and German army airplanes of 1941. Some German naval seaplanes of 1941. Some British naval seaplanes of 1941. Organization of the German air weapon prior to 1914. Notes. Bibliography. Index.

Note: A brief, non-technical outline of the general growth of European air power, with special attention given to German developments from 1870 to 1914, exclusive of the first World War. First of a projected series of three volumes covering the history of air warfare from 1870 to the present. Fully annotated. An extensive bibliography of English, French, and German books and articles on the subject is included.

HAYDON, FREDERICK STANSBURY

Aeronautics in the Union and Confederate armies, with a survey of military aeronautics prior to 1861. Volume I. Baltimore: The Johns Hopkins Press, 1941. 421 p. illus. 23 cm. \$4.00.

5180a

Contents: Acknowledgments. Glossary of abbreviations and symbols cited in the footnotes. Foreword. Introduction: Military aeronautics prior to 1861. James Allen: first trial and failure. John Wise: second trial and failure. John La Mountain: free lance balloonist of the Army of the Potomac. The early career and work of T. S. C. Lowe, chief aeronaut of the Army of the Potomac. Two months of progress: Lowe's operations, August-September, 1861. The first American air force: the balloon service of the Army of the Potomac, Part One: Material and personnel. The balloon service of the Army of the Potomac, Part Two: Administration. The balloon service of the Army of the Potomac, Part Three: Operation. First organized service: operations on the Potomac lines, November, 1861-March,

1862. Operations in the Department of the South and the Western Department, 1862. Index.

Note: This well-documented history covers the rise of military aeronautics including the development of the Balloon Corps in the Union and Confederate Armies during the American Civil War. The first volume deals with the period 1861-62 and subsequent volumes for later years are in preparation. Forty-four plates of photographs and drawings are included.

LA BORDE, ADRAS P.

"Roger Wilco" ABC of radio for flyers. Harrisburg, Pa.: Military Service Publishing Co., 1943. 124 p. illus. 19 cm. \$2.00.

5181

Contents: Your friend, the radio. Pilot's radio equipment. Using the radiotelephone. Radio air-traffic control. Using the radiotelegraph. Radio in emergencies. Radio in air navigation. Practical radio navigation problem. Message by radio. Appendixes: Frequencies. Commonly used operating signals. Phraseology for expressing numbers. Position report and radio flight plan, correct sequence. Emergency signals. U.S. broadcast stations, 50,000 watts. Answers to questions. Index.

Note: A short treatise on basic radio procedure for pilots and other airmen, intended as a textbook to supplement classroom instructions. The emphasis is entirely upon the military phase of radio navigation and communication from the U.S. Army viewpoint. The author employs a conversational style in an attempt to avoid technicality. Questions (and answers) are provided and the appendixes contain fundamental information for army radio operators.

LEE, JOHN GLESSNER

Fighter facts and fallacies. Illustrated by Beverley Hancock; with an introduction by Professor Jerome C. Hunsaker. New York: W. Morrow and Company, 1942. 61 p. illus. 23 cm. \$1.25.

5182

Contents: Introduction. Preface. The effect of wing loading. The effect of power loading. The effect of weight increase. The effect of streamlining. The effect of span loading. Propeller effects. Summary. Table of factors.

Note: A concise exposition of the basic facts about the design and performance of fighter planes. It is written for engineers, pilots, and laymen interested in military aviation.

LEY, WILLY

Bombs and bombing. New York: Modern Age Books, 1941. 124 p. illus. 21 cm. \$1.25.

5183

Contents: The flying terror. Parcels of destruction. Fire from the sky. The magic bullet. Bombing as a fine art. The other end of the trajectory. References.

Note: A brief discussion of the methods and results of aerial bombing, from the standpoints of military effectiveness and methods of passive and active air defense against bombing. Composition of bombs, principles of dive-bombing and level-flight bombing, and poison gases are treated in a style meant for general readers.

PRENTISS, AUGUSTIN MITCHELL

Civil air defense; a treatise on the protection of the civil population against air attack. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1941. 334 p. illus. 23 cm. \$2.75.

5184

Contents: Introduction. Rise of air power since the World War. Means and effects of air attack. Defense against air attack. Protection against high explosive bombs. Protection against incendiary bombs. Protection against gas. Aircraft warning service. Air raid warden service. First aid and medical service. Fire precautions service. Rescue and debris clearance service. Demolition and repair service. Decontamination service. Air raid precautions command organization. Training of air raids precautions personnel. Protection of industrial establishments. Protection of the home. Other measures of civil air defense.

Note: A discussion of defense against air raids, showing the nature of destruction caused by them and what protection is possible, and describing the methods, equipment, and organization necessary to effect it. Based largely on experience in London and European cities.

WILLIAMS, ALFORD JOSEPH

Airpower. New York: Coward-McCann, Inc.,
1940. 433 p. illus. 22 cm. \$3.75. 5185

Contents: Historical background of aviation. 1936: Italy and the Abyssinian campaign. Germany, France and Russia. England. 1938: "Gulfhawk" to Europe. Inspecting German aircraft

centers. Flying foreign ships. Progress in Italy. Background of air operations in Spain. 1939-1940: German conquest of Poland. War in the west. Tactics and machinery. Conquest of Norway. The Low Countries and the fall of France. America and the future. Bibliography. Index.

Note: A personal and historical record of the rise of airpower, particularly in Italy and Germany, and its consequences as they affect the life of European nations and those of the Western Hemisphere by a noted flyer and aeronautical authority.

NAVAL SCIENCE

AGETON, ARTHUR AINSLEY

The naval officer's guide. Second edition. New York: McGraw-Hill Book Company, Inc., 1944. 587 p. illus. (part col.) 23 cm. \$3.00. 5186

Contents: The navy of the United States. The navy education and training system. Training of candidates for Naval Reserve commissions. First station. Orientation. Uniforms and equipment. Assumption of command. The line officer. Commissary management on a small ship. Supply on a small ship. A task force and its functions. Military courtesy and honors. Customs of the service. Pay and allowances. Appointment, promotion, retirement, leave, and liberty. Fitness reports. Foreign service, shore, and sea duty. Privileges, rights, and restrictions. Public speaking. The communication officer. "In time of war—prepare." Military law and naval discipline. Leadership and the American bluejacket. The responsibilities of leadership. Bibliography. Index.

Note: A handbook for the naval officer providing accurate and authoritative information in convenient form on many matters of regulation, custom, and service. Naval organization, regulations applying to personal equipment and activities, the officer's job, ship administration, and other concerns of the officer are treated with emphasis both on instruction and counsel to help orient the newer officer, and on details of procedure and reference data to aid all officers in many questions and problems of service and duty.

BAXTER, JAMES PHINNEY, 3RD

The introduction of the ironclad warship. Cambridge, Mass.: Harvard University Press, 1933. 398 p. illus. 24 cm. \$5.00. 5186a

Contents: Introduction. A revolution in naval ordnance. Unarmored iron warships. Ironclad projects of the forties. The Crimean War. The first seagoing ironclad fleet. Great Britain enters the race. The passing of the wooden capital ship. The origins of the turret ship. Ordnance and armor in 1861. Mallory's ironclad policy. The North seeks a solution. Hampton Roads. The consequences of Hampton Roads. Appendixes: Notes on the introduction of the screw propeller. The reintroduction of the ram. Project of Napoleon III for armoring ships of the line. Dupuy de Lôme's report of April 16, 1858. Dupuy de Lôme's report of September 22, 1860. The Navy Department plan of 1861. Ericsson's proposal of December 23, 1861. Bibliography. Index.

Note: This scholarly work is based upon researches in the Admiralty Papers deposited in the Public Record Office in London; in the Archives Nationales, the Archives de la Marine, and the Archives des Constructions Navales in Paris; in the archives of the Navy Department, the Bureau of Construction and Repair, and the Bureau of Yards and Docks in Washington; in the papers of Gideon Welles in the Library of Congress; and in the Ericsson and Fox manuscripts at the New York Historical Society. The literature of the subject is cited in numerous footnote references and in the 18-page bibliography.

BRODIE, BERNARD

A guide to naval strategy. Third edition, revised. Princeton: Princeton University Press, 1944. 314 p. illus. 20 cm. \$2.75. 5187

Contents: Sea power in modern war. The tools of sea power. Command of the sea. The defense of shipping. Land-sea operations. Bases. The air arm of sea power. The tactics of fleet actions. The men behind the guns. Reading list. Index.

Note: A revised edition of the author's *A layman's guide to naval strategy*, 1942. The text was completely reset and increased about 15 per cent in size to give a fuller account of the 1943 and 1944 naval actions through the landings on Saipan and the coast of Normandy. The engineering data have been revised in the light of recent developments and changes in security regulations. There are new maps and charts, and a new index. The book is intended primarily for readers who are not professional

members of the Navy, although it is used in U.S. Navy training schools.

BRODIE, BERNARD

Sea power in the machine age. Second edition. Princeton: Princeton University Press, 1943. 462 p. 21 cm. \$3.75. 5188

Contents: Sea power and new technology. Steam comes to the battle fleet. Anglo-French rivalry over steam. The invasion panics. The Crimean War and the steam warship. War at sea under steam: Tactics and strategy. Strategic geography and the fuel problem. Timber gives way to iron. The new fabric of sea power. The vulnerable armorclad. Toward a new ordnance. The race between protection and penetration. War at sea with armored ships and great ordnance. Naval war enters a new dimension. The coming of the modern submarine. The undersea arm in the World War. Unlearned lessons and the second great U-boat war. The submarine arm and the war of squadrons. Naval aviation in the World War and post-war periods. Naval aviation in modern war. Naval invention and national policy. Index.

Note: A study of the effects of science and invention on sea power. For this edition, the chapter on naval aviation in modern war has been completely rewritten, and minor changes and corrections made throughout the book. It was written for statesmen, students of international affairs and other laymen and for the student of technology as it affects naval affairs.

CRANWELL, JOHN PHILIPS

The destiny of sea power and its influence on land power and air power. New York: W. W. Norton & Co., Inc., 1941. 262 p. illus. 21 cm. \$2.75. 5189

Contents: Foreword. The doctrine of sea power. Mechanization begins afloat. Mechanization comes ashore. Mechanization goes aloft. Air power and sea power in conflict. The doctrine of air power. Design for fighting. The pattern is set. The new trinity of power. The lessons of history.

Note: This book revises the whole concept of the role of sea power in modern war by pointing out parallels in sea power, air power, and mobile land power which, taken together, create a new trinity of war. Naval warfare has always been in essence mechanized warfare. Land forces and air forces now find themselves following naval strategy.

KAFKA, ROGER, AND ROY L. PEPPERBURG, EDITORS

Warships of the world. With illustrations by D. R. Merrill. New York: Cornell Maritime Press, 1944. 1038 p. illus. 25 cm. \$15.00. 5190

Contents (abridged): Usage. Abbreviations and symbols. United States. Battleships. Aircraft cruisers. Cruisers. Destroyers. Submarines. Patrol craft. Minecraft. Fleet auxiliaries. Yard and district craft. U.S. Coast Guard. Landing craft. Builders of landing craft. U.S. Navy ship type designations. France. Germany. Great Britain. Italy. Japan. Appendixes. Sources. Index of ship names and numbers.

Note: The first issue of an important American yearbook comparable to *Jane's Fighting ships* and other naval annuals. It tabulates data on more than 7,000 vessels, and in addition to statistical information includes for many ships, photographs, drawings of side elevations, and historical notes, many of these describing exploits of individual ships in World War II. The United States Navy is treated first and at greater length than the navies of the 51 other countries, but more pages are given to each of the principal foreign navies, including the British, than are given in the 1942 edition of *Jane's*. Although much information was unavailable and a considerable amount of available data was omitted at the request of the Navy Department, there is a surprising amount of new information not yet published in any other naval annual.

PRATT, FLETCHER

The navy's war. With a foreword by the Honorable Frank Knox, Secretary of the Navy. Illustrated with maps and charts and with 16 pages of U.S. Navy photographs. New York: Harper & Brothers, 1944. 295 p. illus. 21 cm. \$2.75. 5191

Contents: Foreword by Frank Knox. Preface. Hindsight. Campaign in the Java sea. The first great raids. Campaign in the Coral sea. One destroyer. The mysteries of Midway. Submarines Pacific. Caribbean command. Memorial of the *Wasp*. The Solomons campaign. Foresight. Index.

Note: A popular account of the part the United States Navy played in the first two years of World War II. The forecasts made by various authorities and the plans made by the Japanese concerning the course of war in the Pacific are summarized. The major naval actions up to the Solomons campaign are described against this background, and some forecasts concerning naval warfare in the future are made.

STEVENS, WILLIAM OLIVER, AND ALLAN WESTCOTT

A history of seapower. With maps and diagrams. New York: Doubleday, Doran and Company, Inc., 1942. 467 p. illus. 22 cm. \$5.00. 5191a

Contents: Early Mediterranean sea power. Roman sea power. The eastern Roman Empire. Venice and the Turk. Opening the ocean routes. Sea power in the north. England and the Armada. Rise of English sea power. The Napoleonic wars. Revolution in naval warfare. Rivalry for world power. The World War. Naval power after 1918. The second World War 1939-1941. Index.

Note: Combines textbook features with appeal for the general reader. Political events are emphasized to about the same degree as are those dealing with the art of naval warfare, the latter being illustrated with battle plans and analyses of historic engagements. References at the end of each chapter are mostly to historical works.

UNITED STATES. NAVAL OPERATIONS OFFICE. AVIATION TRAINING DIVISION

Naval aviation, 1943. Annapolis, Md.: United States Naval Institute, 1943. 147 p. illus. 25 cm. \$2.00. 5192

Contents: History of naval aviation. Naval aviation organization. Designation of naval aircraft. Pilot procurement. Ground officers. Flight training. Operations. Aircraft armament. Aircraft communications. Aviation seamanship. Aerological service. Photography. Lighter-than-air. Naval Air Transport Service. Marine Corps aviation. Coast Guard aviation. Rules of the road for aircraft. Civil Aeronautics Authority. Hygiene in aviation. Glossary. Index.

Note: Prepared by the Training Division of the Bureau of Aeronautics, Navy Department, to replace Warlick and Grant's *Naval aviation, a textbook for midshipmen*, Annapolis, Md., 1934. The present volume is mainly a survey of the organization and elementary procedures of the air service of the United States Navy, including the Marine Corps, Coast Guard, and NATS.

Considerable historical data are included. The book is illustrated with numerous reproductions of official U.S. Navy photographs, and there is a 15-page glossary of terms in common use in aviation literature.

UNITED STATES. NAVY DEPARTMENT

United States Navy regulations. 1920. Reprinted, 1944, with all changes up to and including no. 24. Washington, D.C.: Government Printing Office, 1944. 845 p. 21 cm. Paper, \$1.50. 5192a

Contents (abridged): Index (133 pages, not included in main pagination). Articles for the government of the Navy of the United States. Instructions to officers in general. Rank, command, and duty. Administration and discipline. Honors, distinctions, salutes, and ceremonies. Navy Department. Office of the Chief of Naval Operations. Bureau of Naval Personnel. Bureau of Medicine and Surgery. Judge Advocate General. Bureau of Yards and Docks. Bureau of Ordnance. Bureau of Ships. Bureau of Supplies and Accounts. Bureau of Aeronautics. Marine Corps. Organization of the naval forces. Commander in Chief. Officers. Petty officers and crew. Ship organization and routine. Care and preservation of hulls of ships and mechanical contrivances pertaining thereto. Stores afloat. Quarters and messes of officers on board ship. Quarantine; pilotage; convoy; transportation aboard government vessels; coordination of the Army and Navy; the American National Red Cross. Shore establishments: Naval districts. Naval bases. Navy yards and naval stations. Instructions governing employment, leave, pay, etc., of civilians in the naval service. Stores ashore. Appointments, promotions, and retirements. Enlistments, ratings, transfers, discharges, etc. Leave of absence and liberty. Money, pay, and allowances. Accounts and returns. Sales and surveys of material. Fuel. Repairs and alterations to ships. Correspondence. Mail and navy mail clerks. Reports. Rules for preventing collisions.

Note: These regulations are issued, in accordance with the provisions of section 1547 of the Revised Statutes of the United States, for the government of all persons attached to the naval service. They set forth the duty, responsibility, authority, distinctions, and relations of the various bureaus, offices, and individual officers each to the other.

ZIM, HERBERT SPENCER

Submarines, the story of undersea boats, illustrated with drawings by James MacDonald and with photographs. New York: Harcourt, Brace and Company, 1942. 306 p. illus. 22 cm. \$3.00. 5193

Contents: The ocean. The submarine. Ancestors of the submarine. The coming of the modern submarine. U.S. submarines since World War I. British and Russian submarines. German, Italian, and Japanese submarines. Principles of the submarine. Practice of diving. Power for the submarine. Electric power and compressed air. Navigation. The periscope. Communication. Fresh air. The torpedo. Other weapons. Enemies of the submarine. Life on a submarine. Submarine rescue. Individual submarine escape. The *Squalus* and the *Thetis*. Index.

Note: A popularized account of the history, development, and operation of the submarine, written for the layman and for the youth of high-school age. The role of the submarine in warfare is stressed, and there are many illustrations from photographs furnished by the United States Navy Recruiting Bureau.

APPENDIX

DIRECTORY OF STATE AGENCIES IN THE UNITED STATES THAT ISSUE PUBLICATIONS IN GEOLOGY, ENGINEERING AND AGRICULTURE.

Geology

ALABAMA: GEOLOGICAL SURVEY, University.
ARIZONA: BUREAU OF MINES, Tucson.
ARKANSAS: GEOLOGICAL SURVEY, Little Rock.
CALIFORNIA: DIVISION OF MINES, DEPARTMENT OF NATURAL RESOURCES, San Francisco.
COLORADO: GEOLOGICAL SURVEY BOARD, Denver.
CONNECTICUT: GEOLOGICAL AND NATURAL HISTORY SURVEY COMMISSION, Hartford.
FLORIDA: GEOLOGICAL DEPARTMENT, STATE BOARD OF CONSERVATION, Tallahassee.
GEORGIA: GEOLOGICAL SURVEY, DIVISION OF MINES, MINING, AND GEOLOGY, DEPARTMENT OF NATURAL RESOURCES, Atlanta.
IDAHO: BUREAU OF MINES AND GEOLOGY, Moscow.
ILLINOIS: DIVISION OF THE STATE GEOLOGICAL SURVEY, DEPARTMENT OF REGISTRATION AND EDUCATION, Urbana.
INDIANA: DIVISION OF GEOLOGY, DEPARTMENT OF CONSERVATION, Indianapolis.
IOWA: GEOLOGICAL SURVEY, Iowa City.
KANSAS: GEOLOGICAL SURVEY, Lawrence.
KENTUCKY: GEOLOGICAL DIVISION, DEPARTMENT OF MINES AND MINERALS, Lexington.
LOUISIANA: GEOLOGICAL SURVEY, DEPARTMENT OF CONSERVATION, Baton Rouge.
MAINE: STATE GEOLOGIST, Augusta.
MARYLAND: GEOLOGICAL SURVEY, Baltimore.
MASSACHUSETTS: MASSACHUSETTS GEODETIC SURVEY, DEPARTMENT OF PUBLIC WORKS, Boston.
MICHIGAN: GEOLOGICAL SURVEY DIVISION, DEPARTMENT OF CONSERVATION, Lansing.
MINNESOTA: GEOLOGICAL SURVEY, UNIVERSITY OF MINNESOTA, Minneapolis.
MISSISSIPPI: GEOLOGICAL SURVEY, University.
MISSOURI: GEOLOGICAL SURVEY AND WATER RESOURCES, Rolla.
MONTANA: BUREAU OF MINES AND GEOLOGY, Butte.
NEBRASKA: GEOLOGICAL SURVEY, CONSERVATION AND SURVEY DIVISION, UNIVERSITY OF NEBRASKA, Lincoln.
NEVADA: STATE BUREAU OF MINES, UNIVERSITY OF NEVADA, Carson City.
NEW HAMPSHIRE: PLANNING AND DEVELOPMENT COMMISSION, Concord.
NEW JERSEY: DIVISION OF GEOLOGY AND TOPOGRAPHY, DEPARTMENT OF CONSERVATION AND DEVELOPMENT, Trenton.
NEW MEXICO: BUREAU OF MINES AND MINERAL RESOURCES, STATE SCHOOL OF MINES, Socorro.
NEW YORK: STATE GEOLOGIST, EDUCATION DEPARTMENT, Albany.
NORTH CAROLINA: CONSERVATION AND DEVELOPMENT DEPARTMENT, Raleigh.
NORTH DAKOTA: GEOLOGICAL SURVEY, Grand Forks.
OHIO: GEOLOGICAL SURVEY, Columbus.
OKLAHOMA: GEOLOGICAL SURVEY, Norman.
OREGON: DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES, Portland.

PENNSYLVANIA: TOPOGRAPHIC AND GEOLOGIC SURVEY, DEPARTMENT OF INTERNAL AFFAIRS, Harrisburg.
RHODE ISLAND: MINERAL RESOURCES COMMITTEE, RHODE ISLAND INDUSTRIAL COMMISSION, Providence.
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